Ecosystem Profile

THE CARIBBEAN ISLANDS BIODIVERSITY HOTSPOT

Final Version

December 2019

Prepared by:
Caribbean Natural Resources Institute (CANARI)

in collaboration with:
BirdLife International

and with technical support from:
International Union for Conservation of Nature (IUCN)
New York Botanical Garden (NYBG)

Drafted by the ecosystem profiling team:
Nicole A. Brown, CANARI
David Díaz, BirdLife International
Isadora Angarita, BirdLife International
Natalie Boodram, CANARI
Gillian C. Bunting, BirdLife International
Anna Cadiz-Hadeed, CANARI
Frédérique Fardin, CANARI
David Wege, BirdLife International

with support from:
Leida Buglass, CANARI
Ronald Cadémus, CANARI
Mike Evans, BirdLife International
Brian Bloom, NYBG
Craig Hilton-Taylor, IUCN
Sixto Incháustegui, Consultant
Dara-Marie Raggay, CANARI

under the supervision of:
Michele Zador, Critical Ecosystem Partnership Fund (CEPF)

Assisted by experts and contributors from the following institutions:

Academia de Ciencias de la República Domincana
Agence Française de Développement
Agence Nationale des Aires Protégées d'Haïti (ANAP)
Agencia Española de Cooperación Internacional para el Desarrollo (AECID)
Alianza ONG
Bahamas National Trust
BirdLife Jamaica
BirdsCaribbean
Bureau de Conseil et Services Humanitaires (BUCOSEH)
Caribbean Biodiversity Fund (CBF)
Caribbean Coastal Area Management Foundation (C-CAM)
Centre for Resource Management and Environmental Studies (CERMES), University of the West Indies - Cave Hill
Centro Agronómico Tropical de Investigación y Enseñanza – sucursal República Dominicana
Centro de Investigaciones de Biología Marina
Centro para el Desarrollo Agropecuario y Forestal (CEDAF)
Centro para la Conservación y Ecodesarrollo de la Bahía de Samaná y su Entorno (CEBSE)
Consejo Nacional para el Cambio Climático y el Mecanismo de Desarrollo Limpio
Consorcio Ambiental Dominicano (CAD)
Department of Biological and Chemical Sciences, Faculty of Science and Technology, University of the West Indies - Cave Hill
Department of Life Sciences, University of the West Indies – Mona
Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ)
Diamond Village Community Heritage Organization
Durrell Wildlife Conservation Trust
Environmental Awareness Group (EAG)
Environmental foundation of Jamaica (EFJ)
Environmental Solutions Ltd
Fauna and Flora International (FFI)
Fondation Macaya pour le Développement (FMD)
Fondation pour la Biodiversité Marine
Fondation Seguin
Fondo Pro Naturaleza (PRONATURA)
Food and Agriculture Organization (FAO)
Fundacion Ecologica Maguá
Fundación José Delio Guzmán
Fundación Loma Quita Espuela
Fundación PROGRESSIO
Fundación Propagás
Fundación Sur Futuro
Grenada Dove Conservation Project
Grupo Jaragua Inc. (GJ)
Grupo Social Ecológico
HELVETAS Swiss Intercooperation
Imperial College of London
Institute for Sustainable Development, University of the West Indies – Mona
Instituto Dominicano de Desarrollo Integral (IDDI)
Instituto Tecnológico de Santo Domingo
Inter-American Development Bank (IDB)
Island Conservation
Jamaica Conservation and Development Trust
Jamaica Environment Trust (JET)
Jamaica's Forestry Department
KIUNZI
Le Nouvelliste Haïti
Ministère de l'Environnement Haïti (MDE)
Ministerio de Educación Superior, Ciencia y Tecnología de la República Dominicana
Ministerio de Medio Ambiente y Recursos Naturales de la República Dominicana
Ministry of Agriculture and Fisheries, Division of Forestry, Wildlife, and National Parks, Government of Dominica
Ministry of Agriculture, Fisheries, Physical Planning, Natural Resources and Co-operatives, Department of Forestry, Government of Saint Lucia
Ministry of Agriculture, Industry, Forestry, Fisheries and Rural Transformation, Department of Forestry, Government of St. Vincent and the Grenadines
Ministry of Agriculture, Lands, Forestry, Fisheries and The Environment, Department of Forestry, Government of Grenada
Ministry of Economic Growth and Job Creation, Government of Jamaica
Ministry of Education, Innovation, Gender Relations and Sustainable Development, Department of Sustainable Development, Government of Saint Lucia
Ministry of Health, Wellness and the Environment, Government of St. Vincent and the Grenadines
Ministry of Industry, Commerce Agriculture and Fisheries, Fisheries Division, Government of Jamaica
Museo Nacional de Historia Natural de la República Dominicana
National Environment and Planning Agency (NEPA), Government of Jamaica
National Parks, Rivers and Beaches Authority of St. Vincent and the Grenadines
National Protected Area Trust Fund (Jamaica)
Natural History Museum of Jamaica - Institute of Jamaica
Negril Environment Protection Trust (NEPT)
Nevis Water Department
Observatoire National de l'Environnement et de la Vulnérabilité
Organisation pour le Développement de la Forêt des Pins (OPDFM)
Panos Caribbean
Parc National Naturel Macaya

Planning Institute of Jamaica (PIOJ)
Pontificia Universidad Católica Madre y Maestra (PUCMM)
Red Nacional de Apoyo Empresarial a la Protección Ambiental (EcoRed)
Réseau d'Enseignement Professionnel et d'Interventions Ecologiques (REPIE)
Russa García and Asociados
Sociedad Ornitológica de la Hispaniola
Société Audubon Haïti (SAH)
The Bahamas Environment, Science and Technology Commission
The Nature Conservancy (TNC)
United Nations Development Programme – Haiti
United Nations Development Programme – Jamaica
United Nations Development Programme Barbados and the OECS
United Nations Environment
United States Agency for International Development (USAID)
Universidad Nacional Pedro Henríquez Ureña (UNPHU)
University of Florida
Urban Development Corporation (UDC)
Windsor Research Centre (WRC)
World Bank Group

Acronyms

ACS	Association of Caribbean States
AIDS	Acquired Immune Deficiency Syndrome
ANAP	Agence Nationale des Aires Protégées
AZE	Alliance for Zero Extinction
BEST	Biodiversity and Ecosystem Services in Territories of European Overseas
BIOPAMA	Biodiversity and Protected Areas Management
CABI	Centre for Agricultural Bioscience International
CAD	Consorcio Ambiental Dominicana
CaMPAM	Caribbean Marine Protected Areas Management Network and Forum
CANARI	Caribbean Natural Resources Institute
CANROP	Caribbean Network of Rural Women Producers
CARICOM	The Caribbean Community
CARMABI	Caribbean Research and Management of Biodiversity
CARPHA	Caribbean Public Health Agency
CBC	Caribbean Biological Corridor
CBD	United Nations Convention on Biological Diversity
CBF	Caribbean Biodiversity Fund
CBO	Community-based organization
CC4FISH	Climate Change Adaptation in the Eastern Caribbean Fisheries Sector Project
C-CAM	Caribbean Coastal Area Management
CCCCC	Caribbean Community Climate Change Centre
CCI	Caribbean Challenge Initiative
CCSG	Cockpit Country Stakeholder Group
CDB	Caribbean Development Bank
CDEMA	Caribbean Disaster Emergency Management Agency
CEBSE	Centro para la Conservación y Ecodesarrollo de la Bahía de Samaná y su Entorno (Center for the Conservation and Ecodevelopment of Samaná Bay and Its Surroundings)
CEP	Caribbean Environment Programme
CEPF	Critical Ecosystem Partnership Fund
CERMES	Centre for Resource Management and Environmental Studies
CITES	Convention on the International Trade in Endangered Species
CIVICUS	World Alliance for Citizen Participation
CLME+	Caribbean and North Brazil Shelf Large Marine Ecosystems
CNAP	Centro Nacional de Áreas Protegidas (National Protected Area Center)
CNFO	Caribbean Network of Fisherfolk Organisations
ConSoCs	Civil Society Consultative Groups
COP	Conference of Parties
CR	Critically Endangered (IUCN Red List)
CRC	Caribbean Regional Committee of IUCN Members
CRFM	Caribbean Regional Fisheries Mechanism
CSME	Caribbean Single Market and Economy
CSO	Civil Society Organization

CSR	Corporate Social Responsibility
CYEN	Caribbean Youth Environmental Network
ECMMAN	Eastern Caribbean Marine Managed Areas Network
ECORED	Red Nacional de Apoyo Empresarial a la Protección Ambiental (National Network of Business Support for Environmental Protection)
EIA	environmental impact assessment
EN	Endangered (IUCN Red List)
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FDI	foreign direct investment
FFI	Fauna and Flora International
FLQE	Fundacion Loma Quita Espuela (Loma Quita Espuela Foundation)
GCF	Green Climate Fund
GCFI	Gulf and Caribbean Fisheries Institute
GCRMN	Global Coral Reef Monitoring Network
GDP	gross domestic product
GEF	Global Environment Facility
GIS	geographic information system
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (German Corporation for International Cooperation)
HDI	Human Development Index
HIV	Human Immunodeficiency Virus
IAS	Invasive alien species
IBA	Important Bird and Biodiversity Area
IDB	Inter-American Development Bank
IFAW	International Fund for Animal Welfare
INGO	International non-governmental organization
INTEC	Instituto Tecnológico de Santo Domingo (Santo Domingo Institute of Technology)
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature
JCDT	Jamaica Conservation and Development Trust
JET	Jamaica Environment Trust
JN	Jamaica National Organizations (JN Group, JN Bank, JN Foundation)
KBA	Key Biodiversity Area
KfW	Kreditanstalt für Wiederaufbau (German Development Bank), now referred to simply as KfW
LFMC	local forest management committee
MARENA	Ministry of Environment and Natural Resources
MEA	multilateral environmental agreement
MOU	memorandum of understanding
MPA	marine protected area
NAP	National Action Plan (UNCCD)
NBSAP	National Biodiversity Strategy and Action Plan
NEPA	National Environment and Planning Agency (Jamaica)
NGO	Non-governmental organization

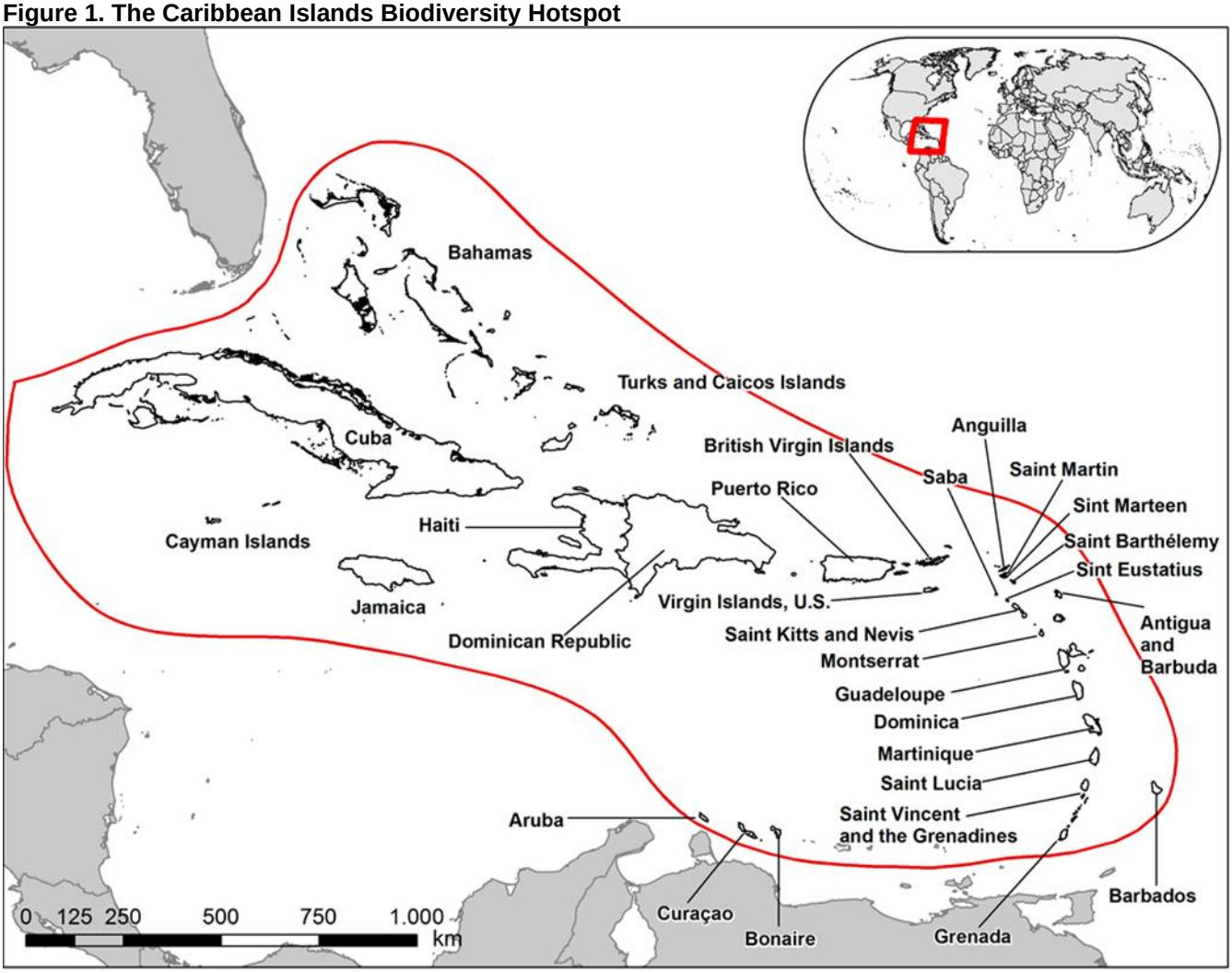
NTFP	non-timber forest product
OCT	overseas country or territory
OECM	Other Effective Area-based Conservation Measure
OECS	Organisation of Eastern Caribbean States
OR	outermost region
OT	overseas territory
PASMP	Protected Areas System Master Plan
PES	payment for ecosystem services
PPCR	Pilot Project for Climate Resilience
PRECIS	Providing Regional Climates for Impact Studies
Pro-Naturaleza	Sociedad Cubana para la Protección del Medio Ambiente (Cuban Society for Environmental Protection)
PRONATURA	Fondo Pro Naturaleza (Fund for Nature)
RACC	Regional Advisory Committee for the Caribbean
RAD	Red Arrecifal Dominicana (Dominican Reef Network)
RAUDO	Red Ambiental de Universidades Dominicanas (Dominican Universities Environmental Network)
REDD	Reducing Emissions from Deforestation and Forest Degradation
RIT	Regional Implementation Team
RSPB	Royal Society for the Protection of Birds
SFCA	Special Fishery Conservation Area
SIDS	Small Island Developing States
SPAW	Specially Protected Areas and Wildlife
TNC	The Nature Conservancy
UK	United Kingdom
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV and AIDS
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Devlopment Programme
UNECLAC	United Nations Economic Commission for Latin America and the Caribbean
UNEP	United Nations Environment Programme, now referred to as UN Environment
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNPHU	Universidad Nacional Pedro Henríquez Ureña
USA	United States of America
USAID	United States Agency for International Development
UWI	University of the West Indies
VU	Vulnerable (IUCN Red List)
WIDECAST	Wider Caribbean Sea Turtle Conservation Network
WRI	World Resources Institute
WWF	World Wide Fund for Nature / World Wildlife Fund

Contents

EXECUTIVE SUMMARY

Despite their small land area, the Caribbean Islands support one of the highest numbers of globally threatened species of any hotspot in the world. The Caribbean Islands are a biodiversity-rich archipelago that comprises 30 countries and territories and stretches across nearly 4 million km^2 of sea (Figure 1). The Caribbean Islands are one of 36 biodiversity hotspots in the world. Biodiversity hotspots hold at least 1,500 plant species found nowhere else and have lost at least 70 percent of their original natural habitat (Mittermeier *et al.* 2004). The island biogeography and complex geology of the Caribbean has created unique habitats and high species diversity.

Figure 1. The Caribbean Islands Biodiversity Hotspot



Background to the Preparation of the Ecosystem Profile and Investment Strategy

Although there have been several biodiversity-related interventions in the hotspot over the years, its biodiversity and ecosystems continue to face grave threats, which civil society has a role to play in addressing. The Critical Ecosystem Partnership Fund (CEPF) provides rapid and flexible funding to civil society to act in areas where globally significant biodiversity is under the greatest threat. Between October 2010 and July 2016, CEPF invested $6.9 million in the Caribbean Islands. Based on the results of this initial phase of investment, CEPF's Donor Council decided to reinvest in the hotspot to consolidate

gains made and make further progress. This ecosystem profile sets out how the CEPF will support civil society's efforts to do this. The ecosystem profile was developed between January 2017 and March 2018, through a process that engaged 175 stakeholders from 94 organisations within civil society, government, the private sector and the donor community.

Objective

The objective of the CEPF program in the Caribbean is to engage civil society in the conservation of globally threatened biodiversity through targeted investments with maximum impact on the highest priorities for biodiversity conservation and delivery of ecosystem services.

Expected Results

The investment is expected to lead to:

- Better protection and management of 33 of the most biologically important Key Biodiversity Areas (KBAs) across the hotspot.
- More robust landscape-scale connectivity and ecosystem resilience in seven conservation corridors that are important for their ecosystem services.
- Reversed declines and avoided extinctions of threatened Caribbean endemic species.
- Conditions that better enable biodiversity conservation in hotspot countries.
- Stronger and more effective civil society organizations (CSOs) in conservation.

Niche and Investment Strategy

CEPF will work towards the objective for the hotspot by supporting work that improves conservation at the species, site and corridor levels, while helping to foster an enabling environment for conservation and make CSOs stronger and more effective. The new phase of CEPF investment in the Caribbean Islands will build on gains made between 2010 and 2016 and replicate successful conservation approaches. It will also support innovation and testing of new conservation approaches, and directly link conservation to human wellbeing and climate resilience. The new investment will mainstream gender and climate change and, in a departure from the initial phase, will include a dedicated strategic direction on species conservation. The strategy encourages the technical and financial value-added of strategic partnerships.

The main elements of the investment strategy are as follows:

- **Species Level**: CEPF will support planning and action for priority Critically Endangered and Endangered species that are endemic to one island only, with the aim of reversing species decline and preventing extinctions. Globally threatened single-island endemic species occurring on Barbados and Grenada, where no priority sites have been selected, will also be eligible for support. The strategy also prioritizes strategic conservation actions in support of seven priority plant families with high levels of endemism and threat, because of intensive use by local populations.

- **Site Level**: CEPF will support the preparation and implementation of management plans for priority sites, as well as the strengthening of institutional arrangements and other actions to enhance protected area management effectiveness. CEPF will also support the application of habitat management and restoration tools that are needed to achieve conservation goals. In addition, CEPF will fund processes in unprotected or under-protected KBAs to bring them under

formal protection and to promote appropriate land management designations and planning frameworks.

- **Corridor Level**: CEPF will support landscape-level objectives in priority conservation corridors. CEPF will support the preparation and implementation of landscape-level policy and planning frameworks, particularly those that enhance ecosystem service functionality and climate change resilience of the priority sites and catchments that they support.

- **Enabling Environment**: CEPF will support civil society efforts to play an effective role in monitoring and shaping policy, governance, and decision-making processes. CEPF will also support efforts to build informed constituencies for conservation.

- **Civil Society Capacity**: CEPF will support capacity strengthening for Caribbean CSOs towards the eventual goal of ensuring that there are sustainable and self-reliant organizations engaged in a range of conservation activities at regional, national and local levels. CEPF funding will be geared towards a holistic, institution-wide approach to institutional strengthening, which will lead to self-reliance and sustainability.

Table 1. CEPF Caribbean Islands Strategic Directions and Investment Priorities

Strategic Directions	CEPF Investment Priorities
1. Improve the protection and management of 33 priority sites for long-term sustainability	1.1 Strengthen the legal protection of priority sites 1.2 Prepare and implement participatory management plans that support broad stakeholder collaboration 1.3 Assess climate change impacts and integrate climate change adaptation into management plans and their implementation responses to protect ecosystem functions and build resilience 1.4 Eradicate, control or prevent further spread of invasive plants and animals that are affecting globally threatened species populations at priority sites 1.5 Update the KBA analysis to fill critical conservation planning data gaps in Barbados and Haiti
2. Increase landscape-level connectivity and ecosystem resilience in seven priority corridors	2.1 Prepare and support implementation of participatory local and corridor-scale land-use and watershed management plans to guide future development and conservation efforts 2.2 Support sustainable livelihoods in agriculture, fisheries, forestry, and nature tourism that enhance ecosystem resilience and landscape-level connectivity and deliver gender-equitable benefits, in order to maintain the functionality of priority sites 2.3 Promote the adoption and scaling up of conservation best practices in those enterprises compatible with conservation to promote connectivity and ecosystem services in the corridors
3. Safeguard priority Critically Endangered and Endangered species	3.1 Prepare and implement conservation actions plans for priority Critically Endangered and Endangered species 3.2 Identify climate impacts and develop and implement management plans in response to climate change impacts on priority Critically Endangered and Endangered species 3.3 Support assessments of high priority plant families to update national lists and the IUCN Red List and develop conservation action plans

Strategic Directions	CEPF Investment Priorities
4. Improve the enabling conditions for biodiversity conservation in countries with CEPF priority sites	4.1 Support the role of civil society organizations in policy dialogue and advocacy focused on government policies and practices that impact priority sites 4.2 Mainstream biodiversity conservation and ecosystem service values into development policies, projects, and plans by government and the private sector, with a focus on addressing major threats such as unsustainable agriculture, mining, tourism, and infrastructure development 4.3 Establish and strengthen sustainable financing mechanisms 4.4 Build stakeholder and constituency support for the conservation of priority sites and priority globally threatened species through targeted communication and information dissemination
5. Support Caribbean civil society to conserve biodiversity by building local, national and regional institutional capacity and fostering stakeholder collaboration	5.1 Strengthen CSOs' technical knowledge and skills to implement practical, applied biodiversity conservation actions through short-term training in topics that will advance implementation of projects that support CEPF priorities, based on a CSO training assessment and strategy 5.2 Strengthen the administrative, financial, fundraising, and project management capacity of strategic CEPF civil society partners to implement biodiversity conservation programs and activities 5.3 Support local, national and regional information exchange, networking, mentorship and coalition building among civil society organizations
6. Provide strategic leadership and effective coordination of CEPF investment through a Regional Implementation Team	6.1 Build a broad constituency of civil society groups working across institutional and political boundaries to strengthen the communication capacity of local civil society organizations in support of their mission and to build public awareness on the importance of conservation outcomes

Eligibility

The following 11 Caribbean countries that are borrowing members of the World Bank and signatories to the United Nations Convention on Biological Diversity (CBD) are eligible for CEPF support: Antigua and Barbuda; the Commonwealth of The Bahamas; Barbados; the Commonwealth of Dominica; the Dominican Republic; Grenada; Haiti; Jamaica; Saint Lucia; Saint Kitts and Nevis; and St. Vincent and the Grenadines.

1 INTRODUCTION

The Caribbean Islands Biodiversity Hotspot is one of 36 biodiversity hotspots in the world. Biodiversity hotspots hold least 1,500 plant species found nowhere else and have lost at least 70 percent of their original habitat extent (Mittermeier *et al*. 2004). The island geography and complex geology of the Caribbean has created unique habitats and high species diversity, and these islands have among the highest number of globally threatened species of any hotspot in the world. Between October 2010 and July 2016, the Critical Ecosystem Partnership Fund (CEPF) invested $6.9 million towards safeguarding the Caribbean's biodiversity and preventing extinctions. At its 29th meeting, in June 2016, the CEPF Donor Council selected the Caribbean Islands for reinvestment, to build on gains made during the initial phase of investment and make further progess with conserving the hotspot's rich biodiversity.

CEPF is a leader in safeguarding the world's biodiversity hotspots through support to civil society. Founded in 2000, CEPF is a joint initiative of l'Agence Française de Développement, Conservation International (CI), the European Union (EU), the Global Environment Facility (GEF), the Government of Japan, and the World Bank. CI hosts the CEPF Secretariat, which administers the program globally.

CEPF is unique among funding mechanisms in that it focuses on biological areas rather than political boundaries and examines conservation threats on a hotspot-wide basis to identify and support an ecoregional, rather than a national, approach to achieving conservation outcomes. A fundamental purpose of CEPF is to ensure that civil society is engaged in efforts to conserve biodiversity in the hotspots, and to this end, CEPF provides civil society with an agile and flexible funding mechanism, complementing funding currently available to government agencies. An additional purpose is to ensure that those efforts complement existing strategies and frameworks established by local, regional, and national governments.

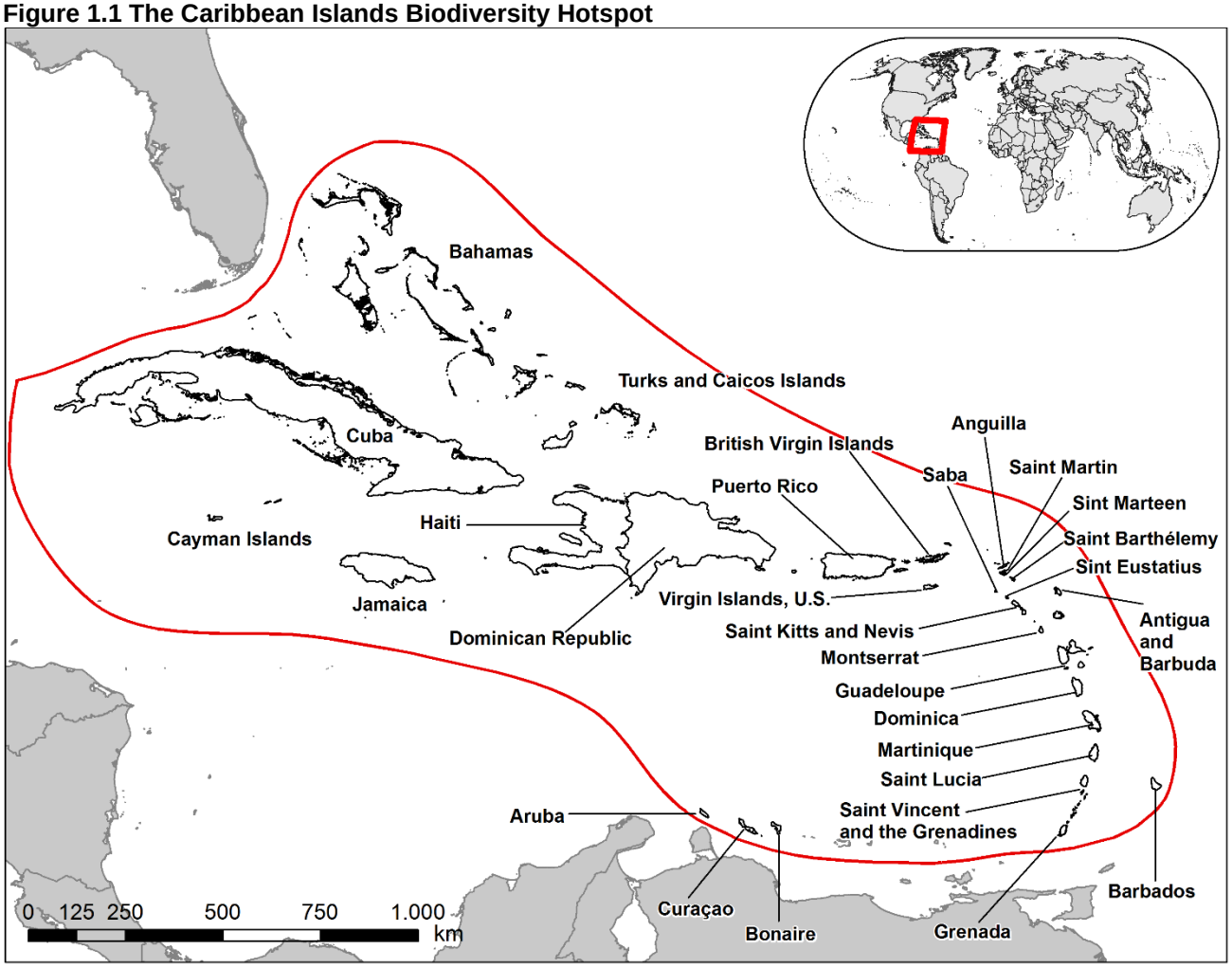
The Caribbean Islands Hotspot comprises more than 7,000 islands, islets, reefs and cays with a land area of 230,000 km^2 scattered across 4 million km^2 of sea (Figure 1.1). The hotspot takes in the 30 biologically and culturally diverse nations and territories of the following island groups: The Bahamas; the Greater Antilles; the Virgin Islands; the Cayman Islands; the Lesser Antilles; and the Netherlands Antilles. This represents a complex region of 12 independent nations and several Dutch, French, United Kingdom (UK) and United States (US) overseas countries, territories and outermost regions (Table 1.1). This set of islands supports populations of endemic plants and vertebrates, amounting to at least 2 percent of world's total species complement. Species endemism is very high within the region, yet the land area of the insular Caribbean is a mere 230,000 km^2 (90 percent of which is accounted for by Cuba, Hispaniola, Jamaica and Puerto Rico).

The initial phase of CEPF investment in the Caribbean Islands Hotspot, between 2010 and 2016, resulted in the award of 77 grants to 68 different organizations for activities in eight countries. Seventy-eight percent of all funding awarded went to local and regional Caribbean organizations. The decision to reinvest in the hotspot was motivated by the success of the first program, especially opportunities to consolidate gains made and add value towards sustaining results into the long term.

The context for conservation in the hotspot has undergone changes since the first CEPF investment in the Caribbean. The body of knowledge about some species and ecosystems has grown. There have been increases in formal protection of terrestrial sites and the expansion of countries' systems of protected areas. There have also been advances in the legislative and policy landscape. At the same time, there have also been changes in ecological conditions. The threat of climate change looms large for these Small

Island Developing States (SIDS) and land-use pressures continue to drive the degradation of ecosystems and affect important ecosystem processes and systems that are linked to human well-being.

Figure 1.1 The Caribbean Islands Biodiversity Hotspot



This ecosystem profile sets out the how CEPF will support civil society's efforts to improve the conservation of global biodiversity in the Caribbean Islands. CEPF develops ecosystem profiles to identify and articulate an investment strategy for each hotspot that will receive funding. Preparation of the ecosystem profile is not simply a desk study but involves a regional consultation process, so that the final outcome is owned and used by stakeholders in the region. Each ecosystem profile reflects a rapid assessment of biological priorities and the underlying causes of biodiversity loss within particular ecosystems. The profile couples these two elements with an inventory of conservation-related investments taking place within the hotspot and other key information, to identify how CEPF funding can provide the greatest incremental value. Finally, each profile provides a clear picture of what the conservation priorities are, and which ones would be the most appropriate to receive CEPF investment.

Defining the "conservation outcomes" for a given hotspot is one of the most critical steps in the ecosystem profiling process. These outcomes refer to the entire set of conservation targets in a hotspot to be achieved in order to prevent loss of global biodiversity. The CEPF funding niche and strategy are based on these outcomes, firstly to ensure that CEPF investments are directed at relevant issues, and secondly to enable measurement of the success of investments, since these targets also represent a baseline for monitoring. Conservation outcomes are defined at three scales, representing: (i) the globally

threatened species within the hotspot; (ii) the sites that sustain them; and (iii) the higher-scale corridors (i.e. land- and seascapes) necessary to maintain the ecological and evolutionary processes upon which these sites depend. Respectively, these outcomes are: "extinctions avoided," "areas protected" and "corridors created." In defining outcomes at the species, site and corridor levels, CEPF aims to identify targets that are quantitative, justifiable and repeatable. CEPF does not try to achieve all of these targets in every hotspot but its investment niche and strategy aim to address a priority subset of them.

Each ecosystem profile recommends broad strategic funding directions that can be implemented by civil society to contribute to the conservation of biodiversity in the hotspot. To this end, CEPF provides civil society with a flexible funding mechanism. An additional purpose is to ensure that those efforts complement existing strategies and frameworks established by local, regional and national governments. CEPF promotes working alliances among community groups, nongovernmental organizations (NGOs), government, academic institutions and the private sector, combining unique capacities and eliminating duplication of effort for a comprehensive approach to conservation. CEPF targets transboundary cooperation when areas rich in biological value straddle national borders, or in areas where a regional approach will be more effective than a strictly national one.

Not all political entities in the Caribbean Islands Hotspot are eligible for CEPF funding. At the time of preparation of the ecosystem profile, eligibility was restricted to countries that are borrowing members of the World Bank and signatories to the United Nations Convention on Biological Diversity (CBD). Thus, 11 of the independent nations in Table 1.1 were considered eligible for CEPF funding, while Cuba and the overseas countires and territories (OCTs) of France, the Netherlands, the UK and the United States of America (USA) were not. Irrespective of eligibility, the ecosystem profile included data and analysis from the entire hotspot. However, the CEPF Niche (see Chapter 12) and Investment Strategy (see Chapter 13) were targeted solely at the 11 countries considered eligible for CEPF funding. Nevertheless, it is hoped that this profile will be used to leverage funds from other donors to conserve priority species and sites throughout the hotspot, including in countries not currently eligible for CEPF funding.

Table 1.1 Countries and Territories of the Caribbean Islands Hotspot

Independent States	**Overseas Territories and Countries**			
	France	**Kingdom of the Netherlands**	**UK**	**USA**
Antigua and Barbuda*****	Guadeloupe	Aruba	Anguilla	Navassa
The Commonwealth of The Bahamas*****	Martinique	Bonaire	British Virgin Islands	Puerto Rico
Barbados*****	St. Barthélemy	Curaçao	Cayman Islands	US Virgin Islands
Cuba	St. Martin	Saba	Montserrat	
The Commonwealth of Dominica*****		Sint Eustatius	Turks and Caicos Is	
Dominican Republic*****		Sint Maarten		
Grenada*****				
Haiti*****				
Jamaica*****				
Saint Lucia*****				
Saint Kitts and Nevis*****				
St. Vincent and the Grenadines*****				

Notes: * = CEPF-eligible countries.

2 BACKGROUND

This ecosystem profile and the five-year investment strategy for the Caribbean Islands Biodiversity Hotspot it contains were developed by the Caribbean Natural Resources Institute (CANARI) and BirdLife International, with technical support from the International Union for Conservation of Nature (IUCN) and the New York Botanical Garden (NYBG), under the supervision of the CEPF Secretariat. The ecosystem profile is a situational analysis of the social, environmental, economic and political conditions that inform and influence biodiversity conservation efforts in the hotspot. It further defines a niche for the CEPF intervention and sets out a strategy to guide its program in the Caribbean Islands for a five-year period.

2.1 Preliminary Data Compilation and Analysis

The process to develop the ecosystem profile entailed the compilation of existing data and information on biodiversity, socio-economic conditions, policy, civil society, threats, climate change and funding, as well as the pre-assessment of the hotspot's Key Biodiversity Areas (KBAs) against the criteria of the new *Global Standard for the Identification of Key Biodiversity Areas* (IUCN 2016). The profiling team prepared discussion papers based on desk research and interviews with in-country stakeholders. These papers and guiding questions were used at the three national workshops to elicit additional information from stakeholders. Supplementary information on civil society was gathered via an online survey that was administered in September 2017.

2.2 KBA Assessment

More than 400 sites were analyzed during this ecosystem profile update using the new global KBA standard (IUCN 2016). As recommended, the baseline for the list of KBAs took into account sites from existing initiatives, including: sites those identified previously as KBAs according to the previous global standard (Langhammer *et al*. 2007); Important Bird and Biodiversity Areas (IBAs); Alliance for Zero Extinction (AZE) sites; and protected areas.

This preliminary list was shared with national experts (electronically and via an interactive ArcGIS Story Map microsite) and discussed during three national workshops (Dominican Republic, Haiti and Jamaica), and an online sub-regional consultation for The Bahamas and the eastern Caribbean. The KBAs with the highest biological values were later reviewed by national expert groups against criteria to determine enabling conditions for CEPF investment and operational feasibility, and by participants in the final regional workshop in Jamaica.

2.3 Stakeholder Consultation

The ecosystem profiling process incorporated regional stakeholder expertise through three national workshops (Dominican Republic, Haiti and Jamaica), and an online sub-regional meeting for The Bahamas and the eastern Caribbean, national KBA working groups and a regional consultation. The process engaged 175 stakeholders from 94 organizations within civil society, government, the private sector and the donor community.

The two-day national workshops and an online sub-regional meeting were held during June and July 2017. The workshop in the Dominican Republic was coordinated by Fondo Pro Naturaleza

(PRONATURA) in association with the Universidad Nacional Pedro Henriquez Ureña (UNPHU). The Société Audubon coordinated the meeting in Haiti and the Jamaica workshop was organised by the Caribbean Coastal Area Management (C-CAM) Foundation, in association with the Institute for Sustainable Development of the University of the West Indies (Mona). The national KBA expert working groups were convened in November and December 2017, and the regional workshop in Kingston, Jamaica took place in January 2018 (Table 2.1).

Table 2.1 Schedule of Consultations on the Ecosystem Profile

Workshop	Date	Number of Participants
Dominican Republic National Consultation	27 – 28 June 2017	51
Haiti National Consultation	3 – 4 July 2017	34
Jamaica National Consultation	7 - 8 July	31
Online Meeting for The Bahamas and the eastern Caribbean	25 July 2017	12
Regional Consultation	10 January 2018	27
Total Workshop Participants		**155**

The profiling team compiled discussion papers on thematic issues that were presented at the national consultations. The discussion papers and baseline lists of KBAs and trigger species were available on the interactive ArcGIS Story Map microsite between June and September 2017. The discussion papers and workshop feedback formed the basis of the chapters of this profile.

The draft niche and strategy for investment were reviewed and validated by participants in the regional consultation to update the ecosystem profile. This regional meeting brought together 27 experts from civil society, government, and funding agencies, who were asked to review the document from a regional perspective. The recommendations of this meeting were used to revise the niche and strategy.

2.4 Donor Review and Approval

The profile was developed in close collaboration with the CEPF Secretariat, which reviewed all drafts. A draft of the niche and strategy was circulated to stakeholders for review in advance of the January 2018 regional consultation workshop. The CEPF Working Group then reviewed the draft profile in July 2018. Comments were incorporated, and a revised draft was reviewed by the Working Group in June 2019. The finalized document was then submitted to the CEPF Donor Council for approval.

3 INITIAL PHASE OF CEPF INVESTMENT: OVERVIEW AND LESSONS LEARNED

3.1 CEPF Investment Strategy 2010 – 2016

The ecosystem profile that guided the initial phase of CEPF investment in the Caribbean Islands Biodiversity Hotspot was published in January 2010, after an extensive participatory process that engaged 200 experts from 160 organizations representing civil society, government, academia and the donor community working in the region.

The CEPF investment strategy for the initial phase comprised 12 investment priorities grouped under five strategic directions (Table 3.1). The first three strategic directions focused, respectively, on site-level interventions, corridor-level interventions and civil society capacity building. The fourth strategic direction was dedicated to the Regional Implementation Team (RIT). The fifth strategic direction was approved separately in March 2010 by the CEPF Donor Council to provide special emergency support to Haitian civil society to mitigate the effects of the devastating earthquake that occurred in early 2010.

Table 3.1 CEPF Caribbean Islands Investment Strategy 2010 – 2016

Strategic Directions	Investment Priorities
1. Improve protection and management of 45 priority key biodiversity areas	1.1 Prepare and implement management plans in the 17 highest-priority key biodiversity areas
	1.2 Strengthen the legal protection status in the remaining 28 key biodiversity areas
	1.3 Improve management of invasive species in the 45 priority key biodiversity areas
	1.4 Support the establishment or strengthening of sustainable financing mechanisms
2. Integrate biodiversity conservation into landscape and development planning and implementation in six conservation corridors	2.1 Mainstream biodiversity conservation and ecosystem service values into development policies, projects and plans, with a focus on addressing major threats such as unsustainable tourism development, mining, agriculture and climate change
	2.2 Strengthen public and private protected areas systems through improving or introducing innovative legal instruments for conservation
	2.3 Prepare and support participatory local and corridor-scale land-use plans to guide future development and conservation efforts
	2.4 Promote nature-based tourism and sustainable agriculture and fisheries to enhance connectivity and ecosystem resilience and promote sustainable livelihoods
3. Support Caribbean civil society to achieve biodiversity conservation by building local and regional institutional capacity and by fostering stakeholder collaboration	3.1 Support efforts to build and strengthen the institutional capacity of civil society organizations to undertake conservation initiatives and actions
	3.2 Enable local and regional networking, learning and best-practice sharing approaches to strengthen stakeholder involvement in biodiversity conservation
4. Provide strategic leadership and effective coordination of CEPF investment through a Regional Implementation Team	4.1 Build a broad constituency of civil society groups working across institutional and political boundaries toward achieving the shared conservation goals described in the ecosystem profile
5. Provide emergency support to Haitian civil society to mitigate the impacts of the 2010 earthquake	5.1 Support conservation of priority key biodiversity areas and ensure the integration of conservation priorities into reconstruction planning

Although regional in scope and ambition, CEPF investment in the Caribbean Islands Hotspot was limited to the following 11 countries during the initial phase: Antigua and Barbuda; The Bahamas; Barbados; Dominica; the Dominican Republic; Grenada; Haiti; Jamaica; Saint Lucia; Saint Kitts and Nevis; and St. Vincent and the Grenadines.

The CEPF investment started in the region in October 2010 with the recruitment of the RIT. The RIT launched the first call for proposals in January 2011. The spending authority for the Caribbean region was $6.9 million.

3.2 Overview of CEPF Investment 2010 – 2016

3.2.1 Coordinating CEPF Grant-making

The RIT for the Caribbean Islands was established to provide strategic leadership and effective coordination of CEPF investment in the hotspot. The RIT role for the Caribbean Islands was performed by CANARI, which is a regional technical non-profit organization that has been working in the islands of the Caribbean for more than 20 years. The RIT was managed from CANARI's office in Trinidad and Tobago, and team members included three local coordinators based in the countries of highest priority for CEPF's investment in the region: the Dominican Republic; Haiti; and Jamaica.

3.2.2 Calls for Proposals

Between January 2011 and March 2015, CEPF issued seven calls for proposals, receiving a total of 241 letters of inquiry: 149 for large grants and 92 for small grants. The details of these calls are presented in Table 3.2 below.

Table 3.2 Calls for Proposals 2010 - 2016

Release	Deadline	Specifications	Countries	Letters Received
1 Feb 2011	31 March 2011 (small grants) 15 April 2011 (large grants)	Large and small grants, all strategic directions	Haiti and Jamaica	37
1 April 2011	31 May 2011 (small grants) 10 June 2011 (large grants)	Large and small grants, all strategic directions	Dominican Republic	38
21 Sept 2011	17 Oct 2011 (small grants) 24 Oct 2011 (large grants)	Large and small grants, focus on regional projects	All eligible countries	40
15 May 2012	29 June 2012	Large and small projects only in Massif de la Hotte KBA	Haiti	11
2 July 2012	13 Aug 2012	Large and small grants, all strategic directions	All eligible countries	61
15 Aug 2013	30 Sept 2013	Large and small grants, strategic directions 1,2 and 3	All eligible countries	46
18 March 2015	22 April 2015	Large and small grants, planning and facilitation of final assessment	All eligible countries (to support final assessment)	8
Total number of letters of inquiry received				**241**

3.2.3 Portfolio Overview

CEPF supported 77 projects in eight of the 11 eligible countries, with the majority of funding ($6.4 million) awarded to large grants (Table 3.3). CEPF support benefitted projects in Antigua and Barbuda, The Bahamas, the Dominican Republic, Grenada, Haiti, Jamaica, Saint Lucia, and St. Vincent

and the Grenadines. There were no projects in Barbados, Dominica or Saint Kitts and Nevis. In Dominica and Saint Kitts and Nevis, no KBAs were prioritized for CEPF investment, while no applications for the one prioritized KBA in Barbados were ever received. In addition, the GEF Focal Point endorsement for Saint Kitts and Nevis was not received.

Table 3.3 Grants Awarded 2010 - 2016

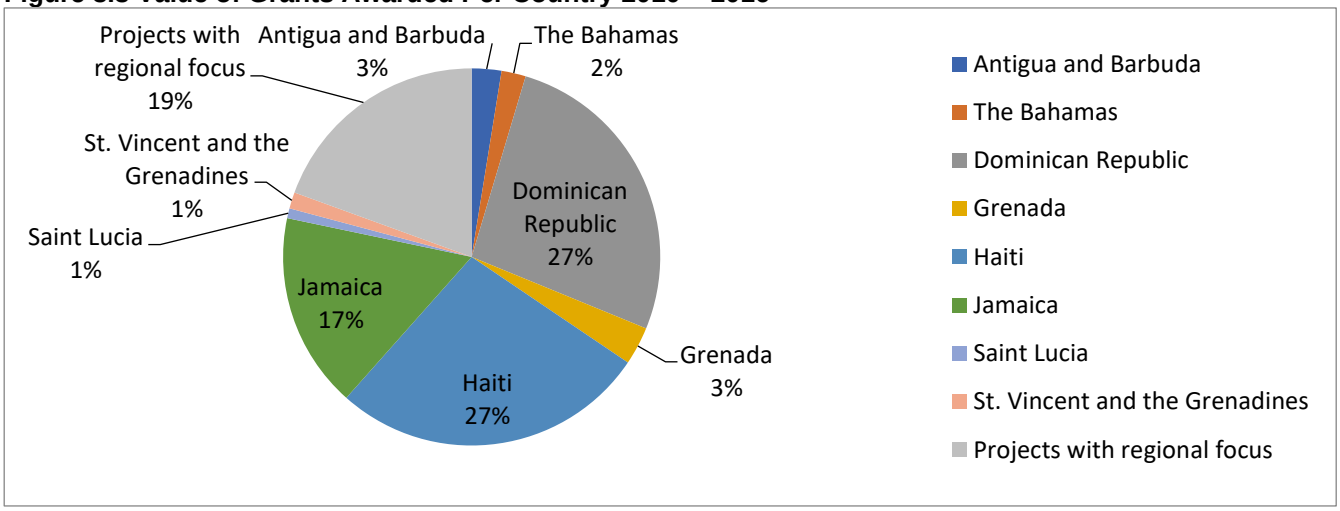
Strategic Direction	Awarded Grants			Total Grants Awarded
	Total Value (US$)	No. of Large Grants	No. of Small Grants	
1. Strengthen 45 KBAs	3,787,074.65	29	4	33
2. Strengthen corridor conservation	1,262,068.95	8	12	20
3. Institutional strengthening	619,836.77	8	13	21
4. Regional Implementation Team	1,021,428.00	1[1]	0	1
5. Haiti emergency support	181,981.44	1	1	2
Total	**6,872,389.81**	**47**	**30**	**77**

CEPF allocated the greatest proportion of funding to Strategic Direction 1 in support of site-based work in the priority KBAs, and this was well reflected in grantmaking results.

Investment by Country

A concerted effort was made to ensure there was a balanced allocation of funding to countries based on the investment strategy set out in the ecosystem profile. As Figure 3.3 shows, the majority of funding was committed to the Dominican Republic, Haiti and Jamaica, which were the countries of highest priority for CEPF's investment, consistent with the geographic distribution of the KBAs with the highest biological values in the hotspot. Also of note is the 19 percent of projects with a regional focus that benefitted several countries in the hotspot and supported regional collaboration.

Figure 3.3 Value of Grants Awarded Per Country 2010 – 2016



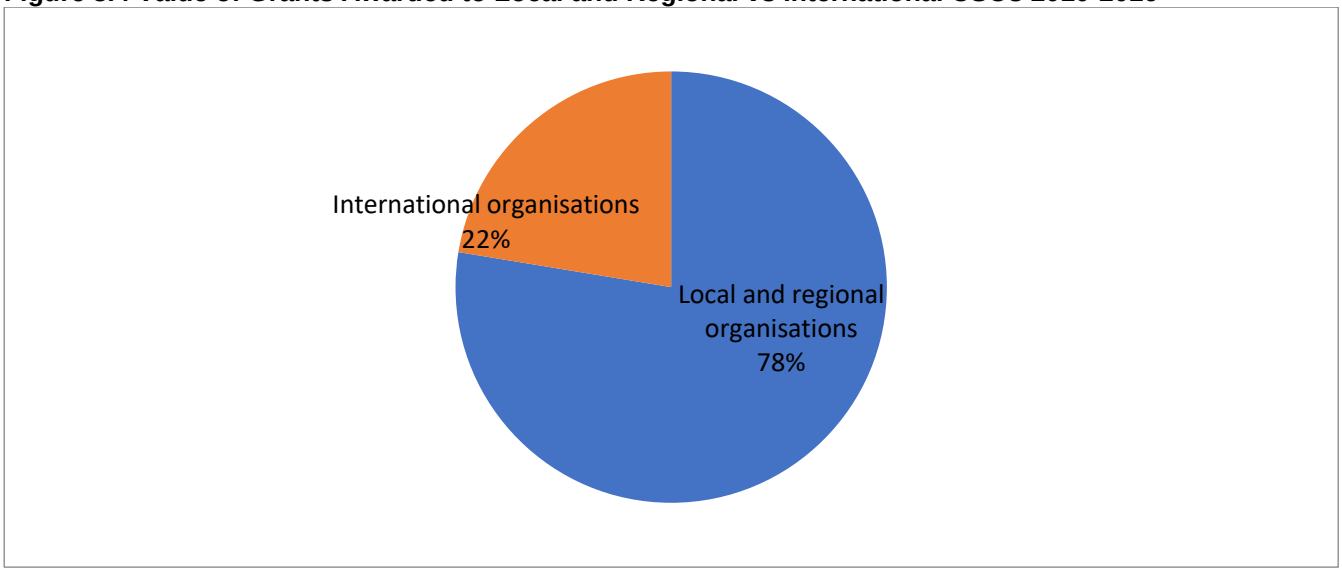
CEPF Support to Local vs International Organizations

During the initial phase of investment, CEPF awarded 55 grants and 18 sub-grants to local and regional Caribbean organizations, representing 78 percent of all funding awarded (Figure 3.4). The RIT

[1] Administratively, the RIT received two grants, one of which was the small grants mechanism. It is considered here as one grant, as the small grants mechanism was fully disbursed to small grantees.

deliberately promoted grant opportunities to local and regional civil society organizations (CSOs), in line with CEPF's specific goal of supporting and building the capacity of local civil society.

Figure 3.4 Value of Grants Awarded to Local and Regional vs International CSOs 2010-2016



3.3 Summary of Impacts

The initial phase of CEPF investment in the Caribbean hotspot resulted in key impacts on KBA conservation and civil society capacity building, as summarized in Table 3.4 and the following text. These impacts and results have been taken from the final report on the logframe of the initial phase of CEPF investment[2], policy briefs prepared by CANARI in its role as the RIT[3], the final RIT report to CEPF, and individual grantee reports.

Table 3.4 Progress towards the Objective-level Targets in the Portfolio Logframe for 2010 to 2016

Objective	Target	Progress
Engage civil society in the conservation of globally threatened biodiversity through targeted investments with maximum impact on the highest conservation and ecosystem services priorities.	NGOs and civil society actors from CEPF-eligible countries, with an emphasis on the six priority conservation corridors and 45 key biodiversity areas, effectively participate in conservation programs guided by the ecosystem profile.	68 civil society organizations (46 local and regional Caribbean CSOs and 22 international CSOs) directly engaged in and benefiting from CEPF support in six conservation corridors and 32 KBAs (14 highest priority KBAs and 18 other priority KBAs) in Antigua and Barbuda, The Bahamas, the Dominican Republic, Grenada, Haiti, Jamaica, Saint Lucia, and St. Vincent and the Grenadines.

[2] The Final Report on the Logframe for the Caribbean Islands Biodiversity Hotspot (2010 – 2016) is available for download from: https://www.cepf.net/sites/default/files/caribbean-islands-final-logframe-report-2016-english.pdf

[3] CANARI Policy Brief 22 "Effective support for Caribbean civil society for biodiversity conservation and rural development: Results and recommendations from the Critical Ecosystem Partnership Fund 2010 – 2016" is available for download from https://canari.org/effective-support-for-caribbean-civil-society-for-biodiversity-conservation-and-rural-development-results-and-recommendations-from-the-critical-ecosystem-partnership-fund-2010-2016/
CANARI Policy Brief 23 "Effective grant-making to Caribbean civil society: Lessons and innovation from CANARI's experience as an intermediary organization" is available for download from https://canari.org/civil-society-and-governance/effective-grant-making-to-caribbean-civil-society-lessons-and-innovation-from-canaris-experience-as-an-intermediary-organisation/

Objective	Target	Progress
	Development plans, projects and policies which influence the six conservation corridors and 45 key biodiversity areas mainstream biodiversity and ecosystem services, with a focus on tourism, mining and agriculture.	7 development plans, projects and policies with integrated ecosystem services and biodiversity, focusing on water resources management, reforestation, forest carbon, and regulation of ecosystem functions in St. Vincent and the Grenadines, Haiti, the Dominican Republic and Jamaica.
	17 Key Biodiversity Area covering 911,000 ha have strengthened protection and management as guided by sustainable management plans.	12 of the 17 highest priority KBAs covering a total of 468,268 ha with strengthened protection and management, as guided by sustainable management plans.
	At least 20 percent of underprotected priority key biodiversity areas (at least six) brought under new and/or strengthened protection status.	17% (or 8 out of 48) under-protected KBAs in The Bahamas, the Dominican Republic and Haiti, covering 111,496 ha, under improved legal protection,
	Strategic areas of the production landscape of six conservation corridors under improved management for biodiversity conservation and ecosystem services.	5 of the 6 conservation corridors (the Massif du Nord corridor in Haiti; Portland Bight Protected Area in Jamaica; Massif de la Selle–Jaragua–Bahoruco–Enriquillo binational corridor in Hispaniola; the Cordillera Central corridor in the Dominican Republic; and the Central Mountain Range in St. Vincent and the Grenadines) with improved management of the production landscapes through forest carbon, reforestation, integrated management plans, agroforestry, beekeeping and sustainable tourism, in the Dominican Republic, Haiti, Jamaica, Grenada, and St. Vincent and the Grenadines.
	The Caribbean ecosystem profile influences and complements other donor's investment strategies.	Investment strategies of 11 other donors influenced and complemented by the Caribbean Islands ecosystem profile .

3.3.1 Impact on Conservation of KBAs

Improved management and protection of KBAs

The first CEPF investment strategy in the Caribbean Islands focused on site-level interventions. CEPF grantees improved management and protection of 25 KBAs, covering 593,967 hectares in eight countries, through the development, approval and implementation of participatory protected area management plans that engaged communities and resource users. Plans and implementation actions addressed community livelihoods, ecotourism, infrastructure and capacity building, resulting in 12 out of the 17 highest priority KBAs, covering a total of 468,268 hectares, having strengthened protection and management as guided by sustainable management plans.

CEPF grantees strengthened the organizational and technical conservation capacities of community groups and park rangers. Stakeholder committees were established to ensure the active and effective participation of resource users and communities in decision-making, in collaboration with protected area agencies.

Local communities' awareness of the importance of biodiversity conservation was raised and their capacity was built to meaningfully engage in conservation actions and national dialogues. For example, in Jamaica, consortia of local, national and international stakeholders, which included a number of CEPF

grantees and sub-grantees,[4] worked successfully with community groups to counter a proposed transshipment port development project in the Portland Bight Protected Area and potential mining concessions in the Cockpit Country. In both cases, community members were active, visible and articulate spokespersons for local issues and concerns.

Creation and Expansion of Protected Areas

The initial phase of CEPF investment in the Caribbean Islands supported the creation of eight new protected areas covering 111,496 hectares in The Bahamas, the Dominican Republic and Haiti. These included terrestrial and marine national parks, municipal reserves and a private protected area. The Dominican Republic's first private protected area was declared, and the procedures required to implement the existing legal framework for the declaration of private protected areas were developed and disseminated. Haiti's first municipal protected area was declared as part of an effort to protect Ricord's iguana (*Cyclura ricordii* - CR).

Climate Change Adaptation Integrated into Protected Area Management

Climate change adaptation was integrated into protected area planning and implementation actions for the first time in Jamaica and the Dominican Republic during the initial phase of investment. A climate change risk assessment was integrated into the Portland Bight and Hellshire Hills sub-area management plans in Jamaica. Similarly, a climate change adaptation action plan and strategy was included in the management plan for the Dominican Republic's Parque Nacional La Humeadora. CSOs in the Dominican Republic also developed a capacity-building action plan to access climate finance in order to conserve critical ecosystems in the context of climate change.

Innovative Financing Mechanisms

Innovative financing mechanisms for biodiversity conservation were developed, including the sale of the Caribbean's first forest carbon offsets in a payment for ecosystem services (PES) scheme, which allows smallholders and cocoa farmers in the Dominican Republic to improve production while reforesting their plots with native species. An economic valuation of water resources to support a participatory PES system involving Santo Domingo's water authority was also completed, laying the foundation for the establishment of a water fund for the city of Santo Domingo. The foundation was also laid for a PES scheme for a reforested area covering 20 hectares in the Fond Melon River Basin in the Massif de la Selle mountain range.

Improved Management of Invasive Alien Species (IAS)

CEPF helped to build the capacity of the Environmental Awareness Group in Antigua and Barbuda and the Saint Lucia National Trust to effectively eradicate, manage and control IAS on their islands. Support to the Bahamas National Trust and Grupo Jaragua in the Dominican Republic enabled the preparation of IAS plans. The aforementioned national CSOs collaborated with international CSOs, including Fauna & Flora International (FFI) and Island Conservation, to develop operational and biosecurity plans and successfully implement eradication schemes on offshore islands. Supporting local leadership in IAS control helped to ensure long-term sustainability of efforts, cost-effectiveness and local community buy-in.

[4] Caribbean Coastal Area Management Foundation, Jamaica Environment Trust, Caribbean Wildlife Alliance, Conservation Strategy Fund, International Iguana Foundation, Birds Caribbean, World Resources Institute and the Windsor Research Centre.

Sustainable Livelihoods

Sustainable livelihoods were strengthened in communities living in and around KBAs in Antigua and Barbuda, the Dominican Republic, Grenada, Haiti, Jamaica, and St. Vincent and the Grenadines, through developing and promoting crop diversity, forest carbon credits, fruit and vegetable processing, ecotourism and beekeeping. Offering viable economic alternatives is key to reducing human pressure on critical ecosystems especially in SIDS, where the socio-economic needs of families who depend on natural resources for their survival must be taken into account.

Mainstreamed Biodiversity and Ecosystem Services

CEPF supported the mainstreaming of biodiversity and ecosystem services into seven development plans, projects and policies focusing on water resources management, reforestation and forest carbon in St. Vincent and the Grenadines, Haiti, the Dominican Republic and Jamaica. For example, an integrated watershed management plan for the Cumberland Forest Reserve on St. Vincent was developed, factoring in climate change impacts and disaster mitigation on key watershed assets, including biodiversity.

3.3.2 Impact on Civil Society

During its initial investment, CEPF supported 68 CSOs (46 local and regional Caribbean and 22 international) to carry out work in six conservation corridors and 32 KBAs (14 highest priority KBAs and 18 other priority KBAs) in Antigua and Barbuda, The Bahamas, the Dominican Republic, Grenada, Haiti, Jamaica, Saint Lucia, and St. Vincent and the Grenadines. All grants led by an international organization included significant components to build the capacity of local partner organizations.

Strengthened Capacity

CEPF strengthened the capacity of 58 local and regional Caribbean CSOs through the development of strategic plans, fundraising plans and financial manuals, communication strategies, upgraded websites and financial systems. Capacity was built in a range of areas, including project design and proposal development, monitoring and evaluation, effective environmental communications and engagement of the private sector. Technical skills were built in sustainable tourism, field data collection and monitoring, and invasive species eradication and management.

Regional Networking, Alliance Building and Multi-sectoral Partnerships

With support from CEPF during the initial investment phase, grantees built alliances, supported regional networking and consolidated multi-sectoral partnerships for biodiversity that crossed political jurisdictions and language barriers. For example, conservationists in Hispaniola collaborated on developing bi-national actions to integrate amphibian conservation into management planning. A new regional network of nine environmental CSOs, Nature Caribé, was created. CSOs in the Dominican Republic fostered strategic alliances with local cement and mining private sector companies for conservation actions in Sierra de Bahoruco. A multi-stakeholder conservation alliance comprising local stakeholders and the Environment Ministry was created for Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte (Bahoruco Oriental). In Jamaica, local, national and international stakeholders came together to mount a campaign to save the Goat Islands within the Portland Bight Protected Area, which were threatened by a proposed transshipment port. The decision to site a port in the Portland Bight Protected Area was revoked in 2016 and the Government of Jamaica declared its intention to establish a wildlife sanctuary for endemic and endangered species, including the Critically Endangered (CR) endemic Jamaican iguana (*Cyclura collei*) on the Goat Islands.

3.4 Lessons Learned from CEPF Investment 2010 – 2016

Working in the Caribbean Islands Biodiversity Hotspot is complicated and costly due to the archipelagic geography and differences in language, culture and political systems, just to mention a few challenges. Lessons learned were monitored throughout the implementation of the initial phase of CEPF investment.

3.4.1 Mid-term and Final Assessments

Key evaluation exercises conducted during the initial phase included the mid-term and final assessments, which focused on both accountability and learning. These assessments were facilitated in a highly participatory fashion by the CEPF Secretariat and the RIT, to solicit input into the program from grantees and other stakeholders. The mid-term assessment was carried out between May and September 2013, and the findings informed the second half of the investment phase. The final assessment was held in November 2015, with stakeholder consultations in the Dominican Republic, Haiti and Jamaica. Key lessons learned from these two evaluations that are relevant to future investment in the Caribbean Islands Hotspot can be summarized as follows:

1. *Lesson: Building a grantee's organizational capacity in parallel with grant implementation encourages long-term sustainability of efforts and efficient use of funds*.

A crucial component of effective grant-making to CSOs is consistent and systematic on-the-ground support and capacity building using innovative, participatory mechanisms. For example, strengthening a grantee's financial management capacity as part of a large grant under CEPF allows for better management and use of grant funding and increases the grantee's ability to secure follow-on funding from other donors.

The RIT tried to facilitate greater networking among grantees, especially at the country level, in cases where organizations had complementary skill sets. There was a lot of room for grantees to work together in tangible ways to build each other's capacity, and this proved to be important given the limited time that the RIT had to work with grantees on a one-on-one basis. For instance, CEPF grantee, Instituto Dominicano de Desarrollo Integral, facilitated a training workshop on sustainable financing for 20 CSOs in the Dominican Republic, while fellow CEPF grantee, KIUNZI, built the communication and networking capacity of 10 local CSOs. Grantee-to-grantee support was a good way to build networks and leverage project results.

Small grants can, in particular, be used as a capacity building tool, especially for young organizations or those with weak capacity. The very process of having to design a project and submit a proposal that can be approved and used as the guiding project document requires a certain level of capacity.

2. *Lesson: It is important to support planning and capacity building efforts to enable effective conservation action*.

During the initial phase of investment, CEPF supported the development of key action plans and strategies, in particular for protected area management, incorporating climate resilience and sustainable rural livelihoods, which needed to be funded adequately to ensure successful implementation. CEPF was committed to funding implementation, even in part, of any planning efforts it supported. In addition, CEPF supported several grants that put in place structures and mechanisms to improve the protection and management of KBAs in several countries, including Haiti, Jamaica, and St. Vincent and the Grenadines. It is now important to continue to support these structures and mechanisms, to demonstrate proof of concept. Several grantees leveraged additional support for their conservation work based on the planning

initiatives supported by CEPF. One such example was BirdsCaribbean's Caribbean Birding Trail, for which CEPF was the first funder. CEPF also strongly encouraged and facilitated efforts to leverage additional support from other donors to bring about financial sustainability. For example, following CEPF support towards establishing El Zorzal Private Reserve in the Dominican Republic, Consorcio Ambiental Dominicano leveraged $992,088 in additional funding from local and international donors, including: the Eddy Foundation, Moreno Brothers and other private investors; the US Fish and Wildlife Service; Helados Bon (ice cream company); the Vermont Centre for Ecostudies; and the GEF.

3. *Lesson: Fostering strategic partnerships across civil society including with the public and private sector and other managers and users of natural resources enhances conservation impacts and ensures long-term conservation goals are met.*

Helping grantees make linkages between their efforts and those of other grantees and partners led to more strategic and deliberate actions within the grant portfolio. During the initial investment phase, CEPF facilitated peer exchanges at the national and regional levels to support knowledge sharing and provide a space for relationship building. Networking facilitated across language groupings was particularly valued.

CEPF's support gave a strong impetus to civil society to create strategic partnerships including with the public and private sectors. Three policies were formulated and adopted to strengthen public and private protected areas systems, including the procedural and legal frameworks for private protected areas in the Dominican Republic and municipal protected areas in the Dominican Republic and Haiti.

All CEPF grants were designed and implemented in consultation with local governments and national agencies to ensure they were consistent with country-level conservation priorities and were, to the extent possible, institutionalized into national and local policies, priorities and plans.

4. *Lesson: It is important to support civil society to innovate and test new approaches to conservation, especially in the face of a changing climate, which demands new responses to emerging challenges.*

Many CEPF grantees from the initial phase used innovative tools, methods and approaches in project implementation that offer a rich pool of good practice and lessons that could be shared among CEPF grantees in the Caribbean and with other partners, both within and outside the region. CEPF's willingness to support innovation reaped important results. For instance, Dominican Republic grantee, Consorcio Ambiental Dominicano, established the country's first private protected area and sale of forest carbon credits, while the Caribbean Coastal Area Management Foundation in Jamaica developed and tested an *ex-situ* germ bank and engaged local people in plant conservation through their love of gardening.

5. *Lesson: Coordination with other national and regional initiatives helps ensure a strategic and coordinated regional programmatic response to supporting civil society's work in biodiversity conservation, climate change and sustainable rural livelihoods*.

Even though travel within the Caribbean region is expensive, there is definitely value in bringing people together to share ideas, results and lessons learned from their work. Bringing CEPF grantees from Antigua and Barbuda, The Bahamas, Saint Lucia, and St. Vincent and the Grenadines to the Jamaica-based final assessment workshop gave them an important space for sharing and networking with other CSOs. Haiti, the Dominican Republic and Jamaica were no doubt the priority countries in the region for CEPF investment during the initial phase but it was important to recognize the regional element in the program and for efforts to be made to bring together countries and grantees as much as possible, and to highlight the regional-level results and impacts. In order to maximize impacts and learning at a truly

regional level, it will be important to extend the lessons learned and best practices and involve more countries, such as the overseas countries and territories.

3.4.2 Independent Evaluation of Lessons Learned (RIT)

During January-March 2018, an independent evaluation of lessons learned was conducted in relation to the Caribbean Islands RIT. The objective of the evaluation was to inform investment decisions for the next phase of CEPF investment in the hotspot, including by documenting challenges and opportunities encountered by the RIT, while implementing a grants program to engage and strengthen civil society in conserving globally important biodiversity in the social, political and institutional context of the hotspot. The evaluation was undertaken by a team of consultants at Kiunzi SRL, and involved a desk study, a questionnaire survey of grantees during the initial phase (which had 23 responses), and interviews with 39 stakeholders, including RIT and CEPF Secretariat staff, grantees, donors and government partners. The main findings of the independent evaluation are set out below. The full report is available on the CEPF website.[5]

The RIT coordinating the initial phase of CEPF investment in the Caribbean was overall relevant, and the objectives set at the beginning of the program were globally reached. However, part of the strategy aimed at guaranteeing the sustainability of the intervention and optimizing its impact was not implemented in a systematic and consistent manner. Communication, partnerships among grantees, establishing synergies between the public and private sectors, fund leverage and developing a regional dimension among the grantees were not prioritized during the initial phase of the program. To heighten the impact of the program, these aspects of running the program must be redressed to their full extent in the next phase. Therefore, these activities must be included in the RIT's planning, with clear procedures and responsibilities, and must be resourced.

CEPF provides a regional framework that needs to be enhanced in the case of the Caribbean. This region is fragmented in many aspects, and one of the main challenges for the next phase will be to build Caribbean awareness. Strong regional links must be established within the Caribbean civil society, with the donors, with the public and private sectors, with the academia and the media. These links must transcend borders, cultures and languages. How can this be done?

Relevance

Communication. Considering the characteristics of the region (different cultures, languages, and geographic and political fragmentation), an RIT that has its origins in Caribbean civil society, that is already acknowledged and trusted by the civil society working in the area of conservation, with a pre-established network of role players in the various sectors of society, is a strong asset.

The RIT made great efforts to offer an equal opportunity to every potential grantee in terms of languages. Every communication initiative must include this component. This has implications in terms of translation and, subsequently, budget.

Communication and visibility is fundamental at every level. We now live in a society of information, and the ability to capitalize its potential can have a significant impact on every other element of the program. Moreover, the ability of the grantees to communicate and give visibility to their activities is an important factor for sustainability.

[5] https://www.cepf.net/sites/default/files/evaluation_of_lessons_learned_caribbean_islands.pdf

It is important to better integrate the communication strategy with the rest of running the program. A communication coordinator position should be considered from the beginning of the project but the ability to involve every stakeholder as a potential producer of content could significantly enhance the impact of the communication strategy. To be effective, the communication strategy should be organic. Nowadays, every stakeholder with a cellphone connected to the internet potentially produces relevant information for the other stakeholders of the program. For a very short investment, every grantee could be able to communicate their lessons learned and experience without being involved in a complicated process. To do so, a small CEPF program communication toolbox could be provided to every grantee.

Implementing a multilingual communication platform (maybe an app) that facilitates communication among stakeholders as well as identifies potential partnerships might be an idea: it can be a very effective and efficient way to bring stakeholders together and to send relevant information to each of them[6].

Despite its inner qualities, the *Capacité* newsletter did not reach its objectives. The newsletter´s format should be reconsidered. Radical changes regarding the use and production of information by the public in general could be considered:

- Abundance of information.
- Use of new devices (the use of the smartphones being critical).
- Importance of relevant information directly available for the target audience.
- Improve availability of alternatives to written information: audio, video, and photographic information.

Also, how the various types of potential users customarily use information should be addressed:

- Community-based organization (CBO) members.
- Local and national NGOs.
- Regional NGOs.
- Regional Advisory Committee for the Caribbean (RACC) members.
- Donors.

Facilitating partnerships among stakeholders. Because it focuses on CSOs, CEPF provides a unique niche in terms of funding biodiversity conservation. This opportunity should be optimized to the fullest. It is also fundamental to foster synergies and collaborative work with the public and private sector, donors, academia, NGOs and CBOs. The initiatives that capitalize the opportunity provided by the diversity of inputs (know how, expertise, funding, community organizations contributions, etc.) are in general the most effective.

What could be done to facilitate grantee-to-grantee partnerships?

Concerning each call for proposals, once the grants are approved, the first step would be to establish a map of project complementarity at a regional level. This map should be shared with the stakeholders, along with any information that could help the grantees establish a first contact.

[6] If it really responds to grantees and other stakeholder's needs, this option can be effective in the way that it will significantly improve their ability to build partnerships, and its design and development will involve one single initial investment. If successful, the same platform could be used in the other regions of intervention. The evaluation team is unaware of any similar application. It would be a pilot project.

At a later stage, various procedures can be adopted at various levels:

- Face-to-face meetings between country coordinators and technical managers at the beginning of the project submission evaluation process to identify the potential links between the projects;
- Country coordinator side meetings and/or information sharing procedures.
- Include a specific budget for experience-sharing internships and regional travel in every grant. The country coordinators or mentors could play a key role in this process, stimulating, monitoring and, if needed, being present in these activities. Investigating the possibility of allocating this budget as a part of the subsidies is strongly recommended.
- Involve various types of stakeholders in the logistical aspects of these activities.

Fund leveraging. Different options are available to diversify, provide sustainability and amplify the impact of the program. As for the above-mentioned activities, leveraging funds should be considered an organic activity during the next phase of the program.

Here are some options that could be considered:

Complementarity with similar funds
The impact of grants may be amplified thanks to complementarity with other similar funds like the GEF Small Grants Program (SGP), which works globally in the same area at different levels. Although the SGP has a broader scope of intervention, biodiversity is one of its priorities.

El Zorzal Private Reserve in the Dominican Republic, which is one of the most successful projects run in the hotspot, also availed itself of support from the SGP and the GEF. It is worth mentioning that private funds were involved in this project also.

The relevance of establishing a geographic complementarity with the EU BEST program may also be worth investigating.

Strategically speaking, it is also important to investigate the chances of partnerships with climate change initiatives. Climate change being one of the main threats to biodiversity conservation overall in archipelagos, there is high potential for complementarity between these areas. Furthermore, climate change is nowadays considered a priority for governments all over the world, and most probably for a long time to come.

Transversal
To be effective, biodiversity projects must respond to population priorities. So, opportunities must be considered to involve programs and organizations that are not involved in biodiversity conservation or environment conservation but could be incorporated as a transversal activity. Overall, this could be relevant in areas of higher level of poverty, for example, in Haiti.

Private sector
Another way of achieving this goal could be to build private sector donor pools. There are various private sector organizations potentially interested in funding environmental and biodiversity conservation projects. Many CSOs do not want to work directly with these companies because of the sector they belong to (mining, fossil energy, etc.) or their reputation. The creation of private donor pools at a national level could be a strong element to ensure sustainable financing of the biodiversity conservation initiatives funded by CEPF.

Various grantees also mentioned their interest in having direct contacts with the CEPF donors. The country coordinators could play a key role here.

Capacity building. The RIT based its capacity building activities on one-on-one coaching during the initial phase of the program, and the grantees globally agreed on the fact that this activity had an important impact on many organizations´ capacities. The fact that CEPF also funded many capacity-building activities by means of the grant also helped in this sense. However, weaknesses have been identified in terms of sustainability, networking and funds leverage.

Capacity building activities must be based on a long-term holistic strategy determined once the grantees have been identified. Every grantee conducts its activities in a specific context and has particular strengths and weaknesses. For this reason, it is important to consider the simultaneous use of different methodologies adapted to the grantees on a long-term basis. In most of the cases, a simple workshop is not enough and must be part of a set of activities: workshops; country coordinator coaching; peer-to-peer exchange activities; monitoring; etc.

The strategy should take into consideration the national-level needs in this matter. The country coordinators should play a key role in this context, identifying needs and potential organizations that could provide training activities. This capacity building map should also be set up on a regional level, identifying the weaknesses and capacities, as well as the project similarities of the various grantees. Subsequently, every grantee, and maybe even stakeholder, must have access to this information and be in a position to share and exchange it with every stakeholder of interest.

Coordination of the entire grant process. The RIT's previous experience dealing with grants management is a strong asset. For the next phase, the RIT and the CEPF must ensure to be exactly on the same page regarding the strategy, especially before the first call for proposals.

Regional Advisory Committee for the Caribbean (RACC)
The members of the committee regard the RACC inception workshop as very positive. Since the areas of intervention and strategic directions may have significantly changed, another inception workshop should be considered for the next phase before the first call for proposals. This activity could be considered very expensive. Nevertheless, the RACC played a key role in the implementation of the program that went further than its original advisory role. A $10,000 investment in the inception of the program would correspond to an investment of less than $10 per month per RACC member.

Also, communication between the RACC members, the RIT staff and the CEPF Secretariat during the project review process should be improved. Some of them expressed the need for more transparency concerning the decisions made and, if needed, to exchange points of view when there is difficulty in making a decision.

Project supervision and reports. The RIT and the CEPF Secretariat should make sure they have defined the reporting responsibilities and procedures in detail at the beginning of the program, to avoid any confusion during the grantees' reporting process. The grantees must know who to refer to in every type of circumstance. This was considered one of the most outstanding difficulties encountered, not only by the grantees but also by the RIT and the CEPF Secretariat.

Efficiency

Because of its intrinsic characteristics, intervention in the Caribbean Hotspot has an important investment to impact ratio.

Having a country coordinator in the three main islands of the program proved to be very effective in several ways. However, the whole RIT structure was under-resourced during the initial phase of the program and the budget was unbalanced, concentrating 85 percent of the amount on salaries and professional services. A solution must be found to give them time to carry out their work in proper conditions.

Externalizing some expenses by including additional funds in grantee budgets could be considered, for example increasing grantees' travel budget to attend workshops and other types of networking and capacity building activities.

Effectiveness

Structure. The intervention structure adopted by the RIT staff, composed of two main positions (manager and technical officer) assisted by the administrative staff, is on the whole relevant. However, some changes may be considered for the next phase of the program.

The RIT manager should be able to dedicate at least 90 percent of his or her time to the program, in order to respond to the array of duties specified in the RIT terms of reference, as well as the unforeseen ones.

In the three major islands of intervention, the country coordinators need significantly more time to dedicate to their tasks.

It should be adapted to the reality of the countries, and the activities that were accounted for systematically during the initial phase of the program, in terms of communication, networking, funds leverage, synergies and partnerships, should now be considered. Furthermore, because of the country's specificities, more time must be dedicated to field visits in Haiti. The country coordinator for Jamaica could also oversee the eastern Caribbean, even though it would mainly involve working remotely, considering the travel difficulties in this area.

In order to objectively define the time that must be dedicated to the program, different aspects must be taken into account:

- National context: for example, field work in Haiti is very time consuming and relations with the government sector are not easy.
- Portfolio size: more projects to attend means more time for coaching.
- Grantees' institutional capacity: CBOs need more attention than institutionalized NGOs.

Capacities. The know-how and expertise required to implement the CEPF program in the Caribbean are not easy to find. The main required capacities include but are not limited to: knowledge of the region and its civil society; networking; capacity building; proficiency in local languages as well as knowledge and empathy for local cultures; holistic understanding of environmental challenges at the global, regional, national and local level; and expertise in biodiversity conservation.

During the initial phase of implementation, the RIT's main weakness in terms of capacity was proficiency in biodiversity conservation. However, this area improved during the investment by inputs from the

CEPF Secretariat and the RACC. This weakness was not considered critical by the members of the RACC consulted on this matter.

For the next phase, if a future RIT lacks biodiversity skills, then options will have to be considered to figure out how to include that skill on the RIT team. A budget aimed at responding to specific needs in terms of capacities could also be considered.

4 BIOLOGICAL IMPORTANCE OF THE CARIBBEAN ISLANDS BIODIVERSITY HOTSPOT

4.1 Introduction

Biodiversity hotspots are terrestrial regions that have at least 1,500 vascular plant species confined to them and that have lost at least 70 percent of their original natural habitat (Mittermeier *et al.* 2004). The Caribbean Islands Biodiversity Hotspot is one of 36 areas in the world that meet these criteria. It is one of the world's greatest centers of endemic biodiversity, resulting from the region's geography and climate: an archipelago of habitat-rich tropical and semi-tropical islands tenuously connected to surrounding continents. The Caribbean Islands Hotspot consists mainly of three large groups of islands between North and South America: The Bahamas; the Greater Antilles; and the Lesser Antilles. The hotspot has an extremely complex geological history. Dispersal processes from North, Central and South America, Africa and Europe, climate events, and *in situ* radiations within the islands, which are not yet fully understood, have resulted in outstanding plant diversity (WWF and IUCN 1997; Caujapé-Castells 2011; Nieto-Blázquez *et al.* 2017). There are 11,000 plant species, of which almost 8,000 species are endemic (Acevedo-Rodríguez and Strong 2008). The biotas of these islands share an "oceanic" character marked by a relatively low representation of higher taxa but there is extraordinary diversity within those higher phyletic groups that are present. Vertebrate diversity and endemism in the hotspot are also noteworthy (Mittermeier *et al.* 2004). As a result of the region's high proportion of endemic plants and animals, the Caribbean Islands Hotspot is considered among the five globally most important hotspots (Myers *et al.* 2000; Mittermeier *et al.* 2004; Smith 2004).

This chapter describes the importance of the Caribbean Islands Hotspot from a geographical, geological, climatological, biogeographical, biological and ecological perspective. It also outlines the importance of the hotspot in terms of the ecosystem services it provides to human population.

4.2 Geography and Climate

The Caribbean Islands Hotspot is situated on the Caribbean Plate and comprises more than 7,000 islands, islets, reefs and cays with a land area of 230,000 km^2 scattered across 4 million km^2 of sea. Island arcs delineate the eastern and northern edges of the Caribbean Sea: a semi-enclosed basin of the western Atlantic Ocean, with an area of about 2.75 million km^2 between Florida in the north and Venezuela in the south. The islands form a barrier between the Caribbean Sea and the Atlantic Ocean and can be divided into three main groupings:

- The Greater Antilles (Cuba, Hispaniola, Jamaica, Puerto Rico and the Virgin Islands) make up about 90 percent of the hotspot's land area. They are located on a partially elevated platform that supports a mature volcanic range and form the northern boundary of the Caribbean Sea.
- The Lesser Antilles are of more recent origin. They consist of an outer chain of low coral and limestone islands and an inner chain of steep volcanic islands on the eastern edge of the Caribbean Sea. The Leeward and Windward Islands extend from Anguilla in the north to Grenada in the south. Aruba, Bonaire and Curaçao fringe the southern edge of the Caribbean Sea.
- The Bahama Bank assemblage (including the Turks and Caicos Islands) rises from a submarine rock plateau south-east of Florida. Geographically, these islands are situated in the Atlantic Ocean north of Cuba, not in the Caribbean Sea.

Some islands in the hotspot have relatively flat terrain of non-volcanic origin. These islands include Aruba (possessing only minor volcanic features), Barbados, Bonaire, the Cayman Islands and Antigua. Others, like Cuba, Dominica, Grenada, Guadeloupe, Hispaniola, Jamaica, Montserrat, Puerto Rico, Saint Lucia and St. Vincent, have rugged, towering mountain ranges. The highest mountain ranges rise to more than 3,000 m above sea level (in the Dominican Republic), while low-lying islands such as Anguilla, The Bahamas and the Turks and Caicos reach little more than 50–60 m above sea level.

Climate in the Caribbean is regulated by the North and Southeast trade winds coming together in the Inter Tropical Convergence Zone and two main currents from the western Atlantic (North and South Equatorial currents) converging to form the Caribbean Current: a warm current that transports significant amounts of water northwestward through the Caribbean Sea and into the Gulf of Mexico, via the Yucatan Current (Miloslavich *et al.* 2010, Gyory *et al.* 2018). The Caribbean climate is tropical humid but locally both climate and rainfall vary with elevation, island size and ocean currents (for example, cool up-wellings keep Aruba, Bonaire and Curaçao semi-arid). The climate is moderated, to some extent, by the prevailing warm, moist trade winds that blow consistently from the northeast, creating tropical wet forest/semi-desert divisions on mountainous islands. At sea level, there is little variation in temperature, regardless of the time of day or season, with the range being 24 to 32ºC. Rainfall distribution is determined by the size, topography and position of the islands in relation to the trade winds. Flat islands receive slightly less rainfall, albeit falling more predictably. The heaviest rainfall periods are in the middle of May and in September (albeit with temporal variation across the hotspot), with the "rainy season" coinciding with the summer hurricane season. Hurricanes develop over the ocean during the mid- to later months of the year (June to November) when sea surface temperatures are high (over 27ºC) and air pressure falls below 950 millibars. Caribbean winters are warm but drier, although occasional northwesterly winds bring cooler conditions to the northern islands in the winter. Caribbean waters are mostly clear and warm (22–29°C) and the tidal range is very low (<0.4 m) (Miloslavich *et al.* 2010).

4.3 Habitats and Ecosystems

Geography, climate and the large geographic expanse of the Caribbean Islands Hotspot have resulted in a diverse range of habitats and ecosystems, which in turn support high levels of species richness. Fourteen Holdridge life zones and 16 World Wildlife Fund (WWF) ecoregions have been defined in the hotspot. There are four major terrestrial forest types, the distribution and biodiversity characteristics of which are described below:

Tropical / Subtropical Moist Broadleaf Forests occur mainly in lowland areas influenced by northeasterly or northwesterly winds and on windward mountain slopes, such as the northern part of eastern Cuba, northern Jamaica, eastern Hispaniola, northern Puerto Rico and small patches in the Lesser Antilles.

Tropical / Subtropical Dry Broadleaf Forests are found in The Bahamas, the Cayman Islands, Cuba, Hispaniola, Jamaica, the Lesser Antilles and Puerto Rico. The dry forest life zone tends to be favored for human habitation, largely because of relatively productive soils and reasonably comfortable climate. For this reason, few dry forests remain undisturbed.

Tropical / Subtropical Coniferous Forests (both lowlands and montane) are found in The Bahamas, the Turks and Caicos, Cuba and Hispaniola, where they are often threatened by timber extraction and frequent man-made fires, which change their age structure and density.

Shrublands and Xeric Scrub occur in areas of rainshadow created by mountains, as well as in the more arid climate of the southern Caribbean (for example, Aruba, Bonaire and Curaçao). Xeric shrublands and cactus scrub are found where suitable conditions occur throughout the Lesser Antilles, and on Cuba and Hispaniola.

In the marine realm, the Caribbean Islands' shallow marine environment is part of the large marine ecosystem of the Caribbean Sea, with more than 12,000 marine species reported and low endemism rates compared to terrestrial ecosystems, due to the high degree of connectivity resulting from currents' influence and species migration (Miloslavich *et al.* 2010).

The Caribbean coastal zone contains many productive and biologically complex ecosystems, including beaches, coral reefs, seagrass beds, mangroves, coastal lagoons and mud bottom communities (UNEP RCU 2001). The health of these ecosystems has declined over the years, due mainly to habitat conversion, overexploitation, and pollution from suspended solids and chemical compounds (Polunin and Williams 1999, AIMS 2002, Lang 2003).

Beaches are among the most important coastal ecosystems in the Caribbean. They provide important habitats for several species, including nesting sites for large marine turtles, and they are economically very important for tourism in the region. Beaches are dynamic environments, constantly changing due to natural processes, including storms, hurricanes, tidal changes and sea level rise.

The majority of corals and coral reef-associated species in the Caribbean Sea are endemic, making the region biogeographically distinct (AIMS 2002; Spalding, Green, and Ravilious 2001). Beside the important ecosystem services they provide, coral reefs are of primary economic importance for the Caribbean, in particular for tourism and fisheries (Heileman 2005).

Seagrass meadows usually occur in areas protected by coral reefs and predominately comprise two species: turtle grass (*Thalassia testudinum*); and manatee grass (*Syringodium filiforme*). These productive habitats are grazing grounds for green turtle (*Chelonia mydas*), American manatee (*Trichechus manatus*) and many other vertebrates and invertebrates; they also contribute to water clarity.

Coastal wetlands, including estuaries, coastal lagoons and other inshore marine waters, are very fertile and productive ecosystems. Mangroves and littoral forests are considered the most biologically diverse marine habitats after coral reefs. Mangroves, like seagrass meadows, serve as nursery grounds for the juveniles of many commercially important fish species, while also providing habitat for a variety of small fishes, crabs and birds. Mangroves play an important role in coastal protection from climatic events in an area like the Caribbean that is affected by hurricanes every year.

The hotspot's soft bottom habitats are species rich. Soft bottom habitats include environments where the seabed consists of fine grain sediments, mud and sand. Intertidal or shallow, soft-bottom habitats include mudflats and seagrass meadows, which are economically and ecologically important. They are inhabited by burrowing animals, such as worms, snails, clams and some anemones, shrimps and crabs, sand dollars, brittle stars and sea cucumbers. Several species of fish feed in the soft mud bottom habitats (Halpern *et al.* 2008).

4.4 Species Diversity and Endemicity

The Caribbean Islands Hotspot supports a wealth of biodiversity within its diverse ecosystems, with a high proportion of endemicity, making the region biologically unique. It includes about 11,000 plant species, of which 72 percent are endemics (Acevedo-Rodriguez and Strong 2007). For vertebrates, high proportions of endemic species characterize the herpetofauna (96 percent of 200 amphibian species and 82 percent of 602 reptile species), which is likely due to their low dispersal rates, in contrast to the more mobile birds (26 percent of 565 species) and mammals (49 percent of 104 species, most of which are bats) (BirdLife International 2017; IUCN 2017a). Species endemic to the hotspot represent 2.5 percent of the world's 310,442 described plant species and 1.4 percent of the world's 68,574 described vertebrate species (IUCN 2017a).

Data for marine species are still incomplete. The approximately 12,000 marine species recorded so far in the Caribbean are a clear underestimate for this diverse tropical region. Sampling efforts, to date, have been strongly biased toward certain habitats in coastal and shallow waters, particularly coral reefs; there is very little information available about benthic organisms below 500 m (Miloslavich *et al.* 2010).

4.4.1 Mammals

Historically, the Caribbean Islands Hotspot supported 127 terrestrial mammal species, of which 23 are now considered extinct. Of the 104 extant species, 51 are endemic to the hotspot. Solenodontidae and Capromyidae are two Greater Antilles endemic rodent families. The family Solenodontidae includes two surviving species, both of which are Endangered (EN): Cuban solenodon (*Atopogale cubana*); and Hispaniolan solenodon (*Solenodon paradoxus*). Cuban solenodon occurs in two national parks: Alejandro de Humboldt; and Sierra del Cristal. In Haiti, Hispaniolan solenodon is known to occur only in the Massif de la Hotte mountain range but its distribution is more widespread in the Dominican Republic. The main threats are habitat loss due to increasing human activity and deforestation, and the introduction of exotic predators, such as dogs, cats and mongooses. The rodent family Capromyidae (the "hutias") comprises 16 species, 15 of which occur in the hotspot. Five of these species are extinct due to hunting, habitat loss and predation by invasive species. The 10 species that remain are country-specific species, with seven species occurring in Cuba, and single species occurring in The Bahamas (*Geocapromys ingrahami* - Vulnerable (VU)), Jamaica (*G. brownie* - VU) and Hispaniola (*Plagiodontia aedium* - EN). However, two of the Cuban endemics are considered "Possibly Extinct", namely dwarf hutia (*Mesocapromys nanus* - CR) and little earth hutia (*M. sanfelipensis* - CR), while large-eared hutia (*M. auritus* - EN) is restricted to a single site on the Cuban island of Cayo Fragoso.

Bats are very important components of ecosystems in the Caribbean Islands Hotspot and are represented by 59 species. However, bats are in urgent need of research to understand better their distribution, ecology and current threat status. These species are sparsely distributed and difficult to find due to the limited number of suitable caves or old-growth (native) trees appropriate for roosting. For example, Cuban greater funnel-eared bat (*Natalus primus* - CR) is only known to be found in Cueva La Barca in Guanahacabibes, while Jamaican greater funnel-eared bat (*Natalus jamaicensis* - CR) has only been recorded in St. Clair Cave in Point Hill KBA and Portland Cave in Portland Bight Protected Area KBA.

4.4.2 Birds

A total of 571 bird species have been recorded in the Caribbean Islands Hotspot (BirdLife International 2017), six of which are now extinct. Of the 565 extant species, 147 are endemic to the hotspot, with 105 of them confined to single islands. Although endemism is most notable at the species level, a remarkable 36 bird genera are endemic to the hotspot, as well as two endemic families: Dulidae (palmchat (*Dulus dominicus*)), with one species; and Todidae (the todies), with five species. The Caribbean is also home to the world's smallest bird, Cuba's bee hummingbird (*Mellisuga helenae*).

BirdLife International recognizes six Endemic Bird Areas (EBAs) and two secondary areas within the Caribbean Islands Hotspot (Stattersfield *et al.* 1998), a testament to the diversity and island-specific endemism in this region. Birds represent some of the most important symbols for conservation in the Caribbean. Parrots, including St. Vincent amazon (*Amazona guildingii* - VU), Saint Lucia amazon (*A. versicolor* - VU) and Dominica's imperial amazon (*A. imperialis* - EN), have been successfully used as flagship species for conservation and raising environmental awareness in their respective countries.

4.4.3 Reptiles

With more than 600 native species, the Caribbean Islands are very rich in reptiles, the vast majority of which (around 82 percent) are endemic to the region. Since the last CEPF ecosystem profile was published in 2010, at least 39 new species have been described, including several skinks and anoles and one boa (Hedges and Conn 2012, Kölher and Hedges 2016, Reynolds *et al.* 2016, Hedges 2018). Many of the hotspot's species are endemic to a single island and may be extinct or close to extinction. These new species have not yet been formally assessed under the IUCN global Red List criteria, and other taxa are still in the process of being formally accepted as new valid species (Morton 2009).

Two major evolutionary radiations dominate the lizards: the anoles (genus *Anolis*, 166 species) and the dwarf geckos (genus *Sphaerodactylus*, 85 species). Notable reptile taxa also include 11 species of the striking rock iguanas (*Cyclura* spp.), 10 of which are globally threatened, and the poorly known and elusive galliwasps (27 species in two genera, *Celestus* and *Diploglossus*), some of which are feared extinct. Two of the smallest lizards in the world are found in the Caribbean: *Sphaerodactylus ariasae* from the Dominican Republic; and *S. parthenopion* (EN) from the US Virgin Islands.

Snakes comprise 148 native species in nine families, and include major radiations, such as the genus *Tropidophis* (26 species), a group of dwarf boas, and the genus *Typhlops* (41 species), the fossorial blindsnakes. The world's smallest snake, Barbados threadsnake (*Tetracheilostoma carlae* - CR), is known only to be found in a very small area in Barbados (Hedges 2008).

Four sea turtle species nest in the Caribbean: leatherback (*Dermochelys coriacea*); hawksbill (*Eretmochelys imbricata*); green (*Chelonia mydas*); and loggerhead (*Caretta caretta*). All of them are globally threatened. Some authors have estimated the historical populations of these species in the Caribbean to have numbered in the millions (Jackson 1997). So abundant were they that mariners' reports from the 17th and 18th centuries document flotillas of turtles so dense and so vast that net fishing was impossible, and even the movement of ships was impeded (Harold and Eckert 2005, WIDECAST 2018). Today, sea turtle populations are severely reduced from these historical levels, and some of the largest breeding populations have vanished (Harold and Eckert 2005).

4.4.4 Amphibians

All 200 native amphibian species in the Caribbean are endemic, many to single islands (IUCN 2017b). This number is likely to increase as more research is undertaken in more remote areas of the region, particularly in the Greater Antilles. The amphibians belong to six frog families (Aromobatidae, Bufonidae, Craugastoridae, Eleutherodactylidae, Hylidae and Leptodactylidae) but the taxon is dominated by the 152 species of the genus *Eleutherodactylus*. These forest frogs are distinctive due to their direct development (they bypass the tadpole stage), egg laying on the ground and parental egg guarding. *Eleutherodactylus iberia* from Cuba is one of the smallest tetrapods in the world, at less than 1 cm in length. At the other end of the scale, mountain chicken (*Leptodactylus fallax*) from Montserrat and Dominica is, at 16 cm, one of the largest of all frogs. This species is one of the many amphibian species to fall victim to an infectious disease caused by the chytrid fungus *Batrachochytrium dendrobatidis* and, compounded by the historical impacts of habitat loss, invasive species and exploitation, is rapidly declining towards extinction in the wild on both islands in one of the fastest ever range-wide species declines recorded (Hudson *et al.* 2016). Recent efforts have brought mountain chicken back from the brink of extinction but its situation remains tenuous. The disease has also been implicated in the rapid declines and possible extinctions of a number of *Eleutherodactylus* species in Puerto Rico, the Dominican Republic, Haiti and Cuba. Alongside disease, amphibians in the region face threats from invasive species, habitat loss and fragmentation.

4.4.5 Freshwater and Nearshore Marine Fish

A total of 1,538 bony fish species in the Caribbean Islands Hotpot have had their global threat status evaluated by IUCN; this represents around 4 percent of all bony fish species. The species list for the hotspot is still incomplete and new species are being discovered in mesophotic and deep reefs (Baldwin and Robertson 2014, Baldwin and Robertson 2015, Baldwin *et al.* 2016a,b, Tornabene *et al.* 2016).

The Caribbean Islands Hotspot supports 167 species of freshwater fish, about 65 of which are endemic to one or a few islands, and many of these to just a single lake or springhead. As in other archipelagic hotspots, there are two distinct groups of freshwater fishes in the Caribbean: on smaller and younger islands, most fish species are widespread in marine waters but also enter freshwater to some degree, while on the larger and older islands of the Greater Antilles, there are several groups that occupy inland waters, including gars, killifishes, silversides and cichlids, such as Domingo mosquito fish (*Gambusia dominicensis* - EN), which is restricted to Enriquillo and Azuéi lakes (both KBAs).

Marine fish represent a complex group of organisms, which includes many important fishery species, such as American eel (*Anguilla rostrata* - EN) and several grouper species, including Nassau grouper (*Epinephelus striatus* - EN). The greater Caribbean biogeographic region (which includes areas outside the hotspot, such as Bermuda, the Gulf of Mexico and Trinidad and Tobago) contains the highest marine species richness in the Atlantic Ocean and is considered a global hotspot for tropical reef species (Roberts *et al.* 2002). A study of the conservation status of marine bony shorefishes in the Greater Caribbean found that 53 percent of the 1,360 species included in the study were endemic, which is the highest degree of endemism in the Atlantic Ocean (Linardich *et al.* 2017).

Offshore oceanic areas have the lowest species richness, due to the resource-poor environment and low opportunity for niche diversification. However, the majority of the endemics tend to be widely distributed, presumably due to the generally high level of marine connectivity in the region.

4.4.6 Sharks

There are 83 species of chondrichthyans (cartilaginous fish) found in the marine waters of the Caribbean Islands Hotspot. However, only 59 of these are found in nearshore waters (above 200 m depth). These species are from 27 families, comprising 16 families of shark (44 species) and 11 families of ray (15 species). Most of the species have large ranges and a number are found all around the world. However, there appears to be at least one endemic species, Florida torpedo (*Torpedo andersoni*), which is only known from two specimens: one from the western edge of the Grand Bahama Bank; and the other from a coral reef off Grand Cayman.

4.4.7 Reef-forming Corals

Coral reefs are among the most important marine coastal ecosystems in the hotspot and play a critical role in the economy of the region. The livelihoods of millions of people are dependent upon reefs for income and employment. In the Caribbean Sea, corals represent a biogeographically distinct area within which most corals and coral reef-associated species are endemic, making the entire region particularly important in terms of global biodiversity (Spalding *et al.* 2001, AIMS 2002).

Caribbean coral reefs include more than 65 species of reef-building corals; many of these are widely distributed but also endemic to the region due to the long isolation of the West Atlantic from the Pacific Ocean. Among the more widespread genera are *Acropora*, *Monastrea*, *Porites, Agaricia*, *Diploria*, *Colpophylia*, *Meandrina*, *Mycetophyllia*, *Dendrogyra* and *Millepora*. The area covered by coral reefs in the Caribbean has been estimated at 26,000 km^2, or about 10 percent of the global total (Keith *et al.* 2013).

4.4.8 Seed Plants

The botanical diversity of the Caribbean Islands Hotspot is extraordinary. While the land areas are relatively small, the islands support a native flora of 1,520 genera and about 11,000 species of seed plants (Cycadopsida, Pinopsida, Magnoliopsida and Liliopsida; Maunder *et al.* 2008). Of these, 192 genera and 7,868 species (72 percent) are endemic (or nearly so) to the hotspot (Acevedo-Rodríguez and Strong 2008). Given the relatively small size of the land mass and the highly fragmented nature of surviving habitats, this represents an extraordinary packing of endemic lineages into a mosaic of increasingly fragmented refugia (Maunder *et al.* 2008). Importantly (in terms of vulnerability and conservation), 94 of the 182 endemic genera are monotypic; 105 genera are found on just a single island; and 80 percent of these single-island genera are monospecific: a condition that makes the genera vulnerable to extinction due to habitat destruction (Acevedo-Rodríguez and Strong 2008; Maunder *et al.* 2008). Endemic plant genera are concentrated in the Greater Antilles, especially Cuba and Hispaniola: the largest and most heterogeneous islands (Nieto-Blázquez *et al.* 2017). Island or island group species endemism is 53 percent in Cuba, 44 percent in Hispaniola, 34 percent in Jamaica, 15 percent in the Lesser Antilles and Puerto Rico, 14 percent in the Virgin Islands and 10 percent The Bahamas. In global terms, the Caribbean is comparable to the Madagascar and Indian Ocean Islands (260) and Cape Floristic Region (160) Hotspots for the number of endemic plant genera (Maunder *et al.* 2008) and has three times that of New Caledonia (Nieto-Blázquez *et al.* 2017).

4.5 Globally Threatened Species

The total land surface of the Caribbean Islands Hotspot is only 230,000 km^2. With just around 10 percent of the hotspot's original habitat remaining, most of the major habitat loss has already occurred. Nevertheless, in the face of population growth (albeit slowing) and changing land-use patterns, what little habitat remains is at risk from both human activity and natural disasters. The hotspot's biodiversity is at serious risk of species extinctions, even due to the loss of relatively small patches of habitat. In percentage terms, amphibians and reptiles are among the most threatened of the taxonomic groups assessed, at 73 and 31 percent respectively (Table 4.1).

Table 4.1: Species Diversity, Endemicity and Global Threat Status in the Caribbean Islands Hotspot

Taxonomic Group	Species[1,2]	Hotspot Endemic Species[3]	Percentage Endemic	Globally Threatened Species	Percentage Threatened
Mammals	104	51	49.0	26	25.0
Birds	565	148	26.2	55	9.7
Reptiles	602	494	82.1	184	30.6
Amphibians	200	191	95.5	146	73.0
Bony fishes	1,538	65	4.2	42	2.7
Cartilaginous fishes	83	-	-	17	20.5
Reef-forming corals[4]	91	-	-	15	16.5
Seed plants[5]	10,948	7,868	71.9	507	4.6
Total	**14,134**	**8,817**	**62.4**	**992**	**7.0**

Sources: 1 = IUCN Red List for mammals, bony, cartilaginous fishes and reef-forming corals; BirdLife/IUCN for birds; Caribherp for reptiles and amphibians and Acevedo-Rodríguez and Strong (2007) for seed plants; 2 = IUCN and BirdLife figures refer to extant species only (EX and EW are not included); 3 = endemism figures not available for all taxa; 4 = figures include both corals (Anthozoa) and fire corals (Hydrozoa); 5 = seed plants comprise the four classes Cycadopsida (Cycads), Pinopsida (conifers), Liliopsida (monocotyledons) and Magnoliopsida (dicotyledons).

4.5.1 Mammals

Twenty-six of the 104 mammal species occurring in the hotspot are globally threatened (Table 4.1). Four are Critically Endangered, nine Endangered and 13 Vulnerable. All mammals were assessed as part of the Global Mammal Assessment, conducted by IUCN and CI in 2008. These are now in the process of being reassessed, and about half of the species have been updated since 2014.

The family Capromyidae is the most diverse, with 10 living species, seven of which are found in Cuba. Two of the Cuban endemics are considered "Possibly Extinct", namely dwarf hutia (*Mesocapromys nanus* - CR) and little earth hutia (*M. sanfelipensis* - CR). Cabrera's hutia (*M. angelcabrerai* - EN) and large-eared hutia (*M. auritus* - EN), restricted to single sites on the Cuban islands of Cayos de Ana María and Cayo Fragoso, respectively, are also in a precarious state. The three other remaining species are also country endemics and are threatened: Jamaican and Bahaman hutias are Vulnerable, while Hispaniolan hutia is Endangered. Bats are represented by 59 species, of which 35 are endemic and 12 are considered globally threatened. Overall, 25 percent of Caribbean mammals are globally threatened.

4.5.2 Birds

Of the 565 known bird species in the Caribbean Islands Hotspot, 55 species are currently listed as globally threatened, 48 of which are confined to the hotspot, and 12 of which are considered Critically Endangered. These include ivory-billed woodpecker (*Campephilus principalis*), Ridgway's hawk (*Buteo ridgwayi*)

and Grenada dove (*Leptotila wellsi*). Eighteen species are considered Endangered, including Bahama swallow (*Tachycineta cyaneoviridis*), and 25 have been assessed as Vulnerable, including nine species of Amazon parrots. At least six species of Caribbean birds have gone extinct over the last 500 years, including four species in the Psittacidae (parrot) family. Cuban macaw (*Ara tricolor*), the last of the four species to disappear, was hunted to extinction for food and the pet trade during the second half of the 18th century.

Recently, six new species have been added to the bird list of the hotspot: grey-headed quail-dove (*Geotrygon caniceps* - VU), endemic to Cuba; white-fronted quail-dove (*G. leucometopia* - EN), endemic to Hispaniola; western chat-tanager (*Calyptophilus tertius* - VU), endemic to Hispaniola; Bahama nuthatch (*Sitta insularis* - EN) and Bahama oriole (*Icterus northropi* - EN), both endemic to The Bahamas, and Bahamas warbler (*Setophaga flavescens*) also endemic to The Bahamas but not considered threatened. Unfortunately, only a single Bahama nuthatch has been found since Hurricane Matthew hit Grand Bahama in 2016, affecting the only known locality for the species. This species could, therefore, become the next extinction of a bird species in the Caribbean.

In addition, golden swallow (*Tachycineta euchrysea* - VU) has not been found in Jamaica for more than 30 years, and according to the most recent surveys, it might have to be considered formally extinct on the island (Proctor *et al.* 2017).

4.5.3 Reptiles

A total of 602 species recognized in the hotspot (67.4 percent) have been assessed formally using the IUCN Red List criteria. Another 88 species have already been assessed but their status has not yet been published on the Red List website (J. Daltry pers. comm. 2018). According to the figures available in the IUCN Red List (2017), nine reptile species are Extinct and 184 are globally threatened (31 percent). These comprise 72 Critically Endangered, 80 Endangered and 32 Vulnerable species, including a large number of highly restricted-range species. The Sphaerodactylidae family has the largest number of species, of which almost half (46) are threatened, although 11 other families have most of their species under some level of threat, in particular the Scindae (24 of 28 species) and Iguanidae (all but one of 11 species). During its initial investment phase, CEPF supported efforts to conserve the habitats of Central Bahamian rock iguana (*Cyclura rileyi*) on San Salvador island in The Bahamas, as well as an isolated sub-population of Ricord's iguana in Haiti.

4.5.4 Amphibians

Amphibians in the hotspot have been systematically assessed against the Red List criteria (180 of the 200 recorded species to date have been assessed). The Eleutherodactylidae family has the most species (152), of which 82 percent are threatened. However, the majority of species in all families are threatened. Therefore, the Caribbean stands out globally, with by far the highest percentage of threatened amphibians of any hotspot (82 percent of the 180 species assessed to date), some of which are possibly extinct. The four countries globally with the highest percentage of threatened (including extinct) amphibians are all in the Caribbean. The Massif de la Hotte mountain range in south-western Haiti can be considered one of the most important areas in the world for amphibian conservation, as it supports around 28 globally threatened species, many of which are restricted to this single mountain range. Conservation priorities for the hotspot's amphibians include actions to address major threats, especially habitat loss, and ensure that relevant management plans incorporate amphibians, so their specific requirements are met. In spite of some recent studies and previous CEPF investments in the region (Martínez Rivera and Rodríguez

Plaza 2015), knowledge of amphibian populations and impacts on individual species from habitat loss are still poorly known, especially in high diversity areas, such as the island of Hispaniola.

4.5.5 Freshwater and Nearshore Marine Fish

At present, 42 globally threatened bony fish species have been recorded in the Caribbean, comprising four Critically Endangered, nine Endangered and 29 Vulnerable species (IUCN 2017b). These include only five freshwater fishes listed, although data on these species are not lacking in the literature and a re-assessment of the 65 endemics is long overdue.

There are 1,538 species of bony fish assessed on the IUCN Red List that occur within the marine waters of the Caribbean Islands Hotspot. Limiting these to just species found at depths above 200 m reduces the list to 1,354 species. These have been treated here as the 'nearshore' species, although a number are more likely to be pelagic species that only rarely occur close to the shore. Of these, 37 species (3 percent) have been assessed as globally threatened, although there are a further 93 species assessed as Data Deficient; if all of these were found to be threatened, the proportion of threatened species would rise to 10 percent.

Four bony fish species, blind cave brotula (*Lucifuga simile*), roundnose grenadier (*Coryphaenoides rupestris*), Atlantic goliath grouper (*Epinephelus itajara*) and Warsaw grouper (*Hyporthodus nigritus*) are listed as Critically Endangered, indicating an extremely high extinction risk and a need for immediate management actions to reverse these population trends. Other threatened species have highly restricted ranges, such as Cayman green-banded goby (*Tigrigobius harveyi*) and Cayman cleaner goby (*Elacatinus cayman*), which are both confined to a small area of Grand Cayman and listed as Endangered.

Fish stocks are depleted or under strong pressure in most of the Caribbean (Heileman 2005). Key threats to nearshore fishes in the Caribbean Islands Hotspot include overexploitation of fish stocks, degradation of coral reef habitats, predation by introduced species (in particular the non-native lionfishes (*Pterois* spp.)), and the ongoing loss of important nearshore habitats, such as mangrove, seagrass meadows and hard-bottom habitats (Linardich *et al.* 2017).

4.5.6 Cartilaginous fishes

Of the 83 species of shark and ray occurring in the Caribbean Islands Biodiversity Hotspot, 17 are globally threatened (20 percent). These species include smalltooth sawfish (*Pristis pectinata* - CR), which has some important populations in the region, especially around The Bahamas. They also include three Endangered species of shark, whale shark (*Rhincodon typus*) and scalloped and great hammerheads (*Sphyrna lewini* and *S. mokarran*), as well as Vulnerable species of shark and ray, including great white shark (*Carcharodon carcharias*) and giant oceanic manta ray (*Manta birostris*).

Overfishing represents the primary threat to sharks and rays in the hotspot, although extensive coastal developments are reportedly damaging critical nursery and pupping grounds. Within the greater Caribbean region, commercial shark fishing first developed in the US Caribbean and expanded to Cuba, before further expanding after 1945, in response to demand for shark liver oil (for Vitamin A), leather, meat and fins (Thompson 1944, AACC Anglo-American Caribbean Commission 1945, Springer 1950).

The limited availability of landing data for shark fisheries throughout the Caribbean has made population estimates and assessments of decline difficult. Anecdotal information from a handful of reports, publications and surveys strongly suggests a decline in both abundance and size of commercial species,

as well as distributional shifts and the possible local extinction of some species. The scarcity of information is reflected in the high proportion of sharks and rays classified as Data Deficient (38 species, 46 percent of all species), including some Caribbean endemics and species with most of their distribution restricted to the hotspot. These include Florida torpedo, Bahamas ghost shark (*Chimaera bahamaensis*), Cuban chimaera (*C. cubana*), Antilles catshark (*Galeus antillensis*), Bahama skate (*Raja bahamensis*) and Caribbean skate (*Dipturus teevani*).

4.5.7 Reef-forming Corals

All the reef-forming coral species in the Caribbean were assessed for the IUCN Red List in 2008, and the ecosystem was classified as "endangered" at the regional level in 2013 (Keith *et al.* 2013). Of the 63 coral reef species assessed, 11 are listed as globally threatened and a further eight species as Data Deficient. The proportion of threatened species ranges from 17 to 30 percent, with a best estimate of 20 percent (63 species). Given the huge loss in coral cover, the proportion of species threatened with extinction is lower than expected and possibly reflects a lag in the impacts of the loss on individual species, given that most occur across the whole region, or that declines were under-estimated in 2008 (Jackson *et al.* 2014). The two *Acropora* species are both listed as Critically Endangered.

There is considerable variation in the state of reefs across the region. Just a few reefs still have coral cover greater than 50 percent but many have slipped below 10 percent. Deep coral reefs (below 30 m in depth) may provide refugia for corals from some of the threats that have affected shallower reefs. Reducing local human impacts on the reefs is vital to enable coral reefs to withstand the worsening impacts of climate change. While climate change is already impacting coral reefs, reef management is by no means futile but is, in fact, more important than ever before. Management actions are urgently needed, otherwise the Caribbean coral reefs and their associated resources will virtually disappear within just a few decades (Jackson *et al.* 2014).

4.5.8 Seed Plants

There are more than 11,000 species of seed plant occurring in the hotspot but only 952 have been assessed on the IUCN Red List to date. When the previous ecosystem profile for the Caribbean Islands was completed in 2010, 438 species of plants were listed as globally threatened. Since then, 75 more species have been added, making a total of 124 Critically Endangered, 159 Endangered and 230 Vulnerable species. An ongoing impediment to understanding the magnitude of plant species that are globally threatened in the Caribbean Islands is that relatively few plant species in the hotspot have been globally assessed based on IUCN Red Listing standards.

4.6 Ecosystem Services

The Millennium Ecosystem Assessment (2005) grouped ecosystem services into four categories: provisioning services such as food, water, timber and fiber; regulating services that affect climate, floods, disease and water quality; cultural services that provide recreational, aesthetic and spiritual benefits; and supporting services such as soil formation, photosynthesis and nutrient cycling.

Although there have been some studies of ecosystem services in the insular Caribbean, there is much less information available about the hotspot's ecosystem and ecological services than for other regions in the Americas. The available information is fragmented and not yet compiled at the hotspot scale. Some

authors and organizations have assessed and valuated ecosystem services at the ecosystem level, and in some rare cases at the country level.[7] Others have focused on ecosystem services in protected areas.[8]

KBAs in the Caribbean Islands Hotspot are important for their species richness and uniqueness but they are also extremely important sources of provisioning, regulating and cultural ecosystem services. All of the hotspot's ecosystems, and, by extension, many of its KBAs, provide multiple ecosystem services. Forests, for example, are important for erosion control, flood mitigation, water purification, pollination, waste assimilation and disease regulation.

A summary of the main ecosystem services in the hotspot is provided in Table 4.2 and a discussion of selected ecosystem services of high importance to hotspot countries is given in the following sections.

Table 4.2 Main Ecosystem Services in the Caribbean Islands Hotspot

Ecosystem Service	Beneficiaries	Relative Importance within the Hotspot
Provisioning Services		
Fresh Water Flows (Artisanal and run off, flows) for drinking, irrigation, industrial use, energy generation	Entire population within the Hotspot	Very important as the area is water stressed
Food Production (Fisheries in freshwater and marine systems)	Local fishers, fish consumers, associated economic activities	Very important for local fisheries communities within the hotspot
Food Production (Crops)	Entire population within the Hotspot	Very important
Food Production (Livestock)	Entire population within the Hotspot	Very important
Non-timber forest products (Honey, handicraft materials, thatch, ornamental and household plants, spices, oils, seeds, tree seedlings, orchids, fruits)	Entire population within the Hotspot	Important, some goods could be obtained from other sources beyond the Hotspot
Timber products	Entire population within the Hotspot	Very important
Medicinal plants, pharmaceuticals	Rural communities	Very important
Energy (Solar and wind energy)	Entire population	Important
Supporting Services		
Habitat for species	Global	Very important for global biodiversity
Maintenance of genetic diversity (Source of novel genetic material for crops (e.g. fruits)	Global	Potentially significant
Regulating Services		
Erosion regulation (Reduction of soil erosion and desertification through stabilization of soils)	Local populations, economic activity, especially in mountainous areas	Important, significant in some areas

[7] Bovarnick *et al.* (2010) assessed the importance of biodiversity in the region and others (e.g. Heileman 2005) provided general information on ecosystem services of the region. Mumby and Fitzsimmons (2014) reviewed reef ecosystem services in the Caribbean. John (2005) assessed the contribution of non-timber forest to rural economies in the Windward Islands of the Caribbean. At the country level, a cost analysis of ecosystems services provided by the National System of Protected Areas was carried out in the Dominican Republic (Gómez-Valenzuela *et al.* 2014). Valuations of water-related services were conducted in Jamaica (Pantin and Reid 2005) and St Lucia (Springer 2005). Greenhouse gas sequestration was assessed in Montserrat (Peh *in litt.*) and carbon sequestration in southwest Tobago (Varty 2016).

[8] Cesar *et al.* (2000) and Guingand (2008) economically valuated fisheries, forestry (charcoal and other non-timber products), tourism, recreation, waste treatment, sediment retention, coastal protection, carbon fixation, biodiversity and cultural heritage at Portland Bight Protected Area in Jamaica. Edwards (2011, 2013) assessed the economic value of carbon sequestration in Cockpit County and Coral Spring and Mountain Spring Protected Area in Jamaica.

Ecosystem Service	Beneficiaries	Relative Importance within the Hotspot
Air quality regulation (Local climate air quality)	Local populations, economic activity, especially in mountainous areas	Very important, significant in some areas
Water regulation (Reduction of disaster risk (flooding, landslide) through absorption of run-off)	Local populations, economic activity, especially in mountainous areas	Very important, significant in some areas
Water purification and waste management (Absorption of nutrient pollution, other pollutants in wetlands)	Local population, economic activities	Important, significant in some areas
Natural hazard regulation (Coastal and beach stabilization)	Local fishers, fish consumers, coastal communities, associated economic activities	Very important for local fishers, coastal communities and associated economic activities
Pest regulation (Control of pest species through predation, natural limits on population)	Farmers, livestock herders	Significant in some areas
Pollination	Entire population, farmers, rural communities	Very important for food security
Climate regulation (Carbon sequestration)	Global	Very important
Cultural Services		
Recreation and ecotourism (Recreation)	Local populations, especially urban populations using natural areas	Important mainly in urban coastal areas
Recreation and ecotourism **(**Tourism using natural spaces (beaches, coastal habitats)	Global tourists, local people engaged in the tourism economy	Very important mainly in coastal areas
Spiritual and religious value (cultural and spiritual experience)	Nature related spiritual, cultural experiences, values	Important

Source: Millennium Ecosystem Assessment (2005).

4.6.1 Provisioning Services

Provisioning services are critical for the livelihoods and economic activities of all humans. Ecosystems provide essential goods, such as food, fiber, fresh water, biochemicals, natural medicines, pharmaceuticals and genetic resources.

Water

Of the many provisioning ecosystem services, the single most important in this insular hotspot is water. The hotspot contains a great range of conditions regarding the access to freshwater resources (Scalley 2012) but, due to changes in land use, climate change and overpopulation, there is great pressure on provision of water in some islands.

Many Caribbean islands rely almost entirely on a single source of water, be it groundwater, rainwater, surface reservoirs, rivers and other surface flows or imports. The elevation of the land determines not only terrestrial habitat diversity but also hydrology. Smaller, flatter islands and archipelagic systems, such as The Bahamas and the Turks and Caicos Islands, tend to be dry with little or no surface water, while the more elevated, larger islands are characterized by the presence of surface water (Heileman 2005).

Groundwater recharge and water retention capacities of soils have been adversely affected by deforestation and inappropriate land-use practices. Water demand has increased over the past 30 years because of population growth and rapid urbanization, exceeding the natural supply capacity in some cases. This situation is most critical in the low limestone islands of the eastern Caribbean, where rainfall seasonality is very pronounced. On islands such as Anguilla, Antigua and Barbuda, Grenada and

Barbados, more than 65 percent of the total annual rainfall may be recorded in the wet season from June to December (Heileman 2005). In Barbados, groundwater infiltrates through the soil and limestone and then flows along the top of the aquifers and into a freshwater lens before discharging along the coast. Discrete recharge takes place through sinkholes, drainage wells and dry valley beds. Soils influence recharge because of varying infiltration rates. Soils occurring at higher elevations are generally more permeable than those at lower elevations. Consequently, there is greater potential for diffuse recharge through soils at higher elevations. According to research conducted by Jones *et al.* (1998) on the Pleistocene aquifers of Barbados, recharge was quantified by comparison of groundwater and rainwater concentrations and oxygen isotopic compositions. The results indicate that recharge is due to rapid infiltration, which occurs only during the wettest months of the year and represents 15 to 30 percent of annual rainfall.

The agriculture sector is one of the largest consumers of water in the Caribbean, accounting for more than 90 percent of the total water used in Haiti and 49 percent in Jamaica. In Barbados, by way of contrast, industrial consumption exceeds other uses (Heileman 2005).

Extraction of freshwater is very high in some islands. The demand for water from the local population and the tourism industry in The Bahamas is met primarily by extraction from shallow freshwater lenses. In some islands within the archipelago, freshwater resources are unable to meet the demand. For example, freshwater is shipped to New Providence from Andros Island to augment the local supply (Bahamas Environment, Science and Technology Commission 2001). In The Bahamas, water is also processed from seawater to meet the demand for freshwater on New Providence and a number of other islands, including Abaco, Bimini, Eluthera, Exuma, Inagua, Long Island, Ragged Island and San Salvador. Antigua and Barbuda, Barbados, Saint Lucia, and Grenada (Grenada, Carriacou and Petite Martinique) also depend heavily on water treated at desalination plants (UNESCO 2006).

Desalination plants also augment the water supply on Antigua and Barbuda, Barbados and the British Virgin Islands. Saltwater intrusion into the freshwater lenses from over extraction is also threatening freshwater supplies in the Dominican Republic and other countries (Heileman 2005).

The impact of climate change on water supply is a critical issue for sustainable development in the region (Anderson 2008). Climate change is expected to increase the frequency and intensity of drought events in the region. Rising sea levels may result in freshwater layers becoming thinner and more susceptible to saltwater contamination (see Chapter 10, Climate Change Assessment). The water supply in some Caribbean countries is already significantly low. Seven countries in the Caribbean are among the world's top 36 water-stressed countries, while Barbados is in the top 10. The United Nations Food and Agriculture Organization (FAO) defines countries like Antigua and Barbuda, Barbados and Saint Kitts and Nevis as water-scarce, with less than 1,000 m^3 of freshwater resources per capita (FAO 2016).

Several KBAs in the hotspot are important for their freshwater flows. Cockpit Country KBA in Jamaica, for example, is the source of six major rivers and, together with Catadupa and Litchfield Mountain-Matheson's Run KBAs, is a critical water resource for western Jamaica, including a significant proportion of the tourism industry. Cockpit Country's rivers supply a quarter of Jamaica's surface water runoff (Windsor Research Centre 2014). Extensive wetlands in Andros Island in The Bahamas, where six KBAs have been identified to date, are important sources of freshwater and supply 50 percent of the water to the capital, New Providence (Hargreaves-Allen 2010).

Sixteen rivers and 71 streams have their source in the Parque Nacional Montaña La Humeadora KBA within the Cordillera Central Conservation Corridor in the Dominican Republic. Among them is the strongest and second longest river in the country: the Yuna. The dams fed by the Yuna and Nizao rivers, which in turn receive water from the park, contribute to 42 percent of national hydroelectricity production. Sixty-nine percent of the drinking water of the capital city, Santo Domingo, is supplied by the Haina and Nizao rivers, which are fed by aquifers in the Parque Nacional Montaña La Humeadora. Dams fed by water from this park have a storage capacity of 801 million m^3 and a capacity to irrigate approximately 34,121 hectares. These resources and services are under heavy pressure and threat, mainly due to the advance of agriculture and livestock. Between 2003 and 2012, there was a reduction in the forested area of 2,198 hectares, equivalent to 7.2 percent of the territory of the park (Ministerio de Medio Ambiente y Recursos Naturales 2014).

Food

Fisheries, mainly marine, are economically important in the Caribbean, contributing to food security, employment and household income (Bovarnick *et al.* 2010). In the Caribbean, fish is the most important source of protein after poultry, especially in rural areas where the incidence of poverty may be high (Heileman 2005). Fisheries are especially important to the livelihoods of the poor in coastal regions or near inland waters. Contributions to the national economies of 12 Caribbean Regional Fisheries Mechanism (CRFM) member states[9] averaged less than 1 percent of gross domestic product (GDP) between 2010 and 2014 (CRFM 2015). Fisheries populations are decreasing in the Dominican Republic (Wielgus *et al.* 2010). The Portland Bight Protected Area KBA in Jamaica is of great importance to the local economy and food security. Approximately 22 percent of Jamaica's 18,000 fishers and 21 percent of registered fishers operate out of communities in the protected area (MOAF 2013 cited in Caribbean Coastal Area Management Foundation and Jamaica Environment Trust 2013).

Non-timber Forest Products

Use of non-timber forest products (NTFPs) is important across the Caribbean but is not well recorded in many islands and there are few valuations of NTFPs in the region and globally. NTFPs include wood extracted for cooking, food, medicinal plants and natural fibers. These products are often especially important to poor people, who may depend on them for both survival and income, although they are not always obtained in a sustainable way.

In Dominica, larouman reed (*Ischnosiphon arouma*) is extracted from forest for use by the Kalinago (indigenous Carib) people for basket-making. In Grenada, common screw pine (*Pandanus utilis*) and common bamboo (*Bambusa vulgaris)* are harvested and used for making baskets and other handicrafts. People harvest naturally occurring herbs for their medicinal properties (Government of Grenada 2000).

Although demand has generally decreased in recent decades, charcoal continues to be an important source of domestic fuel and income on some islands. On Saint Lucia, charcoal is produced in covered pits, which can be seen scattered around the country, often utilizing wood from secondary forests outside of the forest reserve (Daltry 2009). Charcoal and fuelwood provide 75 percent of Haiti's energy consumption (Smucker *et al.* 2007). Charcoal in Haiti is exploited in Parc National Naturel Forêt des Pins among other sites (Dolisca 2005). Bois gras (a resin used to start charcoal fires) is particularly used in Parc National Naturel La Visite and Parc National Naturel Forêt des Pins (Posner *et al.* 2010).

[9] Anguilla, Antigua and Barbuda, Bahamas, Barbados, Dominica, Grenada, Jamaica, Montserrat, Saint Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines and the Turks and Caicos Islands. Computation excludes 2013 and 2014 data for Haiti and 2014 data for Jamaica.

On St. Vincent, many forest plants are used for traditional medicinal purposes and in handicraft production but there is no existing inventory of specific uses for different species (Government of St. Vincent and the Grenadines 2010).

4.6.2 Regulating and Supporting Services

Regulating services are those that ecosystems provide by acting as regulators, for example, regulating the quality of air and soil or by providing flood and disease control (TEEB 2018). Other regulating and supporting services include carbon sequestration, soil formation, photosynthesis, nutrient cycling, climate regulation, water purification, population control of pest species and pollination (Bovarnick *et al.* 2010, Millennium Ecosystem Assessment 2005).

Moderation of Extreme Events

The most important regulating services provided by ecosystems in the Caribbean Islands Hotspot are those related to the reduction of disaster risk. Climate change increases the Caribbean's natural vulnerability to hydrometeorological events and poses a severe threat to the ecosystems of the region and the benefits and services they provide (Debrot and Bugter 2010). Two hotspot nations are among the top 10 countries on the Global Climate Risk Index: Haiti ranks number two; and the Dominican Republic occupies the number 10 spot (Eckstein *et al.* 2017).

Protection and mitigation of damage from storms, drainage and filtration, wind breaks, and flood regulation are among the many services provided by coastal ecosystem that are of primary importance for people living close to the shoreline. Mangroves are of particular importance for these services. Mangroves and littoral forests in the Caribbean are considered the most biologically diverse habitats after coral reefs (Heileman 2005). Not only do they provide breeding grounds for many species of fish and other marine resources, they are a natural and very cost-effective form of protection against hurricanes and climate change for coastal areas and cities (Dudley *et al.* 2010, 2015).

Erosion Control and Maintenance of Soil Fertility

Soil retention services in the wet broadleaf forests of Reserva Científica Loma Guaconejo KBA have been valued between $863,970 and $5,574,000, while in Reserva Científica Loma Quita Espuela KBA they have been valued between $184,543 and $1,190,600. Soil retention has the highest economic value in these areas, because it prevents landslides, keeps fertile agricultural land and reduces sedimentation of waterways (Kerchner and Bonilla 2014).

The broad richness of species diversity in the hotspot offers potentially important new genetic material for crops, making it important to safeguard the ecosystems that harbor this very important, highly endemic biodiversity (Bovarnick *et al. 20*10).

Carbon Sequestration

Ecosystems regulate the global climate by storing and sequestering greenhouse gases. As trees and plants grow, they remove carbon dioxide from the atmosphere and effectively lock it away in their tissues. Forest ecosystems are, therefore, carbon stores. Biodiversity also plays an important role by improving the capacity of ecosystems to adapt to the effects of climate change (TEEB 2018). Carbon sequestration is important in mitigating levels of greenhouse gases in the atmosphere and the ability to do so is becoming an important element of negotiations for financial support from the Green Climate Fund (GCF) and other similar sources (Caribbean Development Bank 2014b).

The Caribbean Islands Biodiversity Hotspot has an interesting range of ecosystems offering important services, such as carbon sequestration and storage. Mangroves, for example, have high carbon storage and sequestration rates. The rate of deforestation and conversion of mangroves continues to be high in some hotspot countries and such changes to this ecosystem have been predicted to result in significant carbon emissions to the atmosphere. Despite knowledge of the impacts of deforestation and conversion of habitats, few studies have quantified carbon stocks or the losses associated with the changes of these ecosystems (Kauffman *et al.* 2014).

One of the few available carbon sequestration studies in the hotspot was undertaken in Montecristi province in northwestern Dominican Republic. This study assessed the ecosystem carbon stocks of three common mangrove types of the Caribbean, as well as those of abandoned shrimp ponds in areas formerly occupied by mangroves (Kauffman *et al.* 2014). The 6,260 hectares of mangroves and converted mangroves in Montecristi province are estimated to contain 3,841,490 Mg of carbon[10]. The highest stocks of carbon (between 706 and 1,131 Mg/ha) are stored in medium-stature mangroves, those between 3 and 10 m in height. Abandoned shrimp ponds stored just 95 Mg/ha, only a fraction of the carbon stored by mangroves. Mangroves cover 76 percent of the area but currently store 97 percent of the carbon in this coastal wetland. Converted lands store only 3 percent of the total ecosystem carbon, while they make up 24 percent of the area. If the mangroves were converted to shrimp ponds, they would potentially emit between 2,244 and 3,799 Mg of CO_2 equivalent per hectare. This would rank among the largest measured carbon emissions from land-use change in the tropics.

Cockpit Country in Jamaica contributes to mitigating climate change by regulating carbon, ozone and other chemicals in the atmosphere. A 2011 ecosystem service valuation of Cockpit Country put the annual value of the area's carbon sequestration services at just over $10 million, based on calculations of the carbon stocks of forest and crop land in the area. Forest land stocks of carbon are estimated at 11,013,909 tonnes (40,384,335 Mg of CO_2 equivalent). The forest absorbs 319,392 tonnes of carbon per year (1,171,106 Mg of CO_2 equivalent), while the crop land within Cockpit Country emits 282,146 Mg of CO_2 equivalent per year. The difference between the carbon storage capacity of the forest lands and the emissions of the crop lands represents the net contribution of Cockpit Country to Jamaica's carbon emissions under current land-use conditions (Edwards 2011).

4.6.3 Cultural Services

Cultural services include spiritual and recreational values provided by nature, including tourism (rural and nature-based), and recreational, cultural and aesthetic activities. Markets around these activities are also increasing in the region (Weaver 1993, Wilson *et al.* 2014).

Recreation and Tourism

The provision of other ecosystem services, such as nature-based tourism, depends on the quality and status of the ecosystems in KBAs. Beaches, coral reefs, seagrass meadows and other marine ecosystems provide very important ecological services to the insular Caribbean. Besides supporting services, beaches and coral reefs provide the basis for the region's tourism sector, which plays a prominent role in Caribbean economies, making total contributions of more than 20 percent to the GDP of most hotspot countries and 60 percent or more of some (see Section 7.3.1).

[10] One Mg = one tonne of carbon (IPCC 2018).

The estimated values of the ecosystem services provided by coral reefs in the Caribbean include $2.1 billion for dive tourism to $2.2 billion for coastline protection (Burke and Maidens 2004). The health of marine ecosystems in the region has declined, mainly due to pollution from increased suspended solids and chemical compounds, overexploitation and habitat conversion (Heileman 2005).

The importance of forests to support nature tourism on islands is being increasingly recognized. Forest resources, in particular national parks and other ecological sites, are key components of Dominica's tourism product. Commonly called "the nature island", Dominica boasts of its unspoiled and untouched natural environments and promotes tourism packages that cater to naturalists and eco-adventurers. Saint Lucia's appeal to tourists owes much to its natural beauty, with the forests in particular adding to its tropical paradise label. Each year, a large number of tourists visit the forest reserves, hike in Petit Piton KBA or otherwise experience forests through driving, birding tours, aerial flights or horse riding (Daltry 2009). In the past three decades, tourism has become the main component of the economy in St. Vincent and the Grenadines, as the country also sells eco-tourism packages highlighting its forested islands to nature-seeking tourists.

Blue and John Crow Mountains Protected National Heritage KBA in Jamaica is managed for its recreational values as well as for the conservation of biological diversity, cultural heritage and water supply (JCDT 2018). It was declared a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site in 2015, becoming Jamaica's first World Heritage Site and the first mixed (cultural and natural) site in the Caribbean sub-region.

Spiritual Experience and Sense of Place

Traditional, strong, spiritual connections with the environment and related cultural practices still exist in the Caribbean. This is especially important in rural communities and to people living within or adjacent to forests. For example, Cockpit Country KBA in Jamaica provides scenic value, and many people living there place a positive existence value on forest. Unique communities, such as the Maroons, have deep connections to the area (Edwards 2011).

5 CONSERVATION OUTCOMES DEFINED FOR THE CARIBBEAN ISLANDS BIODIVERSITY HOTSPOT

Biological diversity cannot be saved by *ad hoc* actions (Pressey 1994). To support the delivery of coordinated conservation action, CEPF invests in defining conservation outcomes to identify a quantifiable set of species, sites and corridors that must be conserved to promote the long-term persistence of global biodiversity. By presenting quantitative,justifiable and verifiable targets against which the success of investments can be measured, conservation outcomes allow the limited resources available for conservation to be targeted more effectively and their impacts to be monitored at the global scale. Conservation outcomes are the basis for identifying biological priorities for CEPF investment in the Caribbean Islands Hotspot.

Biodiversity is not measured by any single unit but, rather, is distributed across a hierarchical continuum of ecological scales (Wilson 1992). This continuum can be reduced to three levels: species, sites and corridors (inter-connected landscapes of sites). These three levels interlock geographically, through the occurrence of species at sites, and of species and sites in corridors. Given threats to biodiversity at each of the three levels, quantifiable targets for conservation can be set in terms of extinctions avoided (species outcomes), areas protected (site outcomes) and corridors consolidated (corridor outcomes). Conservation outcomes are defined sequentially, with species outcomes defined first, then site outcomes and, finally, corridor outcomes.

CEPF defines species outcomes as extinctions avoided at the global level, which directly links to globally threatened species using the IUCN Red List categories: Critically Endangered, Endangered and Vulnerable. This definition excludes Data Deficient species, which are considered priorities for further research but not necessarily for conservation action *per se*. Species outcomes are achieved when a species' global threat status improves or, ideally, when it is removed from the Red List. The basis for defining species outcomes for the Caribbean Island Biodiversity Hotspot profile is the global threat assessments contained within *The 2017-3 IUCN Red List of Threatened Species* (www.iucnredlist.org), which is the authoritative data source on the global conservation status of species.

Given that most globally threatened species in the Caribbean are best conserved by protecting a network of sites at which they occur, the basis for defining site outcomes is the comprehensive set of KBAs in the hotspot. KBAs are sites of importance for the global persistence of biodiversity. They are identified for biodiversity elements for which specific sites contribute significantly to their global persistence, such as globally threatened species or ecosystems. The identification of KBAs follows the *Global Standard for the Identification of Key Biodiversity Areas*, prepared by the IUCN Species Survival Commission and IUCN World Commission on Protected Areas in association with the IUCN Global Species Programme (IUCN 2016). The KBA Standard includes a total of five criteria and 11 sub-criteria under which a site can be identified as a KBA:

- Criterion A: Threatened biodiversity.
- Criterion B: Geographically restricted biodiversity.
- Criterion C: Ecological integrity.
- Criterion D: Biological processes.
- Criterion E: Irreplaceability through quantitative analysis.

For this ecosystem profile only seven of the 11 sub-criteria were used to identify KBAs in the Caribbean: threatened species (Criteria A1a-e) for all Critically Endangered, Endangered and Vulnerable species, individually geographically restricted species (B1), and demographic aggregations (D1, for some birds only). Additional information about the KBA criteria can be found in Appendix 2.

Site outcomes are achieved when a KBA is safeguarded, through improved management, expansion of an existing conservation area, or creation of a new conservation area. Improved management of an existing conservation area involves changing management practices for a KBA to improve the long-term conservation of species' populations and the ecosystem as a whole. Expansion of an existing conservation area involves increasing the proportion of a KBA under conservation management to meet species' area requirements or incorporating other previously excluded species or habitats. Creation of a new conservation area involves designating all or part of a KBA as a conservation area and initiating effective long-term management. Conservation areas are not limited to actual or potential protected areas but also include what has been defined as Other Effective Area-based Conservation Measures (OECMs, Jonas *et al.* 2014), which includes sites that are managed for conservation by local communities, private landowners or other stakeholders.

The update and identification of KBAs in the Caribbean under the 2016 KBA Standard took into account those sites identified as KBAs in CEPF's 2009 ecosystem profile, based on the previous KBA standard (Langhammer *et al.* 2007), the 2017 AZE update, and new protected areas declared since 2009. This update was done through analyses of regionally accessible data (databases, museum specimens, etc.) and literature reviews, with the support of IUCN and the New York Botanical Garden, followed by consultations with local experts in the Dominican Republic, Haiti and Jamaica, and an online workshop with experts from The Bahamas and the Lesser Antilles. Information for Cuba, and US and European territories is based on previous evaluations, and was not reviewed or updated for this ecosystem profile.

While the protection of a network of sites may be sufficient for conserving most elements of Caribbean biodiversity in the medium term, the long-term conservation of biodiversity often requires the consolidation of interconnected landscapes of sites, or "conservation corridors", especially in larger island landscapes. This is particularly important for the conservation of broad-scale ecological and evolutionary processes (Schwartz, 1999), and to ensure ecosystem resilience. To allow the persistence of biodiversity, interconnected landscapes of sites must be anchored on core areas embedded in a matrix of natural and/or anthropogenic habitats (Soulé and Terborgh, 1999). Therefore, conservation corridors are anchored on KBAs, with the rest of the conservation corridor comprising either areas that have the potential to become KBAs in their own right (through management or restoration) or areas that contribute to the ability of the conservation corridor to support all elements of biodiversity in the long term.

KBAs, therefore, were the starting point for defining conservation corridors in the Caribbean Islands Hotspot, especially on the larger islands. First, conservation corridors were defined wherever it was necessary that connectivity be maintained between two or more KBAs to meet the long-term conservation needs of biodiversity. Then, additional conservation corridors were defined wherever it was considered necessary to increase the area of actual or potential natural habitat to maintain evolutionary and ecological processes. In the latter case, the definition of conservation corridors was largely subjective, due to limitations of time, lack of relevant data and absence of detailed criteria.

Given these limitations, emphasis was placed on maintaining continua of natural habitat across environmental gradients, particularly altitudinal gradients, in order to maintain such ecological processes as altitudinal migration of bird species and to provide a safeguard against the potential impacts of climate

change. Conservation corridors were defined through consultation with local experts, complemented by analysis of other data layers. Due to the fragmented nature of an archipelagic hotspot such as the Caribbean (often with isolated KBAs set within developed or heavily degraded landscapes), defining landscape-scale outcomes was not always appropriate. As a result, relatively few conservation corridors were defined in total (see Section 5.3).

In theory, within any given region, or, ultimately, for the whole world, conservation outcomes can be defined for all taxonomic groups. However, this is dependent on the availability of data on the global threat status of all taxa and on the distribution of globally threatened species among sites and across corridors. In the Caribbean Islands Hotspot, data were only available for mammals, birds, amphibians, reptiles, fish, corals and seed plants, thus conservation outcomes were only defined for these groups.

The approach of using global threat assessments as the basis for defining species outcomes and, consequently, site and corridor outcomes, has several limitations, the most serious being that these assessments are incomplete for many taxonomic groups. Furthermore, the definition of conservation outcomes is an iterative process: as more species are assessed as globally threatened, additional site outcomes can be defined. As the irreplaceability criteria are applied for non-bird taxa, these additional site outcomes can help to fill the gaps in taxonomic coverage.

5.1 Species Outcomes

The biodiversity of the Caribbean Islands Hotspot is at serious risk of species extinctions. From a total of more than 14,000 species (of the taxa included in the assessment, see Table 4.1), 4,182 species have been assessed using the IUCN Red List criteria, of which 992 species (24 percent) are globally threatened. A full list of the globally threatened taxa used for this ecosystem profile is available in Appendix 1; and a summary of the total figure of threatened species at each country of the hotspot can be found in Table 5.1. The hotspot is particularly important for reptiles, amphibians and flowering plants, due to the high rates of speciation and endemism and exceptionally high levels of threat.

The following sections feature the CEPF-eligible countries, the primary focus of this ecosystem profile update. Where new information has been provided, it is also highlighted. Rather than detailing the number of threatened and endemic species by country, this section presents a general discussion on the species triggering the KBA criteria for one or more sites. These are the species on which CEPF will focus its efforts by aligning priority species at priority sites (KBAs).

Section 5.2 presents information about the different datasets used in this profile. More detailed information on species outcomes in Cuba, Puerto Rico and the US Virgin Islands can be found on the World Database of KBAs (http://www.keybiodiversityareas.org/site/results?reg=4andcty=53andsnm). Details of the species outcomes for the EU OCTs can be found in the ecosystem profile prepared by the EU BEST initiative (Voluntary Scheme for Biodiversity and Ecosystem Services in Territories of European Overseas) (https://ec.europa.eu/environment/nature/biodiversity/best/index_en.htm).

Table 5.1 Summary of Threatened Species by Country - Caribbean Islands Biodiversity Hotspot

Figures included here are based in the 2017-3 IUCN Red List of Threatened Species.

Class	Anguilla	Antigua and Barbuda	Aruba	Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Mammalia		1	1	6	2	3	1	1	11	3	2	6	3	3	5	6		1	2		1	1	1	1	1	2	1
Aves		2		8	3	2	2	1	17	1	6	15	1	4	14	10	4	3	7		2	6	1	3	1	2	2
Reptilia	9	6	2	11	7	6	14	6	24	5	3	47	7	9	55	24	8	4	16	4	4	6	6	8	6	7	14
Amphibia							2		49		2	32	1	2	49	15	1	1	14					1			1
Actinopterygii	23	23	18	31	23	26	23	25	30	22	23	23	22	23	25	22	15	23	23	13	23	23	23	23	23	24	23
Chondrichthyes	7	7	6	14	7	6	6	8	15	7	7	7	7	7	6	9	6	6	8	2	7	8	7	7	7	6	5
Anthozoa	10	10		10	10	10	10	10	10	10	10	10	10	14	10	10		10		10	10	10	10	10	10	10	
Hydrozoa		1				1				1	1			1				1		1		1					
Magnoliopsida	4	4	1	4	2	2	10	16	158	1	10	34	3	8	32	209	9	5	52	2	2	5	3	5	2	8	9
Liliopsida			1			1		6	10	1		3		1	5	1		1	1							1	1
Pinopsida				1					4			4			3	3						1					
Cycadopsida				2					5							1			2								
Total	**53**	**54**	**29**	**87**	**54**	**57**	**68**	**73**	**333**	**51**	**64**	**181**	**54**	**72**	**204**	**310**	**43**	**55**	**125**	**32**	**49**	**61**	**51**	**58**	**50**	**60**	**56**

Of the 992 globally threatened species in the Caribbean Islands Hotspot, 575 species occur in countries eligible to receive CEPF funding.[11] Of these species, only 337 trigger the KBA criteria based on information available at the time of the ecosystem profiling process (Table 5.2).

Table 5.2 Species Outcomes for the CEPF-eligible Countries of the Caribbean Islands Hotspot

Class	CR	EN	VU	Total	Percentage of threatened species that trigger KBAs
Mammalia	2 (2)	4 (3)	8 (6)	14 (11)	78.6
Aves	7 (3)	11 (10)	19 (15)	37 (28)	75.7
Reptilia	44 (21)	50 (18)	24 (13)	118 (52)	44.1
Amphibia	40 (29)	30 (24)	8 (8)	78 (61)	78.2
Actinopterygii	3 (0)	6 (4)	24 (1)	33 (5)	15.2
Chondrichthyes	1 (1)	3 (0)	12 (0)	16 (1)	6.3
Anthozoa	2 (0)	2 (0)	6 (0)	10 (0)	0
Hydrozoa	0 (0)	1 (0)	0 (0)	1(0)	0
Magnoliopsida	49 (28)	61 (46)	141 (90)	251 (164)	65.3
Liliopsida	3 (3)	2 (2)	2 (1)	7 (6)	85.7
Pinopsida	1 (1)	5 (5)	1 (1)	7 (7)	100
Cycadopsida	0 (0)	1 (1)	2 (1)	3 (2)	66.7
Totals	**152 (88)**	**176 (113)**	**247 (136)**	**575 (337)**	**58.6**

Note: Figures in brackets show the number of species triggering KBAs.

5.1.1 Mammals

Mammals comprise the taxonomic group with the fewest threatened species in the hotspot. There are 26 globally threatened mammal species, 14 of which occur in the eligible countries. Eleven of these species trigger KBA criteria for one or more sites: two Critically Endangered species (Jamaican flower bat (*Phyllonycteris aphylla*) and Jamaican greater funnel-eared bat), three Endangered species (Hispaniolan hutia, Hispaniolan solenodon and Guadeloupean big-eyed bat (*Chiroderma improvisum*)) and six Vulnerable species. Three mammal species have not been not reported for any KBA: sei whale (*Balaenoptera borealis*), blue whale (*Balaenoptera musculus*) and Dominican myotis (*Myotis dominicensis*). The identification of KBAs in the marine environment (beyond coastal areas) was outside the scope of this profile.

Four mammal species triggering the KBA criteria (all bats) have each been confirmed at one site only. Two species are have been reported at two sites. The rest occur at four or more sites, with Jamaican hutia, Hispaniolan hutia, Hispaniolan soleodon, Jamaican greater funnel-eared bat and Jamaican red bat (*Lasiurus degelidus*) all occurring at more than 10 sites (Table 5.3). The full list of threatened mammals by country is presented in Appendix 1.

[11] The CEPF-eligible countries are Antigua and Barbuda, Bahamas, Barbados, Dominica, Dominican Republic, Grenada, Haiti, Jamaica, Saint Kitts and Nevis, Saint Lucia, and St. Vincent and the Grenadines.

Table 5.3 Globally Threatened Mammals by Country and Number of KBAs (CEPF-Eligible Countries Only)

Family	Species	IUCN Red List	Number of KBAs/Country					
			Dominican Republic	Bahamas	Barbados	Haiti	Jamaica	Saint Kitts and Nevis
Capromyidae	Jamaican Hutia (*Geocapromys brownii*)	VU					17	
	Bahaman Hutia (*Geocapromys ingrahami*)	VU		2				
	Hispaniolan Hutia (*Plagiodontia aedium*)	EN	15			2		
Natalidae	Jamaican Greater Funnel-eared Bat (*Natalus jamaicensis*)	CR					1	
Phyllostomidae	Guadeloupean Big-eyed Bat (*Chiroderma improvisum*)	EN						1
	Jamaican Flower Bat (*Phyllonycteris aphylla*)	CR					1	
Solenodontidae	Hispaniolan Solenodon (*Solenodon paradoxus*)	EN	13			1		
Trichechidae	American Manatee (*Trichechus manatus*)	VU	2			2	2	
Vespertilionidae	Jamaican Red Bat (*Lasiurus degelidus*)	VU					3	
	Minor Red Bat (*Lasiurus minor*)	VU	6			2		
	Myotis nyctor	VU			1			

5.1.2 Birds

With a total of 55 threatened species (see Appendix 1), birds rank third among animals in the hotspot in terms of the number of threatened species in the hotspot. Thirty-seven threatened bird species occur in the CEPF-eligible countries, four of which were not reported for any KBA. While some species may not trigger the KBA criteria in the hotspot due to their marginal populations in the Caribbean, such as Cerulean warbler (*Setophaga cerulea* - VU) and Leach's storm-petrel (*Hydrobates leucorhous* - VU), others cannot trigger the KBA criteria because they are potentially extinct globally, like Eskimo curlew (*Numenius borealis* - CR), or extinct locally, like giant kingbird (*Tyrannus cubensis* - EN), which no longer occurs in The Bahamas.

Of the 33 bird species reported in KBAs, 28 trigger KBA criteria: three Critically Endangered, 10 Endangered and 15 Vulnerable (Table 5.4). Of particular relevance is the lack of sites triggering the KBA criteria for Jamaican poorwill (*Siphonorhis americana* - CR), Semper's warbler (*Leucopeza semperi* - CR) and Bahamas nuthatch (EN). These are country endemics in Jamaica, Saint Lucia and The Bahamas, respectively, and all lack recent records. Only a single individual of Bahamas nuthatch, which was originally reported for only one site (Grand Bahamas Old Pine Forests), has been recorded since 2016. Therefore, it could not be confirmed as a trigger species for that site.

Despite their mobility, the populations of some bird species are genuinely restricted to very few sites, such as Ridgway's hawk (CR) or imperial amazon (EN), both only known to occur in two sites in the Dominican Republic and Dominica respectively. Other species, mostly from the larger islands, have been recorded more widely. Populations of white-necked crow (*Corvus leucognaphalus* - VU), golden swallow (VU), Hispaniolan amazon (*Amazona ventralis* - VU) and Hispaniolan parakeet (*Psittacara chloropterus* - VU) have been confirmed at more than 10 sites in the Greater Antilles.

Table 5.4 Globally Threatened Birds by Country and Number of KBAs (CEPF-eligible Countries Only)

Family	Species	IUCN Red List	Antigua and Barbuda	Bahamas	Dominica	Dominican Republic	Grenada	Haiti	Jamaica	Saint Lucia	St. Vincent and the Grenadines
Accipitridae	Ridgway's Hawk *(Buteo ridgwayi*)	CR				2					
Anatidae	West Indian Whistling-duck (*Dendrocygna arborea*)	VU	5	1					3		
Calyptophilidae	Western Chat-tanager (*Calyptophilus tertius*)	VU				2		4			
Columbidae	White-fronted Quail-dove (*Geotrygon leucometopia)*	EN				2					
	Grenada Dove (*Leptotila wellsi*)	CR					5				
	Ring-tailed Pigeon (*Patagioenas caribaea*)	VU							7		
Corvidae	White-necked Crow (*Corvus leucognaphalus*)	VU				10		6			
Cuculidae	Bay-breasted Cuckoo (*Coccyzus rufigularis*)	EN				5					
Fringillidae	Hispaniolan Crossbill (*Loxia megaplaga*)	EN				4		4			
Hirundinidae	Bahama Swallow (*Tachycineta cyaneoviridis*)	EN		2							
	Golden Swallow (*Tachycineta euchrysea*)	VU				7		4			
Icteridae	Bahama Oriole (*Icterus northropi*)	CR		5							
	Jamaican Blackbird (*Nesopsar nigerrimus*)	EN							4		
Mimidae	White-breasted Thrasher (*Ramphocinclus brachyurus*)	EN								2	
Parulidae	Whistling Warbler (*Catharopeza bishopi*)	EN									7
Phaenicophilidae	White-winged Warbler (*Xenoligea montana*)	VU				7		4			
Procellariidae	Black-capped Petrel (*Pterodroma hasitata*)	EN				1		3			
Psittacidae	Black-billed Amazon (*Amazona agilis*)	VU							5		
	Red-necked Amazon (*Amazona arausiaca*)	VU			2						
	Yellow-billed Amazon (*Amazona collaria*)	VU							8		
	St Vincent Amazon (*Amazona guildingii*)	VU									7
	Imperial Amazon (*Amazona imperialis*)	EN			2						
	Hispaniolan Amazon (*Amazona ventralis*)	VU				15		2			
	Saint Lucia Amazon (*Amazona versicolor*)	VU								2	
	Hispaniolan Parakeet (*Psittacara chloropterus*)	VU				9		5			
Thraupidae	Saint Lucia Black Finch (*Melanospiza richardsoni*)	EN								5	
Turdidae	Forest Thrush (*Turdus lherminieri*)	VU			2					1	
	La Selle Thrush (*Turdus swalesi*)	VU				6		3			

5.1.3 Reptiles

Of the 186 threatened reptile species in the Caribbean, 118 occur in the countries eligible for CEPF investment. Of these, 57 have been recorded in at least one KBA. Fifty-two reptiles trigger the KBA criteria: 21 Critically Endangered; 18 Endangered; and 13 Vulnerable (Table 5.5). Several reptile species have been not proposed for any KBA, and this must be recognized as an information gap in the ecosystem profile, given the large number of threatened and endemic reptile species. This gap may be partially explained by two things. First, although a major Red List assessment for this group was published in 2017, it is possible that the results had not yet been incorporated into on-the-ground practice at the time of the ecosystem profile consultations, causing some species now classified as threatened to go unnoticed and not be proposed as trigger species. Second, there is relatively scarce information available for some species compared to other groups, although this is changing quickly, particularly in a number of Lesser Antilles countries, such as Antigua and Barbuda, Barbados and Saint Lucia, where there are important efforts to conserve these species.

Families under-represented in this update include the Amphisbaenidae, Anguidae, Dipasadidae, Leptothyphlopidae, Scinidae, Sphaerodactylidae (the family with the largest number of species missing), Tropiduridae and Typhlopidae. Groups adequately represented in KBAs include the most well known families, such as turtles and iguanas, which had been assessed by IUCN previously, and therefore, were also included in the previous ecosystem profile. As expected due to the nature of some species (many restricted to single islands), most of the reptiles in the Caribbean have been reported in one or a very few sites, except for turtles (mostly marine but also one terrestrial species), some boas and snakes, many of the iguanas, American crocodile (*Crocodylus acutus*) and sliders. A total of 11 species of Critically Endangered or Endangered reptiles are confined to a single site and, therefore, trigger AZE sites: Cayemite long-tailed amphisbaena (*Amphisbaena caudalis* - EN), Cayemite short-tailed amphisbaena (*A. cayemite* - CR), Conception Bank silver boa (*Chilabothrus argentum* - CR), Redonda anole (*Anolis nubilis* - CR), Antiguan racer (*Alsophis antiguae* - CR), Saint Lucia Racer (*Erythrolamprus ornatus* - CR), Jamaican iguana (*Cyclura collie* – CR), Union Island gecko (*Gonatodes daudini* - CR), spotted agave geckolet (*Sphaerodactylus ladae* - EN), Redonda ameiva (*Pholidoscelis atratus*- CR) and Alto Velo curlytail lizard (*Leiocephalus altavelensis* - CR).

Table 5.5 Globally Threatened Reptiles by Country and Number of KBAs (CEPF-eligible Countries Only)

Family	Species	IUCN Red List	Antigua	Bahamas	Barbados	Dominican Republic	Dominica	Grenada	Haiti	Jamaica	Saint Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines
Amphisbaenidae	Cayemite Long-tailed Amphisbaena (*Amphisbaena caudalis*)	EN							1				
	Cayemite Short-tailed Amphisbaena (*Amphisbaena cayemite*)	CR							1				
Anguidae	Bromeliad Galliwasp (*Celestus fowleri*)	VU								1			
	Giant Hispaniolan Galliwasp (Celestus warreni)	VU							8				
Boidae	Conception Bank Silver Boa (*Chilabothrus argentum*)	CR		1									
	Jamaican Boa (*Chilabothrus subflavus*)	VU								7			

Family	Species	IUCN Red List	Antigua	Bahamas	Barbados	Dominican Republic	Dominica	Grenada	Haiti	Jamaica	Saint Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines
Cheloniidae	Loggerhead Turtle (*Caretta caretta*)	VU		1									
	Hawksbill Turtle (*Eretmochelys imbricata*)	CR	1		4								
Colubridae	St Vincent Blacksnake (*Chironius vincenti*)	CR											6
Crocodylidae	American Crocodile (*Crocodylus acutus*)	VU				2			4	3			
Dactyloidae	Tiburon Stout Anole (*Anolis haetianus*)	EN							1				
	Saint Lucia Anole (*Anolis luciae*)	EN										7	
	Redonda Anole (*Anolis nubilis*)	CR	1										
Dermochelyidae	Leatherback (*Dermochelys coriacea*)	VU			1			2			1		
Dipsadidae	Antiguan Racer (*Alsophis antiguae*)	CR	1										
	Saint Lucia Racer (*Erythrolamprus ornatus*)	CR										1	
	Hispaniola Racer (*Haitiophis anomalus*)	VU				2							
	Barreras Fanged Snake (*Ialtris agyrtes*)	EN				1							
Emydidae	Hispaniolan Slider (*Trachemys decorata*)	VU				4			3				
	Cat Island Freshwater Turtle (*Trachemys terrapen*)	VU		2						10			
Iguanidae	Turks and Caicos Rock Iguana (*Cyclura carinata*)	CR		1									
	Jamaican Iguana (*Cyclura collei*)	CR								1			
	Rhinoceros Iguana (*Cyclura cornuta*)	VU				11			11				
	Northern Bahamian Rock Iguana (*Cyclura cychlura*)	VU		7									
	Ricord's Iguana (*Cyclura ricordii*)	CR				3			1				
	Central Bahamian Rock Iguana (*Cyclura rileyi*)	EN		7									
	Lesser Antillean Green Iguana (*Iguana delicatissima*)	EN					2						
Leiocephalidae	East Plana Curlytail Lizard (*Leiocephalus greenwayi*)	VU		1									
Leptotyphlopidae	Martin Garcia Threadsnake (*Mitophis asbolepis*)	CR				1							
	Samana Threadsnake (*Mitophis calypso*)	CR				1							
	Saint Lucia Threadsnake (*Tetracheilostoma breuili*)	EN										4	
	Barbados Threadsnake (*Tetracheilostoma carlae*)	CR			1								

Family	Species	IUCN Red List	Antigua	Bahamas	Barbados	Dominican Republic	Dominica	Grenada	Haiti	Jamaica	Saint Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines
Phyllodactylidae	Dominican Leaf-toed Gecko (*Phyllodactylus hispaniolae*)	EN				1							
	Barbados Leaf-toed Gecko (*Phyllodactylus pulcher*)	CR			2								
Scincidae	Jamaican Skink (*Spondylurus fulgida*)	EN								1			
Sphaerodactylidae	Union Island gecko (*Gonatodes daudini*)	CR											1
	Cochran's Least Gecko (*Sphaerodactylus cochranae*)	CR				1							
	Bakoruco Least Gecko (*Sphaerodactylus cryphius*)	EN				2							
	Grenadines Sphaero (*Sphaerodactylus kirbyi*)	VU											1
	Spotted Agave Geckolet (*Sphaerodactylus ladae*)	EN				1							
	Martin Garcia Geckolet (*Sphaerodactylus perissodactylius*)	EN				1							
	Pedernales Least Gecko (*Sphaerodactylus randi*)	EN				1							
	Samana Least Gecko (*Sphaerodactylus samanensis*)	CR				1							
	Neiba Agave Sphaero (*Sphaerodactylus schuberti*)	CR				1							
	Cockpit Eyespot Sphaero (*Sphaerodactylus semasiops*)	EN								1			
	Barahona Limestone Sphaero (*Sphaerodactylus thompsoni*)	EN				1							
Teiidae	Saint Lucian Whiptail (*Cnemidophorus vanzoi*)	CR										3	
	Redonda Ameiva (*Pholidoscelis atratus*)	CR	1										
Tropiduridae	Alto Velo Curlytail Lizard (*Leiocephalus altavelensis*)	CR				1							
Typhlopidae	Grenada Bank Blindsnake (*Amerotyphlops tasymicris*)	EN											1
	Barahona Peninsula Blindsnake (*Typhlops syntherus*)	EN				1							
Viperidae	Saint Lucia Lancehead (*Bothrops caribbaeus*)	EN										5	

5.1.4 Amphibians

Seventy-eight of the Caribbean's 146 threatened amphibian species occur in the eligible countries. Sixty-one of these species trigger KBA criteria. The threat status of these species is as follows: 29 Critically Endangered, 24 Endangered and eight Vulnerable (Table 5.6). As with reptiles, there are notable information gaps for amphibians in this profile: the presence of 19 threatened amphibian species has not been confirmed at any KBA. The amphibian species not confirmed at any KBA include two members of

the Bufonidade family (endemic to the Dominican Republic), three members of the Dactyloidae (endemic to The Bahamas, Saint Lucia and Antigua and Barbuda), and 14 species of the Eleutherodactylidae, all of them endemic to Hispaniola (nine to Haiti only) and Jamaica.

Amphibians are highly range-restricted in the hotspot, so most species are limited to fewer than three KBAs, with some notable exceptions in Jamaica and Hispaniola, where some species have been recorded at up to 20 sites. Given the relatively large size of the Greater Antilles, this situation is not unexpected. Two Critically Endangered amphibian species are restricted to a single site and, therefore, trigger the AZE criteria: *Eleutherodactylus caribe* and *E. sisyphodemus.*

Table 5.6 Globally Threatened Amphibians by Country and Number of KBAs (CEPF-eligible Countries Only)

Family	Species	IUCN Red List	Dominican Republic	Dominica	Grenada	Haiti	Jamaica	St. Vincent and the Grenadines
Bufonidae	Southern Crested Toad (*Peltophryne guentheri*)	VU	5			1		
Craugastoridae	*Pristimantis euphronides*	EN			2			
	Pristimantis shrevei	EN						3
Eleutherodactylidae	Barahona Rock Frog (*Eleutherodactylus alcoae*)	EN	3					
	Haitian Robber Frog (*Eleutherodactylus amadeus*)	CR				2		
	Eleutherodactylus amplinympha	EN		1				
	Jamaican Rumpspot Frog (*Eleutherodactylus andrewsi*)	EN					1	
	Apostates Robber Frog (*Eleutherodactylus apostates*)	CR				1		
	Baoruco Hammer Frog (*Eleutherodactylus armstrongi*)	EN	2					
	South Island Telegraph Frog (*Eleutherodactylus audanti*)	VU	7			3		
	Eleutherodactylus auriculatoides	EN	6					
	Short-nosed Green Frog (*Eleutherodactylus brevirostris*)	CR				1		
	Eleutherodactylus caribe	CR				1		
	Eleutherodactylus cavernícola	CR					1	
	Eleutherodactylus corona	CR				1		
	Eleutherodactylus counouspeus	EN				1		
	Eleutherodactylus dolomedes	CR				1		
	Les Cayes Robber Frog (*Eleutherodactylus eunaster*)	CR				1		
	Fowler's Robber Frog (*Eleutherodactylus fowleri*)	CR	1					
	La Selle Red-legged Frog (*Eleutherodactylus furcyensis*)	CR	1					
	Eleutherodactylus fuscus	CR					1	
	Doris' Robber Frog (*Eleutherodactylus glandulifer*)	CR				1		
	Eleutherodactylus glaphycompus	EN				4		
	Eleutherodactylus grabhami	EN					1	
	Eleutherodactylus griphus	CR					1	

Family	Species	IUCN Red List	Dominican Republic	Dominica	Grenada	Haiti	Jamaica	St. Vincent and the Grenadines
	Eleutherodactylus haitianus	EN	2					
	Half-stripe Bromeliad Frog (*Eleutherodactylus heminota*)	EN	2			6		
	Baoruco Burrowing Frog (*Eleutherodactylus hypostenor*)	EN	2					
	Eleutherodactylus jamaicensis	EN					2	
	La Selle Dusky Frog (*Eleutherodactylus jugans*)	CR	1			1		
	Eleutherodactylus junori	CR					2	
	Southern Pastel Frog (*Eleutherodactylus leoncei*)	CR	2					
	Eleutherodactylus luteolus	EN					2	
	Eleutherodactylus minutus	EN	4					
	Eleutherodactylus montanus	EN	4					
	Spiny Giant Frog (*Eleutherodactylus nortoni*)	CR	2			2		
	Rednose Robber Frog (*Eleutherodactylus oxyrhyncus*)	CR	1			3		
	Independencia Robber Frog (*Eleutherodactylus parabates*)	CR	1			1		
	Casillon Robber Frog (*Eleutherodactylus parapelates*)	CR				1		
	Eleutherodactylus patriciae	EN	4					
	Paulson's Robber Frog (*Eleutherodactylus paulsoni*)	CR				4		
	Eleutherodactylus pentasyringos	VU					1	
	Hispaniolan Yellow-mottled Frog (*Eleutherodactylus pictissimus*)	VU	5			1		
	Eleutherodactylus pituinus	EN	4					
	Eleutherodactylus poolei	CR				1		
	Eleutherodactylus probolaeus	EN	3					
	Eleutherodactylus rhodesi	CR				1		
	Red-legged Robber Frog (*Eleutherodactylus rufifemoralis*)	CR	2					
	Eleutherodactylus ruthae	EN	5					
	Foothill Robber Frog (*Eleutherodactylus semipalmatus*)	CR	1			1		
	Eleutherodactylus sisyphodemus	CR					1	
	Eleutherodactylus thorectes	CR				1		
	Eleutherodactylus ventrilineatus	CR				1		
	Tiburon Whistling Frog (*Eleutherodactylus wetmorei*)	VU	4			3		
Hylidae	Hispaniolan Green Treefrog (*Hypsiboas heilprini*)	VU	3			1		
	Jamaican Snoring Frog (*Osteopilus crucialis*)	EN					2	
	Yellow Bromeliad Frog (*Osteopilus marianae*)	EN					1	

Family	Species	IUCN Red List	Dominican Republic	Dominica	Grenada	Haiti	Jamaica	St. Vincent and the Grenadines
	Hispaniolan Yellow Treefrog (*Osteopilus pulchrilineatus*)	VU	6			8		
	Hispaniolan Giant Treefrog (*Osteopilus vastus*)	VU	4					
	Green Bromeliad Frog (*Osteopilus wilderi*)	EN					4	
Leptodactylidae	Mountain Chicken (*Leptodactylus fallax*)	CR		1				

5.1.5 Freshwater and Nearshore Marine Fish

There is still a major gap in biodiversity knowledge about bony fishes in the Caribbean. There are about about 1,600 species in the region. Twenty-nine of the 33 threatened fish species occurring in the eligible countries are not endemic to the Caribbean and have large distributions and some sort of commercial value (for example, tuna, seahorses and groupers). Many endemic fish species either have not been assessed for their global Red List status (i.e., many of the Poeciliidae family) or available assessments need updating (for example, Domingo mosquito fish was assessed most recently in 2009 and Nassau grouper in 2003).

The application of the KBA criteria in this profile was limited to globally threatened species but only approximately 2 percent of all fish species globally are classified as threatened. The current results for fish species should, therefore, be considered preliminary. Of the 33 globally threatened fish species in CEPF-eligible countries, just five species (four Endangered and one Vulnerable) trigger the KBA criteria (Table 5.7).

Table 5.7 Globally Threatened Fish by Country and Number of KBAs (CEPF-eligible Countries Only)

Family	Species	IUCN Red List	Bahamas	Dominican Republic	Haiti
Anguillidae	American Eel (*Anguilla rostrata)*	EN			1
Bythitidae	Lucayan Cave Brotula (*Lucifuga lucayana)*	EN	1		
Bythitidae	Bahama Cavefish (*Lucifuga spelaeotes)*	VU	1		
Epinephelidae	Nassau Grouper (*Epinephelus striatus)*	EN	2		2
Poeciliidae	Domingo Mosquito Fish (*Gambusia dominicensis)*	EN		1	1

5.1.6 Cartilaginous fishes

Of a total of 16 threatened cartilaginous fish species that occur in the CEPF-eligible countries, only one species, smalltooth sawfish (CR), triggered a KBA during this profiling exercise. As with bony fishes, there are important gaps in knowledge about cartilaginous fishes in the hotspot's KBAs.

5.1.7 Reef-forming Corals

There are 11 threatened species of corals (Anthozoa) and fire corals (Hydrozoa) in the CEPF-eligible countries. Nine have been reported in KBAs in Antigua and Barbuda, The Bahamas, the Dominican Republic and Haiti: two Critically Endangered, one Endangered and six Vulnerable species. Despite the

importance of corals in the region, several data-related issues prevented the application of the KBA criteria during the ecosystem profiling process. Therefore, no KBAs were triggered by any coral species. See Appendix 2 for more information on the KBA methodology.

Some of the sites proposed by stakeholders as KBAs for coral species, such as North East Marine Management Area and Fitches Creek Bay in Antigua and Barbuda, Aire Protégée de Ressources Naturelles Gérées des Trois Baies in Haiti and Exuma Cays Land and Sea Park in Bahamas will surely trigger the KBA criteria based on corals, once the data issues can be resolved. Other coastal sites not triggered as KBAs by any other species at this time will likely be added to the KBA landscape in the near future.

5.1.8 Seed Plants

Four classes of seed plants (cycads, conifers, monocotyledons and dicotyledons) with about 11,000 species occur in the hotspot but only 268 species occurring in the CEPF-eligible countries have been assessed at the global level. Of the threatened seed plant species in the CEPF-eligible countries, 179 trigger the KBA criteria: 32 Critically Endangered; 54 Endangered; and 93 Vulnerable (Table 5.8). One hundred and twenty-six of these species are endemic to Jamaica, where a global Red List assessment for plants was carried out in 1998. Most seed plant species are found at fewer than 10 KBAs, with 110 species reported for one site only. Only species of some economic interest and with a wide distribution in the region, such as Spanish cedar (*Cedrela odorata* - VU), have been reported from a relatively large number of sites but lack of population figures have not allowed for the confirmation of any KBA criteria for most of those species.

With approximately 11,000 species and high levels of endemism[12], plants are one of the most important taxa in terms of biological diversity in the hotspot but there are considerable gaps in knowledge that need to be fillled. Given the relatively low number of species assessed, the available information is incomplete and reflects a bias towards Jamaica. Not withstanding the small proportion of plant species assessed, the contribution of plants to the identification of KBAs is notable: 10 sites are confirmed as KBAs by plant species alone, and 17 species trigger AZE sites.[13]

Table 5.8 Globally Threatened Seed Plants by Country and Number of KBAs (CEPF-eligible Countries Only)

Class	Family	Species	IUCN Red List	Bahamas	Dominican Republic	Dominica	Haiti	Jamaica	Saint Lucia
Magnoliopsida	Anacardiaceae	*Comocladia cordata*	VU					2	
		Comocladia parvifoliola	CR					1	
	Annonaceae	Wild Sour Sop *(Annona praetermissa)*	VU					1	

[12] Endemism is a nested concept. Species can be endemic to the hotspot as a whole, individual islands (or island groups) within the hotspot or individual sites on islands; the ecosystem profile specifies the scale at which endemism applies in each case.

[13] The 17 plant species that trigger AZE sites comprise one Endangered species, *Zamia lucayana*, and 16 Critically Endangered species: *Comocladia parvifoliola; Consolea falcata; Maytenus harrisii; Ardisia byrsonimae; Calyptranthes acutissima; Eugenia aboukirensis; Eugenia polypora; Eugenia rendlei; Cassipourea subcordata; Cassipourea subsessilis; Exostema orbiculatum; Psychotria bryonicola; Psychotria hanoverensis; Rondeletia cincta; Spathelia coccinea*; and *Podocarpus urbanii.*

Class	Family	Species	IUCN Red List	Bahamas	Dominican Republic	Dominica	Haiti	Jamaica	Saint Lucia
	Apocynaceae	*Strempeliopsis arborea*	VU					1	
		Tabernaemontana ochroleuca	VU					1	
		Tabernaemontana ovalifolia	EN					1	
	Aquifoliaceae	*Ilex jamaicana*	EN					1	
		Ilex subtriflora	CR					1	
	Araliaceae	*Dendropanax blakeanus*	VU					1	
		Dendropanax cordifolius	CR					1	
		Dendropanax grandiflorus	CR					1	
		Schefflera troyana	VU					2	
	Bignoniaceae	*Catalpa brevipes*	VU				3		
		Ekmanianthe longiflora	EN		3		4		
	Boraginaceae	*Cordia harrisii*	VU					1	
		Rochefortia acrantha	VU					1	
		Varronia clarendonensis	VU					3	
	Burseraceae	*Bursera aromatica*	VU					1	
		Bursera hollickii	EN					2	
	Buxaceae	*Buxus arborea*	VU					1	
	Cactaceae	*Consolea falcata*	CR				1		
		Consolea spinosissima	EN					2	
		Leptocereus paniculatus	VU		1				
		Pereskia portulacifolia	VU		1				
		Pereskia quisqueyana	CR		2				
		Pseudorhipsalis alata	EN					2	
	Caprifoliaceae	*Viburnum arboreum*	VU					1	
	Celastraceae	*Maytenus harrisii*	CR					1	
		Tetrasiphon jamaicensis	EN					1	
	Compositae	*Verbesina rupestris*	VU					1	
	Cunoniaceae	*Weinmannia portlandiana*	VU					1	
	Erythroxylaceae	*Erythroxylum incrassatum*	VU					2	
		Erythroxylum jamaicense	VU					3	
	Euphorbiaceae	*Acidocroton verrucosus*	VU					2	
		Bernardia trelawniensis	EN					1	
		Gymnanthes glandulosa	VU					1	
		Wild Oil Nut *(Jatropha divaricata)*	VU					4	
		Lasiocroton fawcettii	VU					1	
		Lasiocroton harrisii	VU					1	
		Phyllanthus axillaris	EN					1	
		Phyllanthus cauliflorus	VU					1	
		Phyllanthus eximius	VU					1	

Class	Family	Species	IUCN Red List	Bahamas	Dominican Republic	Dominica	Haiti	Jamaica	Saint Lucia
		Sebastiania alpina	VU					1	
		Sebastiania fasciculata	EN					1	
		Sebastiania spicata	EN					2	
	Flacourtiaceae	*Lunania polydactyla*	VU					2	
		Samyda glabrata	VU					2	
		Xylosma proctorii	VU					1	
	Guttiferae	*Clusia clarendonensis*	VU					2	
		Clusia portlandiana	VU					1	
	Hernandiaceae	*Hernandia catalpifolia*	VU					1	
	Icacinaceae	*Mappia racemosa*	VU				2		
	Juglandaceae	West Indian Walnut *(Juglans jamaicensis)*	VU		1				
	Lauraceae	*Nectandra pulchra*	CR				3		
		Ocotea staminoides	EN					1	
	Leguminosae	*Abarema abbottii*	VU		1				
		Albizia berteriana	VU				3		
		Albizia leonardii	VU				2		
		Calliandra comosa	VU					1	
		Chamaecrista caribaea	VU	2					
		Inga dominicensis	VU			1			
		Mimosa domingensis	VU		3				
		Ormosia jamaicensis	EN					1	
		Senna domingensis	VU		4		1		
		Sophora saxicola	EN					1	
		Cóbana Polisandro *(Stahlia monosperma)*	EN		2				
	Magnoliaceae	*Magnolia dodecapetala*	VU						2
		Magnolia domingensis	CR		1				
		Magnolia ekmanii	CR				1		
		Caimoni *(Magnolia hamorii)*	EN		1				
		Magnolia pallescens	EN		4				
	Malpighiaceae	*Malpighia cauliflora*	EN					1	
		Malpighia harrisii	VU					4	
		Malpighia obtusifolia	VU					2	
	Melastomataceae	*Miconia nubicola*	EN					1	
	Meliaceae	*Guarea jamaicensis*	VU					2	
		Guarea sphenophylla	VU				1		
	Myrsinaceae	*Ardisia brittonii*	EN					1	
		Ardisia byrsonimae	CR					1	
		Wallenia fawcettii	VU					1	

Class	Family	Species	IUCN Red List	Bahamas	Dominican Republic	Dominica	Haiti	Jamaica	Saint Lucia
		Wallenia sylvestris	VU					1	
	Myrtaceae	*Calyptranthes acutissima*	CR					1	
		Calyptranthes capitata	VU					1	
		Calyptranthes discolor	EN					1	
		Calyptranthes ekmanii	VU				1		
		Calyptranthes nodosa	VU					1	
		Eugenia abbreviata	EN					1	
		Eugenia aboukirensis	CR					1	
		Eugenia acutisepala	EN					1	
		Eugenia brownei	VU					1	
		Eugenia eperforata	EN					2	
		Eugenia heterochroa	VU					2	
		Eugenia lamprophylla	VU					2	
		Eugenia laurae	EN					1	
		Eugenia polypora	CR					1	
		Eugenia rendlei	CR					1	
		Eugenia sachetae	EN					1	
		Eugenia schulziana	VU					2	
		Mitranthes macrophylla	CR					1	
		Mitranthes nivea	EN					2	
		Myrcia calcicola	VU					1	
		Pimenta haitiensis	VU		1				
		Wild Pimento *(Pimenta obscura)*	VU					2	
		Pimenta richardii	EN					1	
	Ochnaceae	*Ouratea elegans*	CR					1	
	Olacaceae	*Schoepfia harrisii*	VU					3	
	Pentaphylacaceae	*Cleyera bolleana*	VU		2				
		Cleyera vaccinioides	VU		1				
		Ternstroemia bullata	CR					1	
		Ternstroemia calycina	EN					2	
		Ternstroemia glomerata	CR					1	
		Ternstroemia howardiana	VU					1	
	Piperaceae	*Peperomia simplex*	VU					2	
	Plumbaginaceae	Heather *(Limonium bahamense)*	EN		2				
	Polygonaceae	*Coccoloba proctorii*	EN					1	
		Coccoloba troyana	VU					2	
	Rhamnaceae	*Auerodendron jamaicense*	VU					1	
		Colubrina obscura	VU					4	

Class	Family	Species	IUCN Red List	Bahamas	Dominican Republic	Dominica	Haiti	Jamaica	Saint Lucia
		Rhamnidium dictyophyllum	EN					1	
	Rhizophoraceae	*Cassipourea brittoniana*	EN					1	
		Cassipourea subcordata	CR					1	
		Cassipourea subsessilis	CR					1	
	Rubiaceae	*Erithalis quadrangularis*	VU					3	
		Exostema orbiculatum	CR					1	
		Exostema triflorum	VU					1	
		Guettarda longiflora	CR					2	
		Hamelia papillosa	VU					1	
		Palicourea wilesii	VU					3	
		Phialanthus jamaicensis	EN					1	
		Phialanthus revolutus	EN					1	
		Portlandia albiflora	CR					1	
		Portlandia harrisii	VU					2	
		Psychotria bryonicola	CR					1	
		Psychotria clarendonensis	EN					2	
		Psychotria clusioides	EN					1	
		Psychotria foetens	VU					1	
		Psychotria hanoverensis	CR					1	
		Psychotria plicata	VU					1	
		Psychotria siphonophora	EN					1	
		Rondeletia adamsii	VU					2	
		Rondeletia amplexicaulis	EN					1	
		Rondeletia brachyphylla	EN					1	
		Rondeletia cincta	CR					1	
		Rondeletia clarendonensis	EN					2	
		Rondeletia hirsuta	VU					1	
		Rondeletia portlandensis	VU					1	
		Scolosanthus howardii	EN					1	
		Stenostomum radiatum	VU		1				
	Rutaceae	*Spathelia coccinea*	CR					1	
		West Indian Satinwood *(Zanthoxylum flavum)*	VU		1				
		Zanthoxylum harrisii	VU					2	
		Zanthoxylum negrilense	EN					1	
	Sapotaceae	*Manilkara excisa*	EN					1	
		Manilkara valenzuelana	VU				1		
		Pouteria hotteana	EN				2		
		Pouteria pallida	EN			1			

Class	Family	Species	IUCN Red List	Bahamas	Dominican Republic	Dominica	Haiti	Jamaica	Saint Lucia
		Contrevent *(Pouteria semecarpifolia)*	VU			1			
		Sideroxylon bullatum	VU					1	
		Sideroxylon dominicanum	VU		1				
	Simaroubaceae	*Alvaradoa jamaicensis*	VU					2	
		Picrasma excelsa	VU				2		
	Solanaceae	*Brunfelsia membranacea*	VU					1	
		Brunfelsia splendida	VU					2	
	Staphyleaceae	*Huertea cubensis*	VU		2		2		
Liliopsida	Orchidaceae	*Acianthera compressicaulis*	EN				1		
	Palmae	*Attalea crassispatha*	CR				3		
		Prickly Pole (*Bactris jamaicana*)	VU					2	
		Copernicia ekmanii	EN				2		
		Pseudophoenix ekmanii	CR		1				
		Pseudophoenix lediniana	CR				1		
Pinopsida	Cupressaceae	West Indies Juniper (*Juniperus barbadensis*)	VU				2		1
		Sabina (*Juniperus gracilior*)	EN		5				
	Pinaceae	Hispaniolan Pine (*Pinus occidentalis*)	EN		5				
	Podocarpaceae	Tachuela (*Podocarpus buchii*)	EN		6		1		
		Podocarpus hispaniolensis	EN		6		1		
		Yacca (*Podocarpus purdieanus*)	EN					2	
		Blue Mountain Yacca (*Podocarpus urbanii*)	CR					1	
Cycadopsida	Zamiaceae	*Zamia erosa*	VU					1	
		Zamia lucayana	EN	1					

5.2 Site Outcomes

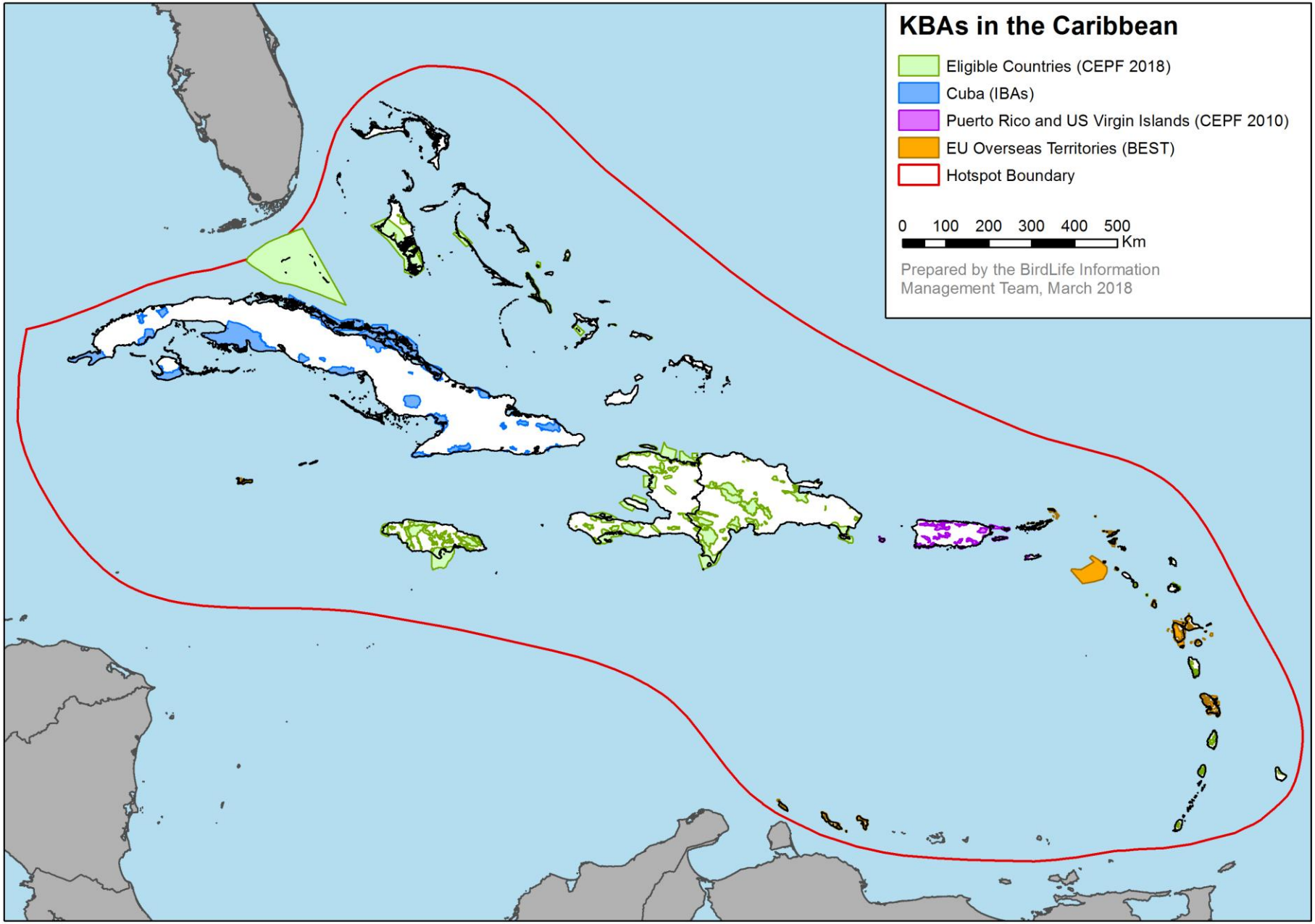
A total of 324 KBAs have been identified in the Caribbean Islands Biodiversity Hotspot thus far, 167 of which are in CEPF-eligible countries (Table 5.9 and Figure 5.1). These sites were identified at different points in time using different methodologies. As a result, there are currently four different datasets for Caribbean KBAs: (i) CEPF-eligible countries; (ii) the EU OCTs; (iii) Cuba, and (iv) Puerto Rico and the US Virgin Islands. The sites in Cuba, the EU OCTs and Puerto Rico and the US Virgin Islands were identified before the new KBA Standard (IUCN 2016) was introduced. At some point in the future, these KBAs should be re-assessed against the new KBA Standard, in order to resolve their global/regional status. The criteria and methodology used to identify KBAs in the CEPF-eligible countries are presented in Appendix 2.

Table 5.9 Summary of Key Biodiversity Areas by Country in the Caribbean Islands Hotspot

Source	Country/Territory	KBAs 2009*	KBAs 2018
CEPF eligible countries	Antigua and Barbuda	10	6
	Bahamas	26	23
	Barbados	4	7
	Dominica	4	4
	Dominican Republic	35	39
	Grenada	9	9
	Haiti	17	30
	Jamaica	38	32
	Saint Kitts and Nevis	1	2
	Saint Lucia	6	7
	St. Vincent and the Grenadines	7	8
Subtotal for CEPF-eligible countries:		**157**	**167**
Cuba	Cuba	28	28
United States OTs	Puerto Rico	28	27
	US Virgin Islands	13	11
EU OCTs	**France**		
	Guadeloupe	8	10
	Martinique	8	8
	St. Barthélemy	4	3
	St. Martin	1	2
	Netherlands		
	Aruba	1	7
	Bonaire	4	6
	Curaçao	0	6
	Saba	1	4
	St. Eustatius	2	3
	Sint. Maarten	0	5
	UK		
	Anguilla	6	5
	Cayman Islands	8	8
	Montserrat	3	6
	Turks and Caicos Islands	11	11
	Virgin Islands	7	7
Totals		**290**	**324**

Notes: *2009 figures included here as a reference only.

Figure 5.1. Key Biodiversity Areas in the Caribbean Island Biodiversity Hotspot



CEPF-eligible countries. One hundred and sixty-seven KBAs were identified in the 11 CEPF-eligible countries (Figures 5.2 to 5.7). The vast majority (157) of these sites had been identified as KBAs under the earlier CEPF ecosystem profiling process (CEPF 2010). Application of the new KBA Standard is a multi-step process, involving pre-assessment, expert review and confirmation by the KBA Secretariat. It was not possible to complete all of these steps during the process to update the ecosystem profile. Therefore, while all of these sites qualify as KBAs, the global/regional status of each awaits confirmation. The final confirmation of the status of these KBAs will only occur when they are entered into the global database of KBAs (http://www.keybiodiversityareas.org); additional expert review may be required at this time.

The analysis for this CEPF ecosystem profile update follows the recently adopted KBA Standard (IUCN 2016). As recommended by the KBA Standard, the baseline for the list of KBAs takes into account new proposals as well as sites from existing initiatives, such as:

- KBAs defined using earlier criteria (e.g. Langhammer *et al*. 2007), such as those defined for the earlier phase of CEPF investment in the Caribbean Islands (CEPF 2010).
- IBAs and AZE sites.
- Protected areas.

Following a desk analysis, a preliminary list of sites to be reviewed as KBAs was generated and shared with national experts (electronically and via an interactive ArcGIS Story Map microsite) and discussed during three national workshops (Dominican Republic, Haiti and Jamaica), and via an online sub-regional consultation for The Bahamas and the eastern Caribbean. During this process, national stakeholders both revised the existing information and provided new data, including polygons for sites, records of species and references. After the pre-assessment of the sites as KBAs (see Section 5.2.1), the list of KBAs with the highest biological values was later reviewed by national expert groups and participants at the regional workshop in Jamaica.

EU OCTs. Ninety-two sites were identified in the EU OCTs through the BEST initiative and are documented in a dedicated ecosystem profile (Vaslet and Renoux 2016, see Figures 5.8 to 5.10). The previous CEPF ecosystem profile identified 64 KBAs in these countries. The 92 sites identified through the BEST initiative followed the previous KBA criteria (Langhammer *et al*. 2007). Because of differences in criteria and methodology between previous the KBA criteria and the current KBA Standard, the results of the BEST process cannot be directly compared with the dataset analyzed in this document for the CEPF-eligible Caribbean countries. The details of the OCT sites can be found at: http://ec.europa.eu/environment/nature/biodiversity/best/regions/caribbean_en.htm.

Cuba. There are 28 KBAs in Cuba (Figure 5.11), all of them based on the IBAs identified in 2008, thus, there is no change in the information presented in the previous ecosystem profile (2010). This KBA dataset is limited to birds only as it was not possible to carry out a detailed KBA analysis for Cuba that incorporates other taxonomic groups. It is important to note that IBAs qualify as KBAs due to their importance for global biodiversity and that the sites provide habitat for other species that may also have importance for global biodiversity conservation. Because of differences in criteria and methodology, and the absence of details on taxa other than birds, no comparative analysis can be made with the KBAs included in this document for the cEPF-eligible countries. The details of these 28 Cuban KBAs and their trigger species can be found in the World Database of Key Biodiversity Areas: http://www.keybiodiversityareas.org/site/results?reg=4andcty=53andsnm.

Puerto Rico and the US Virgin Islands. Although this profile update focused on the CEPF-eligible countries, minor updates have been done for Puerto Rico and the US Virgin Islands (Figure 5.12). Puerto Rico currently has 27 KBAs (compared to 28 in 2010), with six sites not qualifying as KBAs and another six sites lacking the information needed to be assessed as KBAs. There are 11 KBAs in the US Virgin Islands, while eight others require more information to be assessed.

The full list of KBAs for the Caribbean Island Biodiversity Hotspot can be found in Appendix 3. The number of KBAs in the hotspot could change as soon as additional information from sites and species not included in this profile becomes available, for example, once the B criteria are applied or when some of the knowledge gaps identified in this analysis are filled (for example, reptiles, some amphibian families, plants, corals, fishes and other taxonomic groups not revised in this profile). Therefore, it is expected that some additional sites will be added to the list of KBAs in the hotspot in the future.

5.2.1 CEPF-eligible Countries

Among the CEPF-eligible countries, those with the greatest numbers of KBAs are the large islands (Jamaica with 32 and Hispaniola with 69) and the multi-island state of The Bahamas (23). This is to be expected, as the principles of island biogeography dictate that the larger and older the island, the greater the species diversity. Higher species diversity on each of the Greater Antilles, combined with greater ecosystem, habitat and altitudinal diversity, has led to large numbers of endemic species, and consequently higher numbers of globally threatened taxa. Archipelagos, such as The Bahamas, result in taxonomic isolation, with globally threatened species occupying very small ranges, which has led to relatively large numbers of KBAs being defined.

The current update of the KBAs in the Caribbean Islands Biodiversity Hotspot not only affected the number of KBAs in the hotspot and their trigger species, it also impacted the delimitation of some of these sites. Some of the changes to the boundaries of sites brought about by the new KBA Standard resulted in splitting a former KBA into several smaller KBAs. Massif La Hotte and Massive La Selle in Haiti, for example, were divided into two and three sites respectively, while other areas in between need to be assessed and possibly defined as KBAs in the future. Other changes meant that adjacent (or nearby) KBAs needed to be merged into a single KBA. Portland Bight Protected Area in Jamaica, for example, previously contained three separate sites. The Blue Mountains and the John Crow Mountains, also in Jamaica, used to be considered as two different sites but have now been merged into a single KBA: Blue and John Crow Mountains Protected National Heritage and surroundings.

The size of the KBAs varies from the small Bethesda Dam in Antigua and Barbuda (less than 2 hectares) to the enormous Cay Sal Marine Management Area in The Bahamas (more than 1.6 million hectares). The mean size for KBAs is 4,500 hectares but the average size at the national level varies from country to country.

The ecosystem profile defines conservation priorities within the Caribbean Islands Hotspot, which is, by definition, a terrestrial region. While no strictly marine KBAs were identified, the boundaries of terrestrial KBAs were extended, where appropriate, to include adjacent coastal and nearshore marine ecosystems, such as fringing reefs and mangroves. In this way, the importance of these ecosystems for biodiversity was recognized, and opportunities to engage civil society in their conservation, for instance through "ridge-to-reef" approaches, were created. Although, the figures for the area covered by KBAs in terrestrial and marine environments are relatively similar (about 27,000 km^2 of marine surface versus

21,000 km^2 of land surface), KBAs cover a significantly greater percentage of land surface in eligible countries (20.6 percent) compared with marine surface (1.6 percent; Table 5.10).

Table 5.10 KBA Land and Marine Area by Country (CEPF-eligible Countries Only)

Country	Country land area[1] (km^2)	Country marine area[2] (km^2)	KBA total area (km^2)	KBA land area (km^2)	KBA marine area (km^2)	KBA land coverage (%)	KBA marine coverage (%)
Antigua and Barbuda	440	111,914	202	58	144	13.2	0.1
Bahamas	13,880	619,938	24,154	3,988	20,166	28.7	3.3
Barbados	430	185,704	68	67	1	15.6	0.0
Dominica	750	28,653	229	224	5	29.9	0.0
Dominican Republic	48,730	351,756	9,576	8,198	1,378	16.8	0.4
Grenada	340	25,670	33	33	0	9.7	0.0
Haiti	27,750	103,818	8,550	4,749	3,802	17.1	3.7
Jamaica	10,990	257,777	5,546	3,900	1,646	35.5	0.6
Saint Kitts and Nevis	360	9,533	13	13	0	3.6	0.0
Saint Lucia	620	15,470	247	230	17	37.1	0.1
St. Vincent and the Grenadines	390	36,381	135	134	1	34.4	0.0
Total	**104,680**	**1,746,614**	**48,753**	**21,594**	**27,160**	**20.6**	**1.6**

Notes: 1 = country land area includes inland water bodies (Heileman 2005); 2 = country marine area relates to the Exclusive Economic Zones (EEZ) given in Flanders Marine Institute (2018).

About 20 percent of all countries' land area is under some sort of formal protection, figures for protected marine area are lower (around 6 percent of the total EEZ area). Only 1 percent of Barbados is under some sort of formal protection, while at the other end of the spectrum, The Bahamas has 35 percent of its land area covered by protected areas, followed by the Dominican Republic with 25 percent.

The protection status of KBAs in the CEPF-eligible countries is relatively high (Table 5.11). Seventy-nine percent of these KBAs overlap with some form of protected area. This is to be expected given the considerable amount of biological information for threatened species available for these sites. There are, however, differences in KBA protection status among CEPF-eligible countries, with some having higher levels of protection and others lower. Eighty percent of the KBAs in Dominican Republic, The Bahamas, and Antigua and Barbuda fall under some form of legal protection, while in Saint Kitts and Nevis and Barbados less than 2 percent of the KBAs are covered by protected areas. In Haiti, 26 percent of KBAs enjoy some form of formal protection. In these last three countries, there are opportunities for using KBAs to support the identification of protected areas or OECMs.

Among CEPF-eligible countries, The Bahamas, the Dominican Republic, St. Vincent and the Grenadines, Dominica, and Antigua and Barbuda have met the goal for Aichi Target 11 on the terrestrial and inland waters (17 percent of the territory under some sort of protection figure, including OECMs). Only the Dominican Republic meets the coastal and marine target (10 percent), positioning KBAs as a useful tool to support the achievement of this target in other hotspot countries.

More than 100 protected areas in the hotspot have not yet been confirmed as KBAs due to a lack of information. It is important to evaluate protected areas in future KBA assessments but is equally important to assess and identify KBAs outside the national systems of protected areas.

Table 5.11 Protected Area and KBA Surface (Land and Marine) (CEPF-eligible Countries Only)

Country	Total Protected Area (ha)	Protected Land Area (ha)	Protected Marine Area (ha)	KBA Total Area (ha)	Total KBA Area under Protection (ha)	KBA Land Area under Protection (ha)	KBA Marine Area under Protection (ha)
Antigua and Barbuda	25,553	8,118	17,435	20,200	17,594	5,291	12,303
The Bahamas	5,208,792	487,051	4,721,740	2,415,400	2,301,403	321,294	1,980,109
Barbados	1,559	464	1,095	6,800	122	109	13
Dominica	17,196	16,139	1,058	22,900	10,066	10,065	0
Dominican Republic	6,059,728	1,216,417	4,843,310	957,600	943,690	807,079	136,611
Grenada	4,043	3,038	1,005	3,300	2,176	2,176	0
Haiti	372,870	187,214	185,656	855,000	225,457	88,847	136,611
Jamaica	361,004	175,495	185,509	554,600	321,732	160,342	161,390
Saint Kitts and Nevis	n/a	n/a	0n/a	1,300	n/a	n/a	n/a
Saint Lucia	13,431	9,758	3,673	24,700	10,879	9,643	1,236
St. Vincent and the Grenadines	17,187	8,928	8,259	13,500	7,387	7,387	0
Total	**12,081,363**	**2,112,622**	**9,968,740**	**4,875,300**	**3,840,506**	**1,412,234**	**2,428,272**

Sources: Data sources for the protected area calculations were the national datasets on protected areas provided by The Bahamas, the Dominican Republic and Haiti, plus the World Database on Protected Areas for the other countries. In the case of Saint Kitts and Nevis, at least five protected areas exist, including a marine management area declared in 2016. However, details on the extent of these areas and the shapefiles needed to analyse extent of overlap with KBAs were not available.

Of the 167 KBAs in CEPF-eligible countries, 93 sites are triggered by reptiles and 85 by seed plants (Table 5.12). Seventy-three sites are triggered by birds, 55 by amphibians, 46 by mammals, seven by fishes (both freshwater and marine) and one by sharks. No KBAs were triggered by corals (see Section 5.1.7).

Table 5.12 Summary of Key Biodiversity Areas by Taxonomic Group in CEPF-eligible Countries

Taxonomic Group	Number of KBAs Triggered	Percentage of KBAs Triggered
Mammals	46	28
Birds	73	44
Reptiles	93	56
Amphibians	55	33
Fish	7	4
Sharks	1	<1
Seed plants	85	51
All KBAs	**167***	**N/A**

Note: * = different taxonomic groups can trigger the KBA criteria for the same site.

On average, each site is triggered by five species or more. However, some KBAs support exceptional numbers of globally threatened species. Sites like Cockpit Country, Blue and John Crow Mountains Protected National Heritage and surroundings, and Litchfield Mountain - Matheson's Run in Jamaica, and Parque Nacional Sierra de Bahoruco in the Dominican Republic stand out. Each of these sites has more than 30 trigger species.

Seventeen KBAs are considered wholly irreplaceable at the global scale because they contain the only known population of one or more globally threatened species (Table 5.13). Since all these sites are irreplaceable for Critically Endangered and Endangered species, they also qualify as AZE sites: the most urgent site-level conservation priorities at the global scale. It is important to note an important difference between the AZE and KBA criteria: Critically Endangered (Possibly Extinct) species can trigger the identification of an AZE site but such species cannot be used for KBA identification. This, plus some discrepancies in the delimitation of the sites, explains the differences between the updated AZE sites and the current dataset of irreplaceable KBAs in the eligible countries. At the time of completing this document, the authors were aware of at least two confirmed AZE sites not included in this profile. A small area of Île la Tortue, Haiti is reported to be the home to a population of Warren's robber frog (*Eleutherodactylus warren* - CR) but this species has not been recorded there since it was first described; this may prevent the confirmation of this site as a KBA. Playa Bayahibe has been confirmed as a KBA for Bayahibe rose (*Pereskia quisqueyana* - CR), the national flower of the Dominican Republic, but if the individuals of this species that are reported to have been introduced in other areas of the country are naturalized, the A1e criterion might not be triggered. For these reasons, the two sites do not appear on the KBA list in this profile.

Table 5.13 Wholly Irreplaceable Sites in the Caribbean Islands Hotspot (CEPF-eligible Countries Only)

Country	Site Name	Species
Antigua and Barbuda	North East Marine Management Area and Fitches Creek Bay	Antiguan Racer *(Alsophis antiguae)*
	Redonda	Redonda Anole (*Anolis nubilis*); Redonda Ameiva (*Pholidoscelis atratus*)
Bahamas	Conception Island National Park	Conception Bank Silver Boa (*Chilabothrus argentum*)
	Long Island and Hog Cay	*Zamia lucayana*
Dominican Republic	Parque Nacional Jaragua	Alto Velo Curlytail Lizard (*Leiocephalus altavelensis*)
	Parque Nacional Sierra Martín García	Spotted Agave Geckolet (*Sphaerodactylus ladae*)
Haiti	Cayemites – Barradères	Cayemite Long-tailed Amphisbaena (*Amphisbaena caudalis);* Cayemite Short-tailed Amphisbaena (*A. cayemite)*
	Dame Marie	*Eleutherodactylus caribe*
	Port-de-Paix	*Consolea falcata*
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Blue Mountain Yacca *(Podocarpus urbanii)*; *Eugenia rendlei; Maytenus harrisii; Psychotria bryonicola*
	Cockpit Country	*Cassipourea subcordata; Eleutherodactylus sisyphodemus; Exostema orbiculatum; Spathelia coccinea*
	Dolphin Head	*Calyptranthes acutissima; Cassipourea subsessilis; Comocladia parvifoliola; Eugenia polypora; Psychotria hanoverensis; Rondeletia cincta*
	Portland Bight Protected Area	Jamaican Iguana *(Cyclura collei)*
	Litchfield Mountain - Matheson's Run	*Eugenia aboukirensis*
	Peckham Woods	*Ardisia byrsonimae*
Saint Lucia	Pointe Sable	*Erythrolamprus ornatus*
St. Vincent and the Grenadines	Chatham Bay, Union Island	*Gonatodes daudini*

Figures 5.2 to 5.7 show the location of the site outcomes (KBAs) in each of the CEPF-eligible countries. Details of the names, size, and criteria met by each site can be found in Appendix 3.1.

Figure 5.2. Site Outcomes in The Bahamas

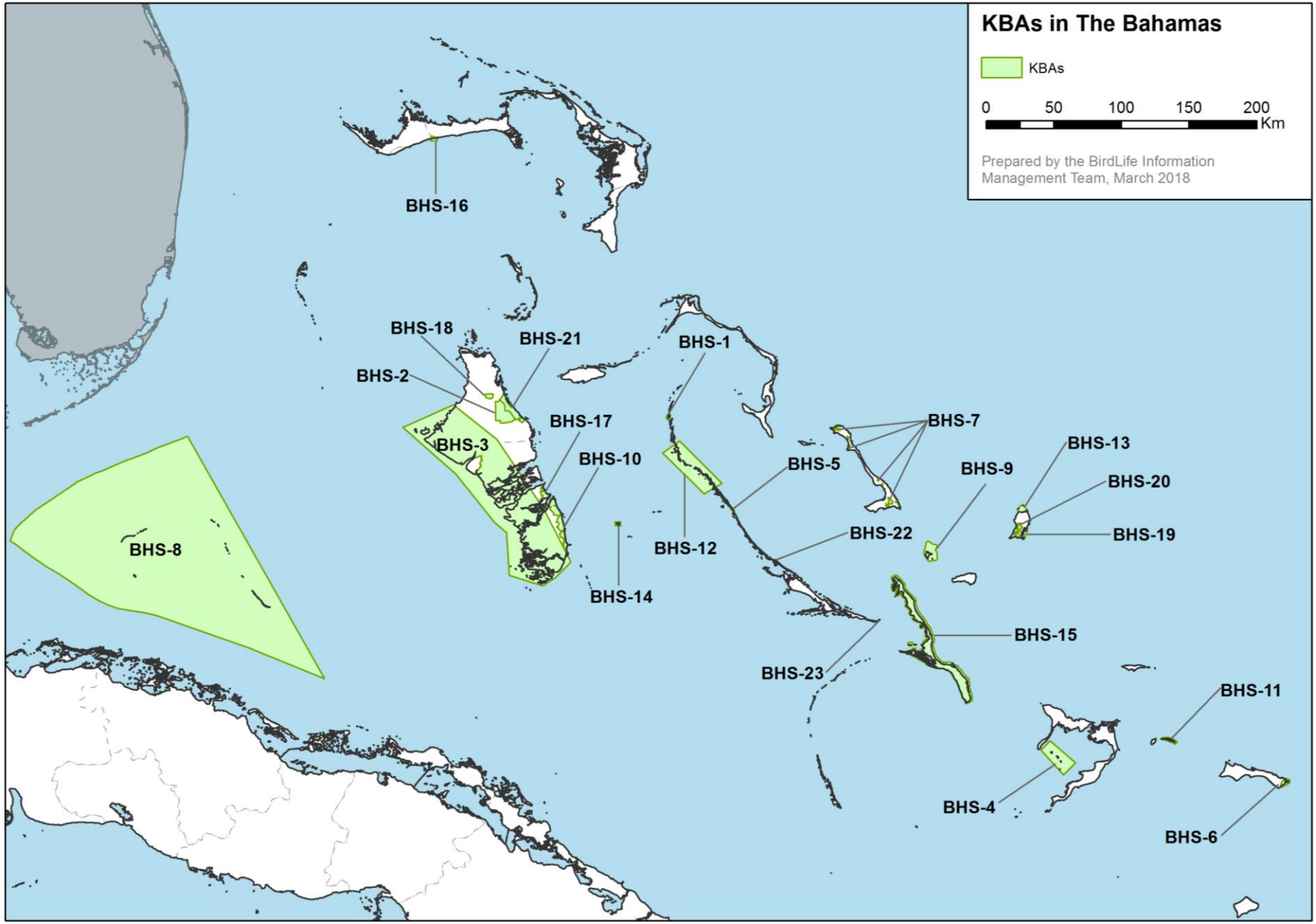


Figure 5.3. Site Outcomes in Jamaica

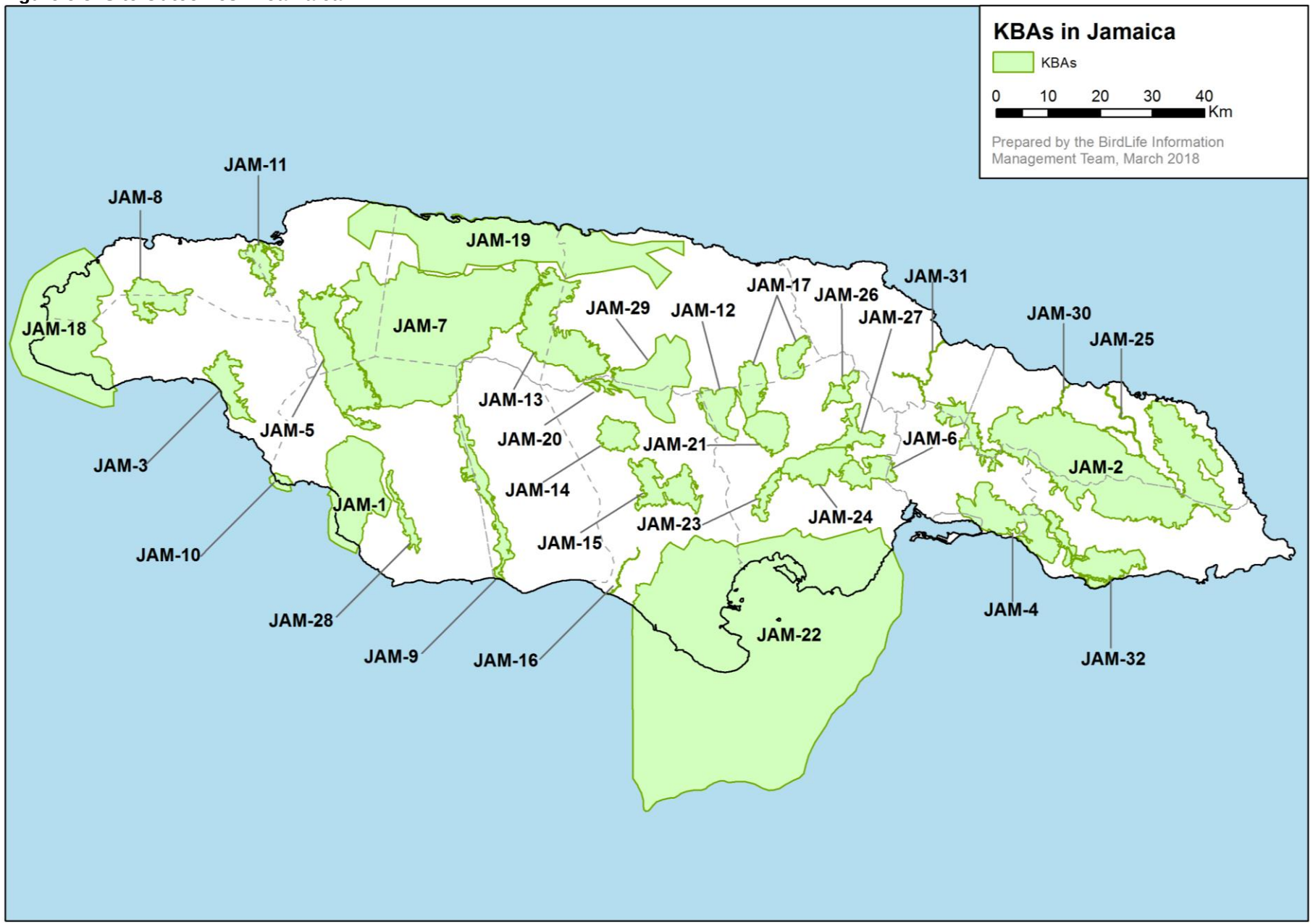


Figure 5.4. Site Outcomes in Haiti

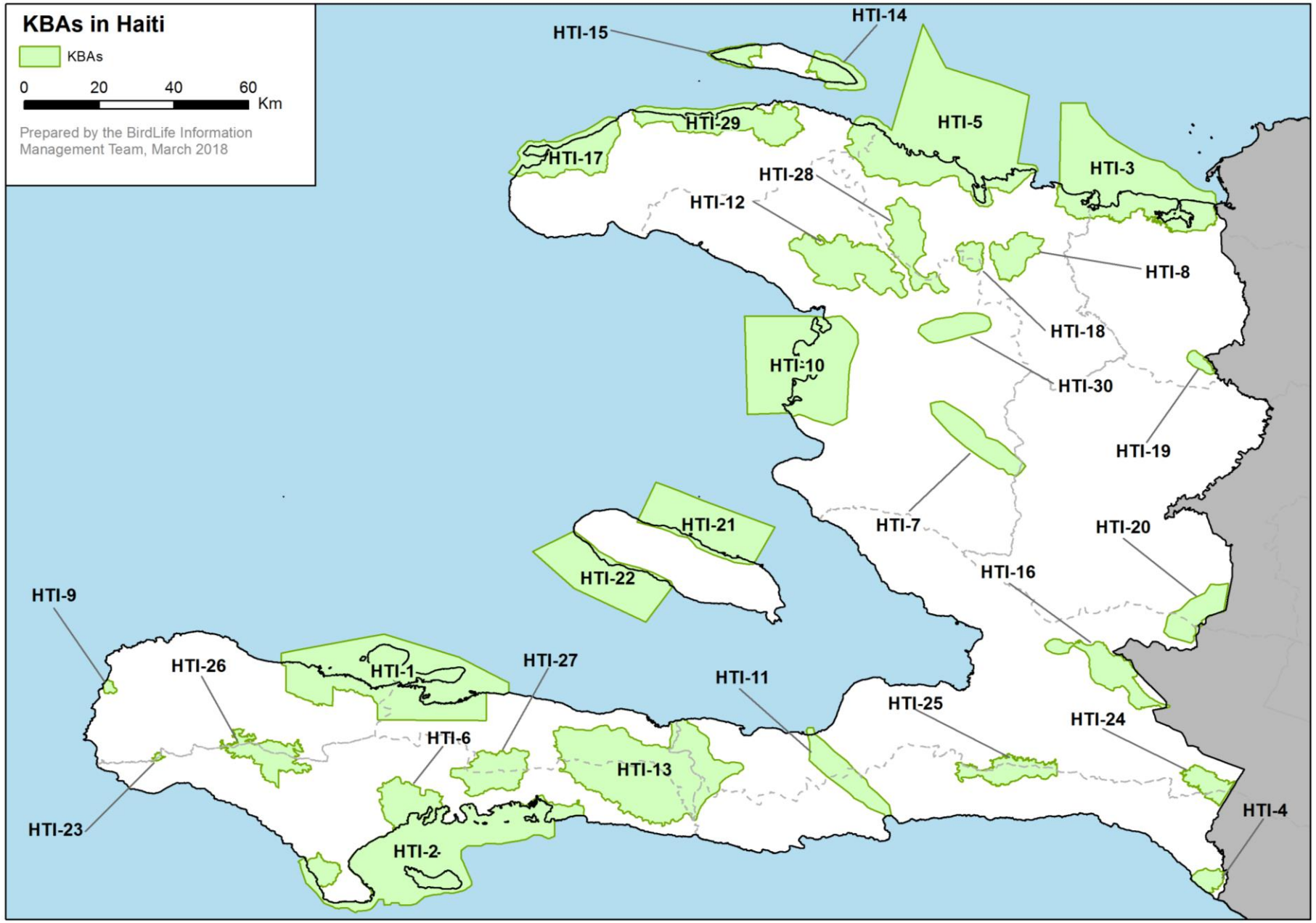


Figure 5.5. Site Outcomes in Dominican Republic

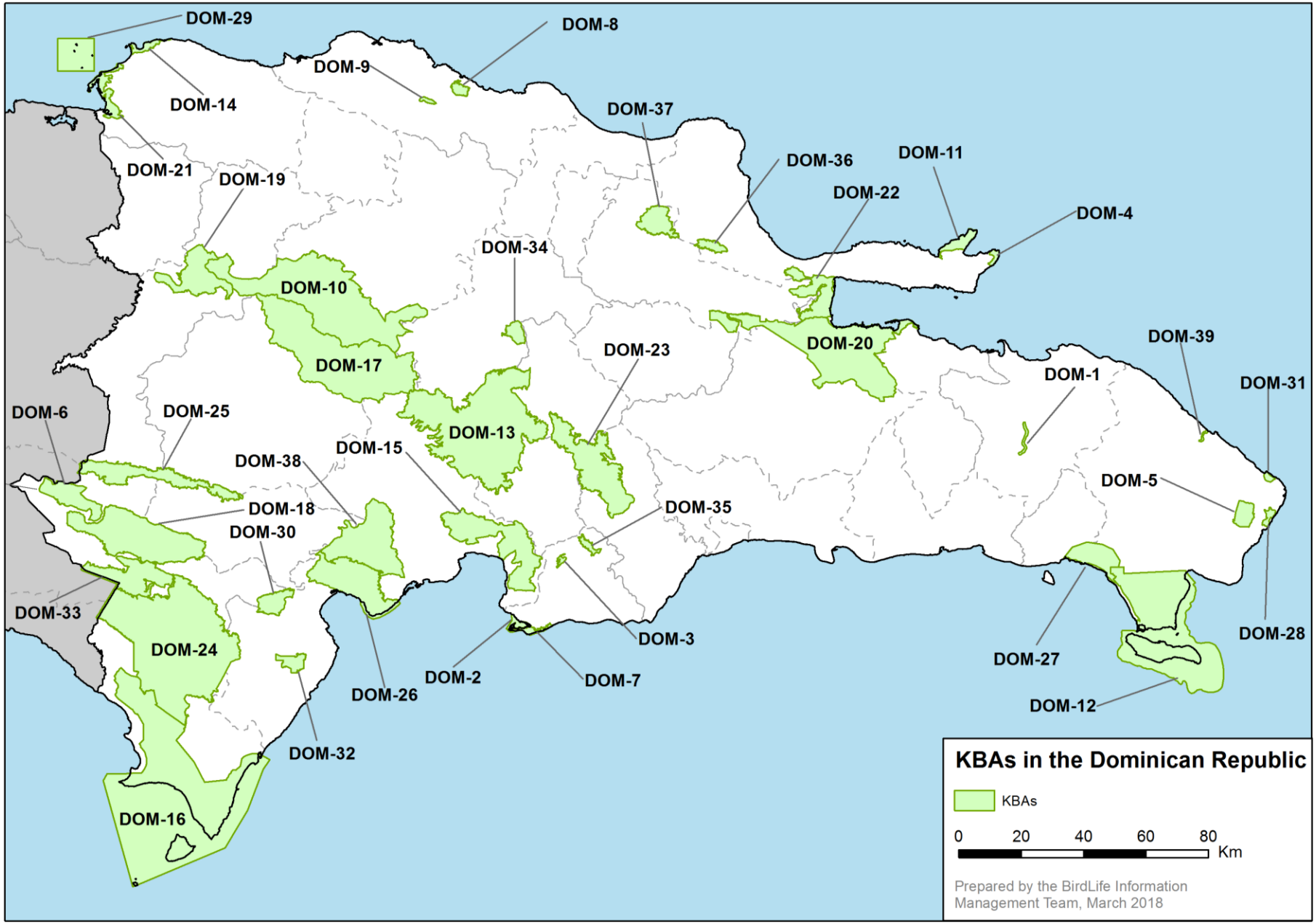


Figure 5.6. Site Outcomes in Saint Kitts and Nevis, Antigua and Barbuda, and Dominica

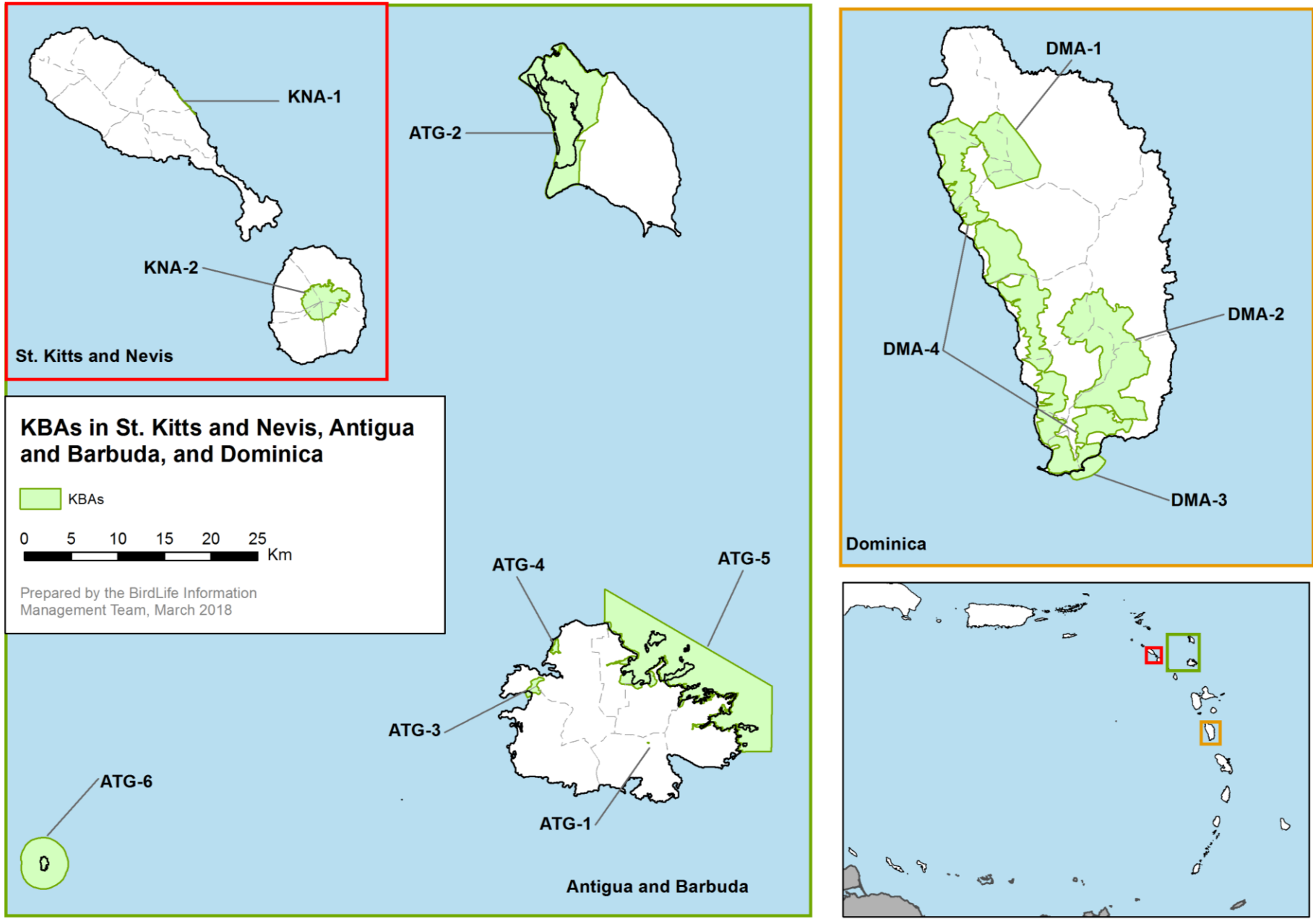
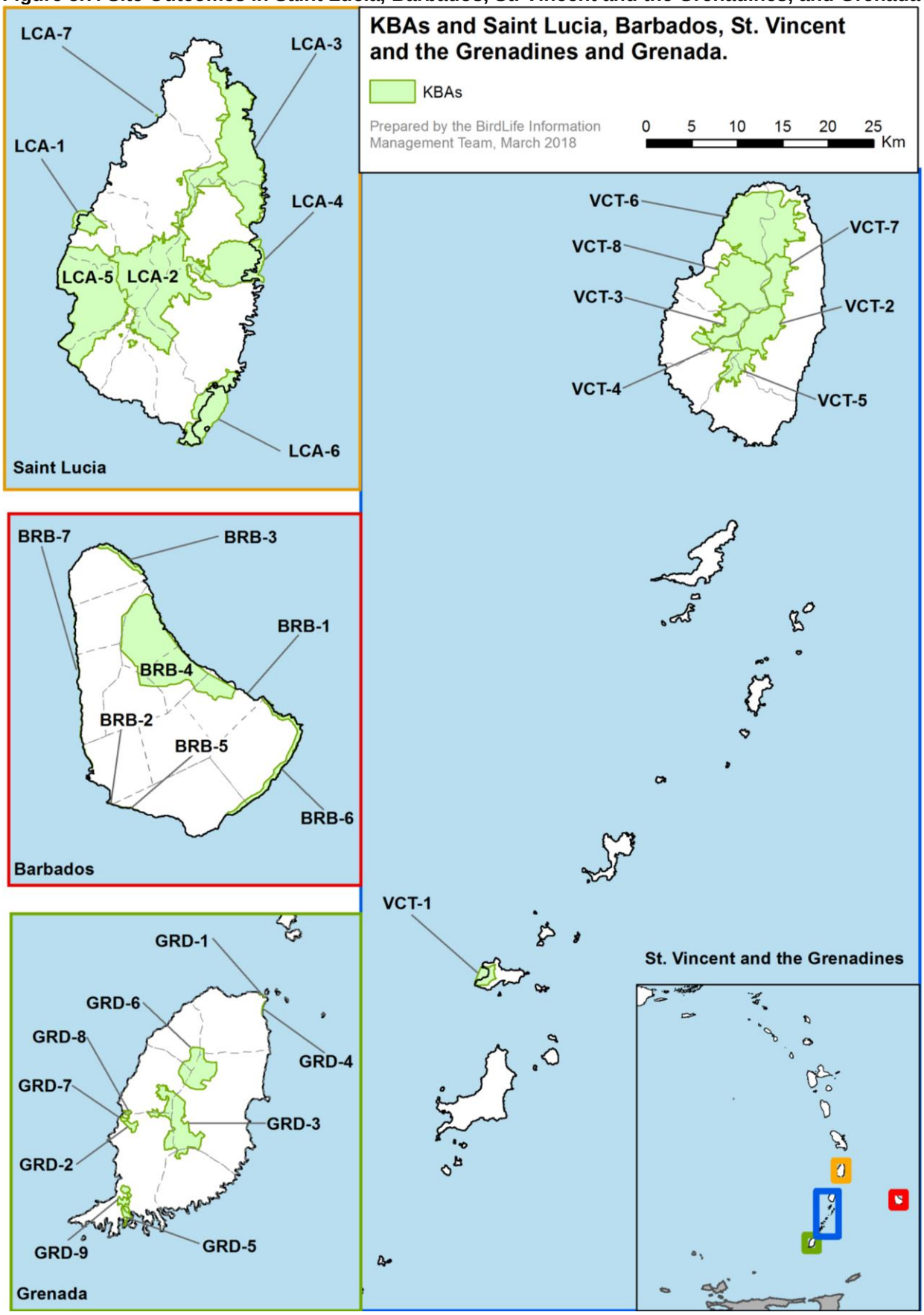


Figure 5.7. Site Outcomes in Saint Lucia, Barbados, St. Vincent and the Grenadines, and Grenada



As the comprehensiveness of available data on the distribution of globally threatened species among KBAs varies significantly among taxonomic groups, KBAs identified as being important for the conservation of one taxonomic group may also be important for other groups for which data are not yet available or for which data were insufficient at the time of the KBA pre-assessment. In addition, there are likely to be other important sites for the conservation of globally threatened species in the region that have not been identified during the process to update the ecosystem profile, especially for plants, reptiles, and marine species (bony and cartilaginous fishes and corals), as well as for non-threatened species that can trigger other KBA criteria, such as non-threatened endemics and congregatory species. It is hoped that additional analysis can fill these data gaps in future.

5.2.2 Site Outcomes for the EU Overseas Countries and Territories and Outermost Regions

The Caribbean region contains various overseas countries and territories and outermost regions of the EU member states France, the Netherlands and the UK. As more than 70 percent of Europe's species are found in the EU overseas countries and territories and outermost regions, the biodiversity of these places has been recognized as being of international importance and crucial for achieving global and regional biodiversity targets.

There are 15 EU islands and island groups in the Caribbean Islands Biodiversity Hotspot. These are the Dutch islands of Aruba, Bonaire, Curaçao, Saba, St. Eustatius and St. Maarten; the French islands of Guadeloupe, Martinique, St. Martin and St. Barthélemy; and the UK islands of Anguilla, British Virgin Islands, Cayman Islands, Montserrat, and the Turks and Caicos Islands. Like the rest of the hotspot, these islands, have highly diverse ecosystems and biomes, resulting from various climatic, topographic, geological and biogeographic patterns (Petit and Prudent 2010). They include wetlands (including mangroves), seagrass meadows, coral reefs, beaches, rivers and streams, tropical grasslands, savannas and shrublands, tropical dry forests, and tropical rainforests.

The regional ecosystem profile prepared under the BEST Initiative identified 92 KBAs, including 42 terrestrial KBAs and 50 marine and coastal KBAs (Vaslet and Renoux 2016). These include 31 KBAs in the Dutch OCTs, 24 in the French outermost regions (ORs) and overseas territories (OTs), and 37 in the UK OTs, covering a combined area of 8,090 km^2. These KBAs take into account 194 globally threatened species, 1,094 endemic and restricted-range species and about 45 species congregating in significant numbers to feed or reproduce, mainly represented by birds and marine mammals. The species list includes 173 vertebrate species, more than 430 invertebrate species and 488 plant species. The EU BEST KBAs encompass freshwater, coastal, marine and terrestrial ecosystems.

EU overseas entities in the Caribbean Islands Hotspot host two sites identified in the 2010 AZE assessment. Montserrat's Centre Hills were designated as an AZE site due to the presence of the endemic and threatened Montserrat oriole (*Icterus oberi*) [14], while the forest ecosystem in Basse-Terre (Guadeloupe) was designated because of the presence of endemic and threatened amphibian species.

[14] Monserrat oriole was classified as Critically Endangered until 2016, when its status was revised and updated to Vulnerable and; therefore, no longer qualifies as a trigger species for AZE sites.

Figure 5.8 Site Outcomes in the Dutch Overseas Territories (Sint Maarten, Sint Eustatius, Saba, Aruba, Curaçao and Bonaire)

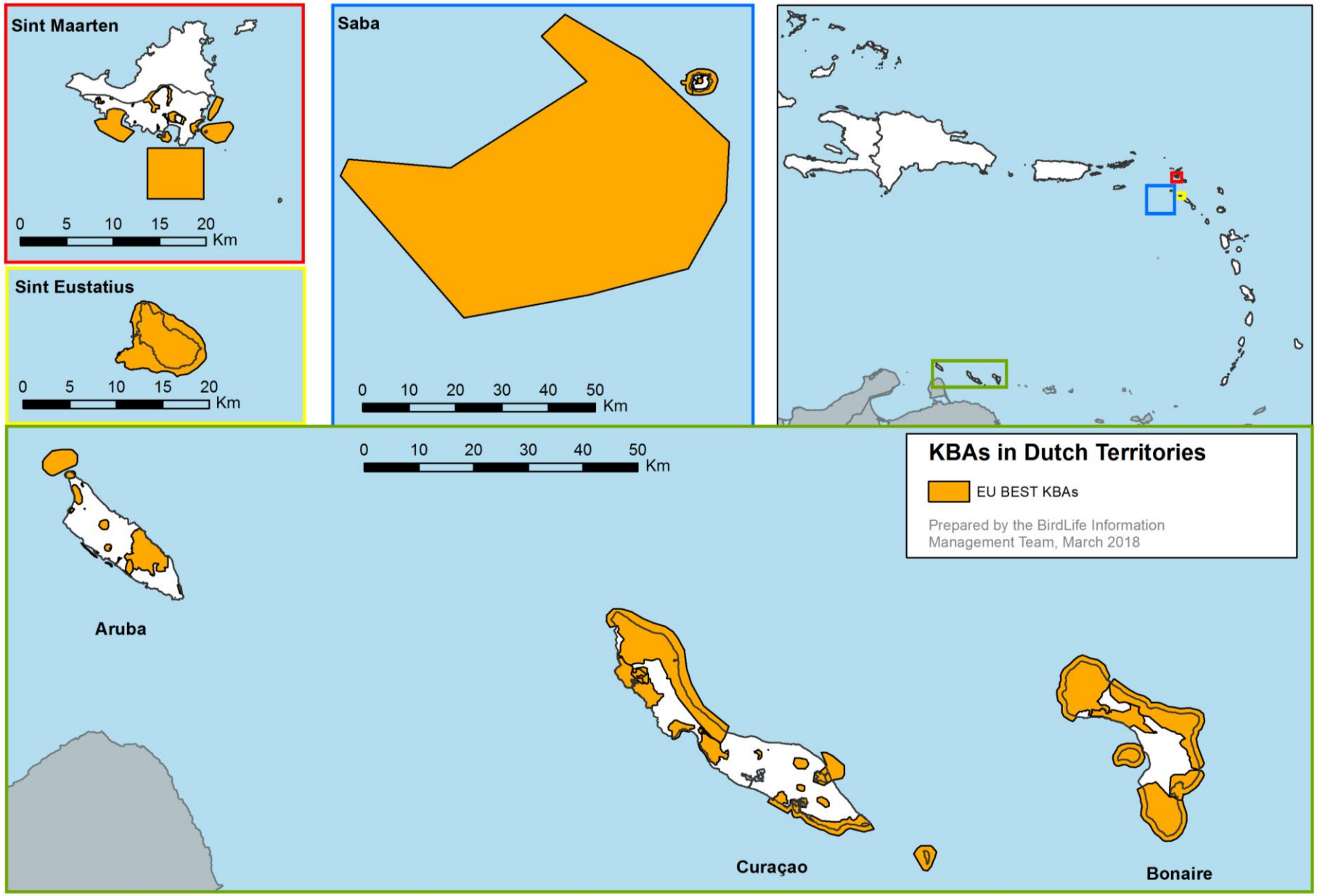


Figure 5.9 Site Outcomes in French Overseas Regions and Territories (Saint Martin, Martinique and Guadeloupe)

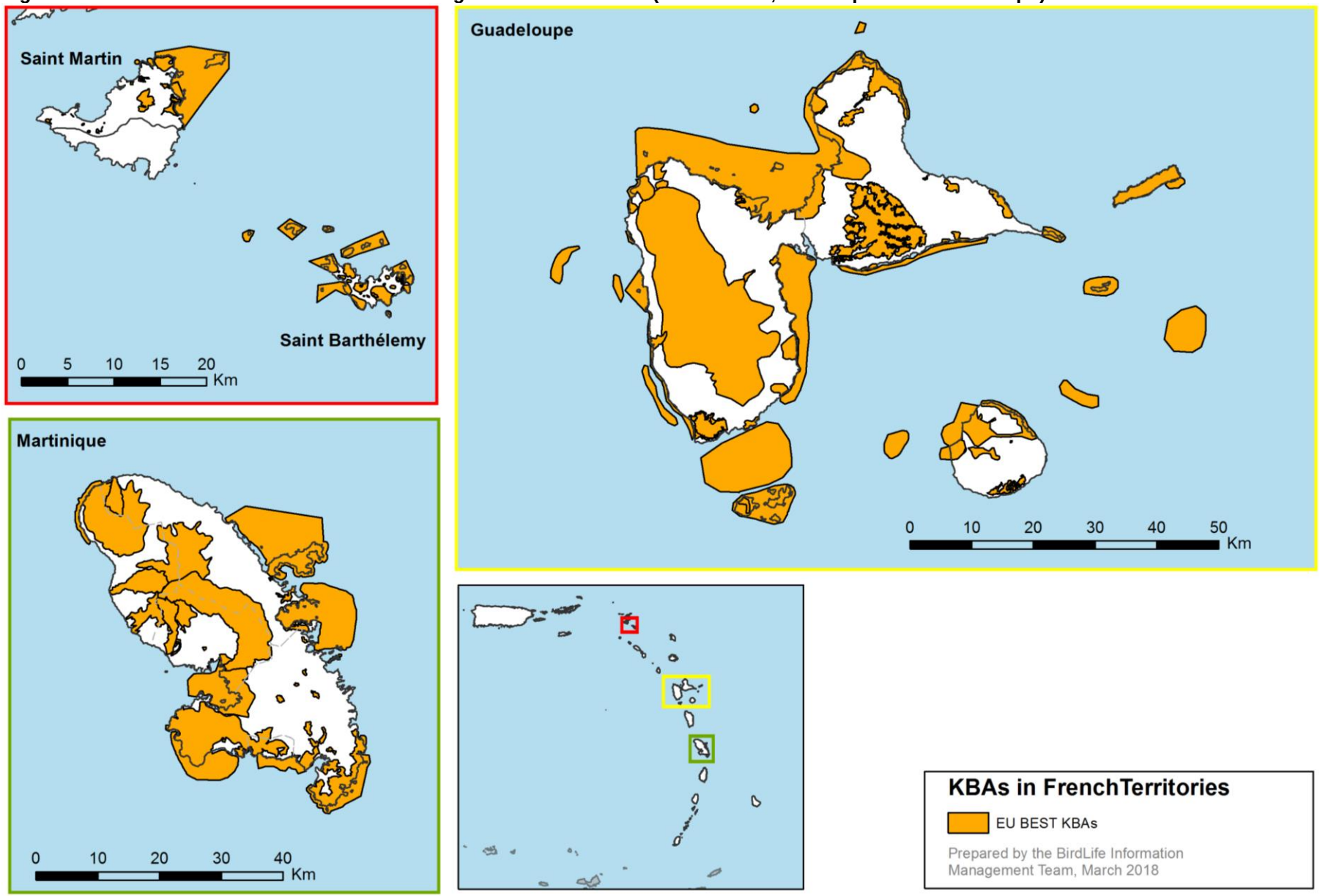
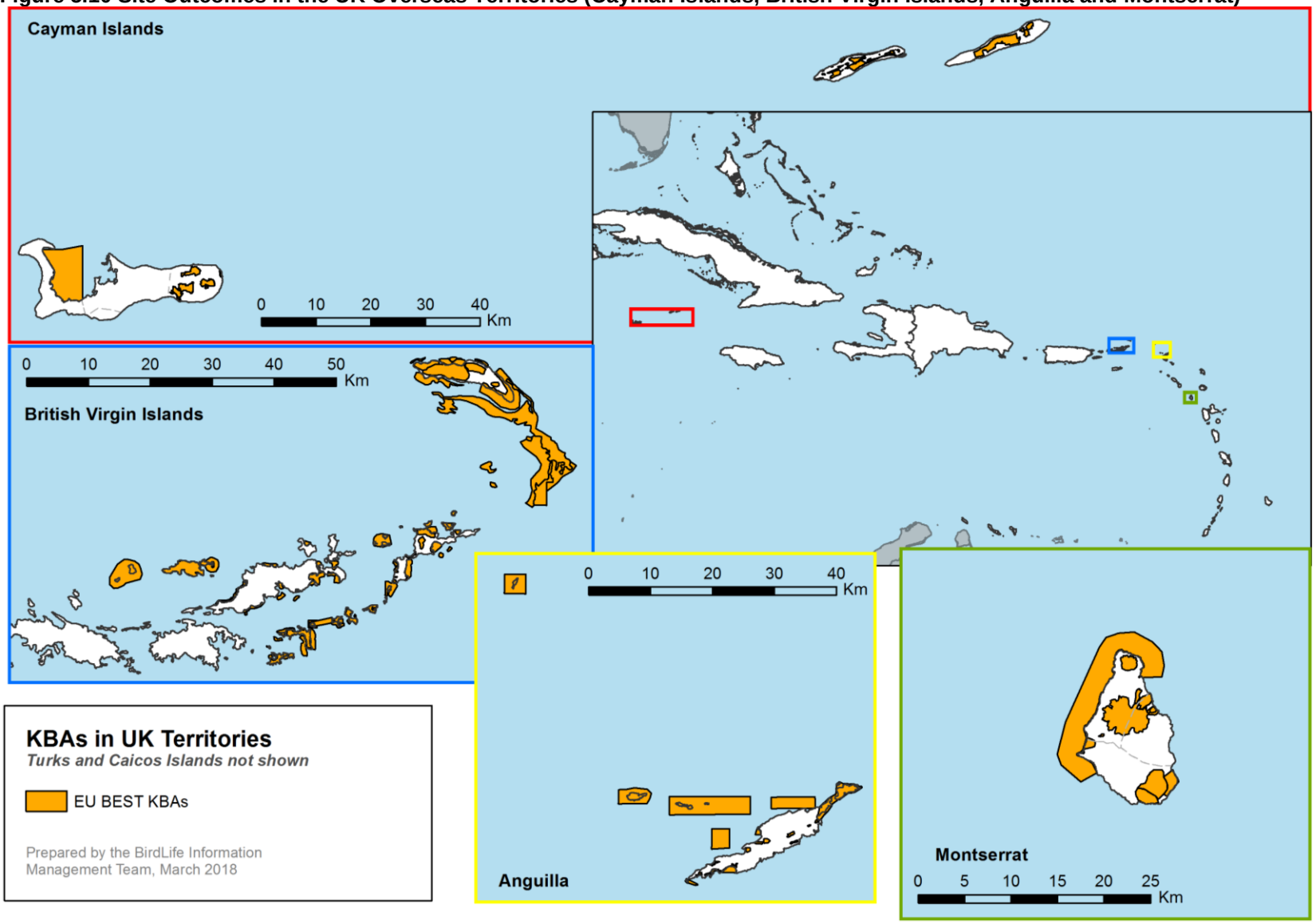


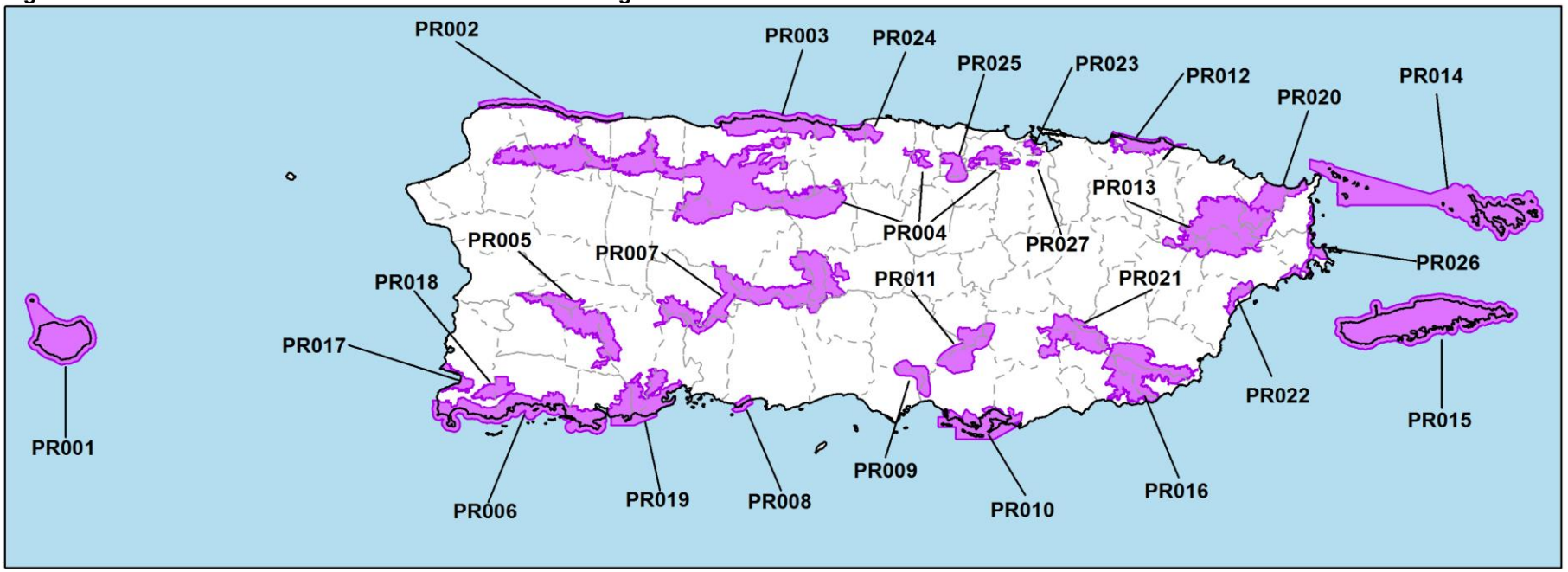
Figure 5.10 Site Outcomes in the UK Overseas Territories (Cayman Islands, British Virgin Islands, Anguilla and Montserrat)[15]

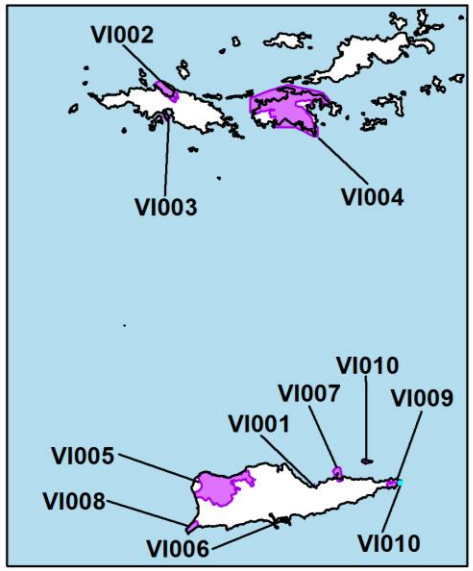


[15] Shapefiles for the Turks and Caicos Islands were not available for inclusion in this profile at the time of writing; to see the KBAs in this territory, refer to pp119-121 of the Regional Ecosystem Profile http://ec.europa.eu/environment/nature/biodiversity/best/pdf/best-ecosystem_profile_carribean_2016.pdf (Vaslet and Renoux 2016).

Figure 5.11 Site Outcomes in Cuba

Figure 5.12 Site Outcomes in Puerto Rico and the US Virgin Islands





As described in Section 5.2, the delineation of EU BEST KBAs was based on the earlier KBA criteria (Langhammer *et al*., 2007), and, as such, these KBAs follow the actual distribution of target species, and consider that the habitats of these trigger species encompass an area that might be manageable for conservation. In this way, some sites sharing the same list of trigger species have been considered *disconnected* KBAs[16]. These scattered sites can be considered viable management units in small islands. This is the case for 34 KBAs featured in the regional ecosystem profile (Vaslet and Renoux 2016). These KBAs include: a network of ponds or marine protected areas across Anguilla; mangroves, ponds and proposed marine protected areas on Aruba; terrestrial habitats across Tortola and Virgin Gorda in the British Virgin Islands; terrestrial and marine ecosystems in the Cayman Islands; terrestrial and marine sites in Guadeloupe, St-Martin, St-Maarten, the Turks and Caicos Islands and St. Barthélemy; dry forests in Martinique; ghauts and dry forest areas in Montserrat; and forests in Saba and St. Eustatius.

Ecological corridors have been identified between the terrestrial, coastal and marine KBAs. A total of 43 ecological corridors, covering an area of 2,720 km², are highlighted in the regional ecosystem profile (Vaslet and Renoux 2016). Regional ecological corridors were determined based on the migration patterns of bird species, sea turtles, bat species and marine mammals and the dispersion of marine species larvae (i.e., corals, fishes, marine invertebrates). Figures 5.8 to 5.10 show the location of the KBAs identified through the EU BEST initiative in the Caribbean Region. More information about these sites can be found in Appendix 3.2 and the regional ecosystem profile.[17]

5.3 Corridor Outcomes

A total of seven conservation corridors covering 47 KBAs have been defined for the Caribbean Islands Hotspot. These corridors were defined around priority KBAs, to maintain or improve connectivity among KBAs, increase the area of actual or potential natural habitat, and enhance ecosystem resilience, ecosystem service values and prospects for long-term biodiversity conservation. The main criteria used to define the corridors were:

- The existence of at least one priority KBA in proximity to other KBAs with which it shares trigger species.
- Distinctive geographical area of endemicity (such as, mountain ranges), with relatively good remnants of natural habitats (mainly forest), adjusted by elevation curves and watershed connectivity.
- Opportunity to add value based in the experiences of the previous CEPF investment phase.

Ecological connectivity within river catchments was given strong emphasis in the investment strategy associated with this profile because of the importance of maintaining flows of ecosystem goods and services and the linkages to land, water, forest, biodiversity and coastal resource management, which potentially contribute to poverty reduction, sustainable livelihoods and climate resilience. The conservation corridors occur in five countries, with one of them being shared between Haiti and the Dominican Republic (Figure 5.12 and Table 5.14).

[16] This designation is not recognized under the new KBA Standard.
[17] Available at http://ec.europa.eu/environment/nature/biodiversity/best/regions/caribbean_en.htm

Figure 5.12 CEPF Conservation Corridors in the Caribbean Islands Biodiversity Hotspot

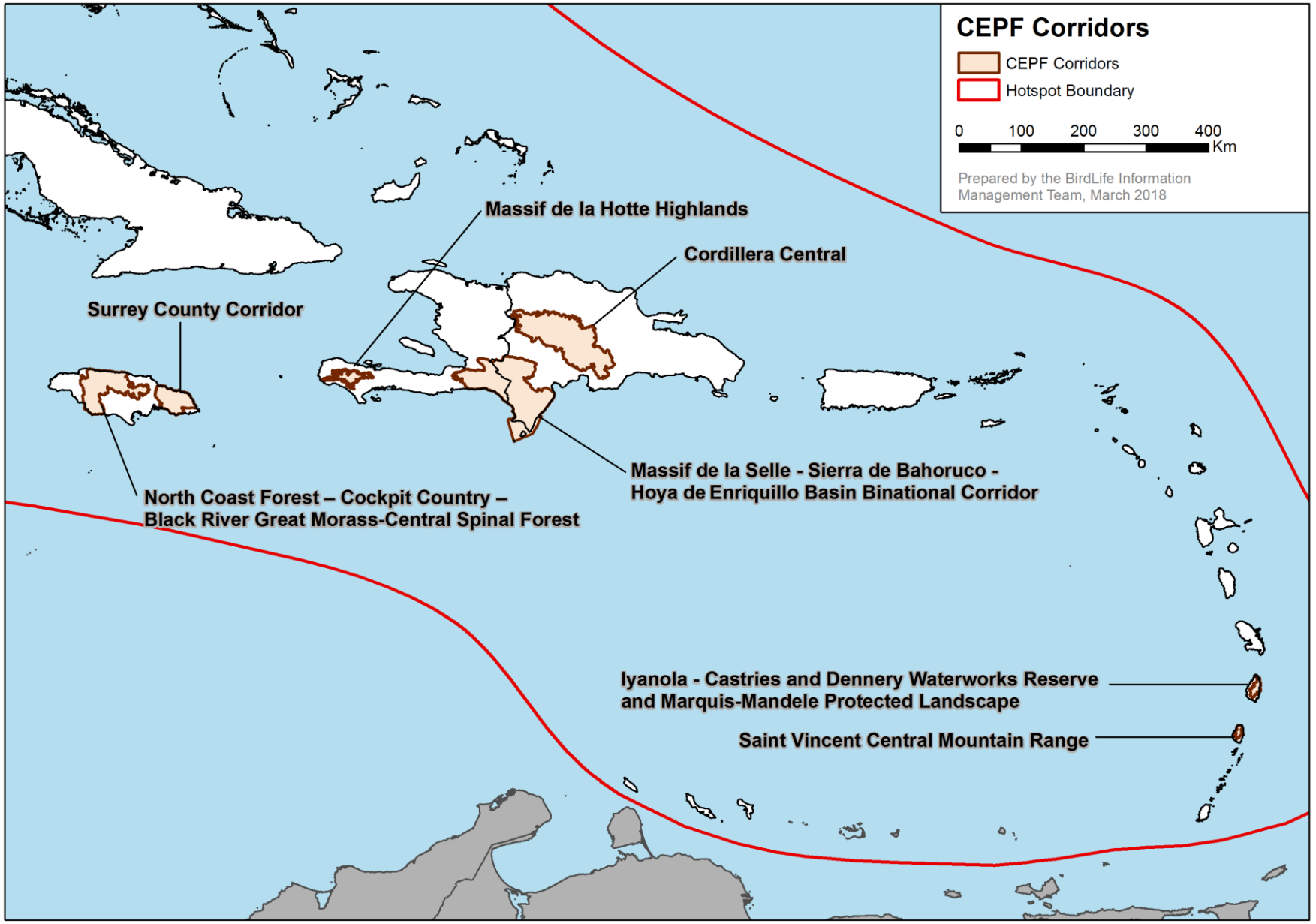


Table 5.14 CEPF Conservation Corridors in the Caribbean Islands Biodiversity Hotspot

	Corridor Name	KBAs	Country	Area (ha)	CEPF Target Corridor 2010-2016
1	Massif de la Selle - Sierra de Bahoruco - Hoya de Enriquillo Basin Binational Corridor	Haiti: Anse-à-Pitres; Lac Azuei-Trou Caiman; Parc National Naturel Forêt des Pins-Unité 1; Parc National Naturel La Visite. Dominican Republic: Monumento Natural Las Caobas; Parque Nacional Jaragua; Parque Nacional Lago Enriquillo e Isla Cabritos; Parque Nacional Sierra de Bahoruco; Parque Nacional Sierra de Neyba; Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte (Bahoruco Oriental); Reserva Biológica Loma Charco Azul	Dominican Republic, Haiti	885,067	Yes (but geography extended to include Lac Azuei-Trou Caiman KBA)
2	Cordillera Central	Loma Nalga de Maco y Rio Limpio; Parque Nacional Armando Bermúdez; Parque Nacional José del Carmen Ramírez; Parque Nacional Montaña La Humeadora; Parque Nacional Parque Nacional Dr. Juan Bautista Pérez (Valle Nuevo); Reserva Científica Ébano Verde	Dominican Republic	777,604	Yes
3	Massif de la Hotte Highlands	Parc National Naturel de Grand Bois; Parc National Naturel Macaya	Haiti	86,100	No (formerly part of the Massif de la Hotte KBA)
4	North Coast Forest - Cockpit Country - Black River Great Morass-Central Spinal Forest	Black River Great Morass; Catadupa; Cockpit Country; Kellits Camperdown; Litchfield Mountain- Matheson's Run; Mt. Diablo; North Coast Forest; Peckham Woods; Point Hill; Santa Cruz Mountains; Stephney John's Vale - Bull Head	Jamaica	370,405	Yes (extended to include Central Spinal Forest)
5	Surrey County Corridor	Blue and John Crow Mountains Protected National Heritage and surroundings; Bull Bay; Rio Grande;Swift River; Yallahs	Jamaica	178,196	No
6	Iyanola - Castries and Dennery Waterworks Reserve and Marquis-Mandele Protected Landscape	Castries and Dennery Waterworks Reserve and Marquis; Iyanola; Mandele Protected Landscape	Saint Lucia	31,228	No
7	St. Vincent Central Mountain Range	Colonaire Forest Reserve; Cumberland Forest Reserve; Dalaway Forest Reserve; Kingstown Forest Reserve; La Soufriere National Park; Mount Pleasant Forest Reserve; Richmond Forest Reserve	St. Vincent and the Grenadines	16,711	Yes

The corridors in Haiti and the Dominican Republic fall firmly within the broader geographic definition of the Caribbean Biological Corridor (see Section 8.2). One of the activities of the second phase of the Caribbean Biological Corridor (2017-2020) is a more detailed delimitation of the corridor's boundaries (Y. Arias, pers. comm. 2018). Five of the corridors were among the six defined under the previous ecosystem profiling process, and four were prioritized for investment between 2010 and 2016. Two of

the corridors (Massif de la Selle - Sierra de Bahoruco - Hoya de Enriquillo Basin Binational Corridor and North Coast Forest - Cockpit Country - Black River Great Morass - Central Spinal Forest) include extended geographies. Portland Bight Protected Area in Jamaica was previously defined as a corridor but, as a single protected area (i.e., a single management unit), it has been identified as a KBA under the new standard.

Among them, the seven priority corridors contain important populations of 205 globally threatened species, 113 of which are Critically Endangered or Endangered.

Massif de la Selle - Sierra de Bahoruco - Hoya de Enriquillo Basin Binational Corridor, Haiti and Dominican Republic. This corridor is the result of merging the Massif de la Selle – Jaragua –Bahoruco - Enriquillo Binational Corridor identified in the previous ecosystem profile with the Hoya de Enriquillo (known as Plaine du Cul-de-Sac in Haiti). The Massif de la Selle in Haiti and the Sierra de Bahoruco in the Dominican Republic are part of the same mountain range in the south of Hispaniola and, together with the Barahona peninsula (the southernmost part of Hispaniola), were part of a southern palaeo-island until the last inter-glacial in the Pleistocene epoch.

The Hoya de Enriquillo is located in a rift valley formed by the Enriquillo-Plantain Garden fault; it extends from Port-au-Prince Bay in Haiti to near Neiba Bay in the Dominican Republic. This fertile lowland depression separates two different regions of the island (north and south palaeo-islands), and that was once an arm of the sea from which the saline lakes of the island (Lake Azuéi and Trou Caiman in Haiti and Lago Enriquillo in Dominican Republic) were formed around 1 million years ago. Following a catchment conservation approach, the Neiba mountain range has been also included in this corridor.

In combination, these areas support the full range of Caribbean ecosystems, and populations of 59 globally threatened species (13 Critically Endangered, 23 Endangered and 23 Vulnerable), with 34 of them being shared by several KBAs (including 10 birds, 10 amphibians and nine plants). Lakes Azuéi and Enriquillo hold several endemic fish species (families Poecilidae and Cichlidae), not all of which have been assessed on the IUCN Red List and, therefore, included in the KBA datasets. The shared fish species include Domingo mosquito fish (confirmed as a trigger species for Enriquillo lake), black-banded limia (*Limia melanonotata*), and Hispaniola pupfish (*Cyprinodon bondi*). American crocodile also occurs in both lakes, with Lago Enriquillo maintaining the largest population of the species in the Caribbean.

There are critical opportunities for enhancing ecological integrity, ecosystem resilience, improving livelihoods and catchment protection that need to be nurtured in order to maintain this unique part of Hispaniola. This conservation corridor lies within the Caribbean Biological Corridor. It maintains the full altitudinal range from sea level to 2,300 m; represents an important source of drinking water for the surrounding communities (including Port-au-Prince); provides flood and landslide regulatory ecosystem services; and is an important source of NTFPs.

Cordillera Central Corridor, Dominican Republic. The Cordillera Central, a corridor defined in the previous ecosystem profile, is maintained as a conservation corridor here. It is the largest mountain range in Hispaniola and includes the highest peak in the Caribbean, Pico Duarte, at 3,098 m. The corridor maintains one of the largest areas of natural forest in the Caribbean Islands Hotspot. Outside of the “core” areas of pine, broadleaf, elfin and cloud forest is a mosaic of agricultural lands, cattle grazing and rural developments. The most important rivers (and water supplies) in the country originate within the forest of this corridor, which needs to be managed at a landscape level to preserve the various watersheds, increase connectivity among forested areas, and improve the ecological resilience to climate change. This

conservation corridor lies within the wider Caribbean Biological Corridor. It maintains an altitudinal corridor from 500 to 3,098 m, represents an important source of drinking water for a significant percentage of the national population (including for the capital city, Santo Domingo), provides protection from floods and landslides, and is an important source of NTFPs.

The corridor includes six KBAs, which support populations of 32 globally threatened species (one Critically Endangered, 17 Endangered and 14 Vulnerable), 26 of which are shared by two or more KBAs.

Massif de la Hotte Highlands Corridor[18], Haiti. The Massif de la Hotte is located in the southwestern of Haiti, on the Tiburon peninsula. This mountain range was identified as a KBA in the previous ecosystem profile but, because of deforestation in many areas, especially in the lowlands, it was decided to identify smaller KBAs, in order to focus conservation efforts on those sites containing the most important remnants of natural forests and associated biodiversity. The process to identify smaller units began during the initial phase of CEPF investment in the hotspot (see Timyan 2011). For the updated ecosystem profile, the former KBA was designated as a conservation corridor, to denote actual or potential ecological connectivity among "islands" of high biodiversity and ensure that critical habitats not yet identified as KBAs are safeguarded, thereby ensuring an appropriate basis for maintenance of landscape connectivity.

Despite the loss of habitat, the Massif de la Hotte is still one of the most biodiverse areas on Hispaniola island, maintaining some of the best wet forests on limestone formations (800-1,200 m) and cloud and pine forests (at higher altitudes) on the island. Forests are mostly restricted to a series of isolated peaks (Grand Bois, Deux Mamelles, Macaya, Bois Pagnol, and Grande Colline) from around 600-800 m to the 2,437 m summit of Pic Macaya, the second highest peak in the country. All these sites, along with some smaller patches of natural habitat in the surrounding matrix of degraded areas, maintain extremely high levels of diversity of species, many of them endemics, in particular for reptiles, amphibians, plants and butterflies (Johnson and Hedges 1998, Skean 2000, Ionta *et al.* 2012). The corridor is also important for some threatened birds and some mammals that have one of their last refuges in this area. About 700 plant species have been found in this corridor, 482 of which are endemic to it. Many of these have highly restricted ranges, being endemic to restricted localities within the corridor (Cano-Ortiz *et al.* 2016).

This corridor contains two priority KBAs, as well as a site not yet confirmed as a KBA due to lack of information (Deux Mammelles), plus at least two other sites (Bois Pagnol and Grande Colline) that could be added to any future KBA inventory for the area. Currently, there are 34 globally threatened species in the corridor, comprising 16 Critically Endangered species (14 of them amphibians), nine Endangered species and nine Vulnerable species. Nine of these species are shared between the two KBAs.

North Coast Forest - Cockpit Country - Black River Great Morass - Central Spinal Forest Corridor, Jamaica. This corridor is the result of joining the former North Coast Forest - Cockpit Country - Black River Great Morass Corridor identified during the previous ecosystem profile with the central section of the Spinal Forest Corridor. The Spinal Forest Corridor was conceived in 2003 (Gage and

[18] At the time of completion of the ecosystem profile, the authors became aware of the existence of a Man and Biosphere (MAB) Reserve that overlaps with the delineation of the Massif de la Hotte Highlands Corridor. The MAB Reserve includes some of identified KBAs as well as some other areas that could be explored as potential KBAs. The use of the MAB Reserve boundary to delineate the corridor, instead of the boundary proposed here, could be explored in order to expand collaboration between the different stakeholders. Unfortunately, a shapefile for the MAB Reserve was not available in time. http://www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/biosphere-reserves/latin-america-and-the-caribbean/haiti/la-hotte/

Edwards 2003) to support the development of a continuous forest along the limestone ridge that traverses east-central to western Jamaica, which once supported a "spinal forest" that covered over 60 percent of the island. The ridge rises up from the Great Morass in Negril, extends east from Dolphin Head in Hanover to the John Crow Mountains in Portland, and includes important areas such as Cockpit Country and Bull Head (Gage and Edwards 2003). Many of the areas within the spinal forest are ecologically significant and particularly important for biodiversity conservation and water catchment protection. The restoration of forest on the island's spine is expected to have significant benefits for local populations.

The need to extend the spinal forest to both the north and south coasts is justified by there being a contiguous block of wet limestone forest, which includes the upper reaches of five major catchments. This section of the corridor was defined to ensure connectivity between the Cockpit Country aquifer and all its rivers down to the coast, and to maintain migration corridors for some species, such as plain pigeon (*Patagioenas inornata*, Near Threatened), between their breeding grounds in the mountain forest and their non-breeding areas in the mangroves on the coast.

The KBAs, including the unique dry forests of North Coast Forest KBA, are separated by agricultural areas and roads, with extensive developments between Cockpit Country and North Coast Forest. North Coast Forest KBA also supports a unique, diverse and highly threatened xeric flora that has not been evaluated against the IUCN Red List criteria. The corridor is the source of drinking water for 40 percent of Jamaicans (and controls the flow of water, thus preventing flooding) and there is extensive use of NTFPs by local communities within and around the corridor. The North Coast Forest portion of the corridor is adjacent to (and significantly influenced by) the country's major tourist center at Montego Bay.

The corridor includes 11 KBAs, among which are four priority KBAs: Catadupa; Cockpit Country; Litchfield Mountain-Matheson's Run; and Peckham Woods. The KBAs collectively support populations of 64 globally threatened species (11 Critically Endangered, 15 Endangered and 38 Vulnerable), with 27 species shared between all these sites, most of which are plants (as can be expected from a corridor based on forest connectivity).

Surrey County Corridor, Jamaica. Surrey County Corridor corresponds to the easternmost section of the Spinal Forest Corridor, with Blue and John Crow Mountains Protected National Heritage and surroundings KBA at its center (previously considered two separate KBAs). The corridor extends to the coast in the north, covering Swift River and Rio Grande KBAs, and to Bull Bay and Yallahs KBAs in the south, while following the main watersheds (i.e., of the Yallahs and Morant rivers). The Plantain Garden river delimits the southeastern boundary of the corridor. The corridor ranges from sea-level to 2,256 m at the top of Blue Mountain peak, embracing habitats ranging from mangroves to tall wet, montane forest.

In combination, the corridor represents the watershed for the entire eastern end of the island, servicing Kingston and Portmore (and the north coast town of Port Antonio) with fresh water, and also providing flood prevention services. The corridor is important for agriculture (especially "Blue Mountain" coffee production), forestry and tourism. Much of the area is afforded national park and World Heritage Site status, or otherwise protected through the system of forest reserves managed by the Jamaica Forestry Department.

The corridor supports populations of 44 globally threatened species, comprising five Critically Endangered, 10 Endangered and 29 Vulnerable species. As expected from its relationship to the Spinal

Forest, the Surrey County Corridor shares 31 species (most of them plants) with the North Coast Forest - Cockpit Country - Black River Great Morass - Central Spinal Forest Corridor.

Iyanola - Castries and Dennery Waterworks Reserve and Marquis-Mandele Protected Landscape Corridor, Saint Lucia. This corridor covers three KBAs and encompasses the most important areas for wildlife, according to the Saint Lucia Forestry Department: the montane and lowland rainforests in the center of the country and the dry-forests on the Atlantic coast. The montane rainforest is mostly protected by the Castries and Dennery Waterworks Reserves and Marquis (also known as the Governmental Forest Reserve), which is almost completely surrounded by a series of private reserves, which contain most of the lower montane forests and continue to the coast to one of the most threatened habitats: the dry-forest from Dennery to Grand Anse.

The Castries and Dennery Waterworks Reserves are nationally important for water supply and the conservation of moist forest ecosystems and species. Iyanola contains the largest contiguous area of deciduous coastal forest in Saint Lucia, which has been subjected to damage from hurricanes and other land degradation processes and is in urgent need of restoration efforts. This corridor completely covers the catchment of three rivers (the Marquis, Fond D'Or and Dennery) and is the source of five other important rivers (the Troumasee, Canelles, Vieux Fort, Rosseau and Cul De Sac).

This corridor supports nine globally threatened species (one Critically Endangered, five Endangered and three Vulnerable), six of which are shared between the KBAs; in particular the endemic and Endangered Saint Lucia black finch (*Melanospiza richardsoni*), Saint Lucia anole (*Anolis luciae*) and Saint Lucia lancehead (*Bothrops caribbaeus*). A population of iguanas that work in progress has shown to be a unique lineage based on DNA and morphology is found in the Iyanola and Marquis areas and, reportedly, on the boundary between Castries Waterworks Reserve and Iyanola (Stephen *et al.* 2012, Breuil 2013).

Saint Vincent Central Mountain Range Corridor, St. Vincent and the Grenadines. The island of Saint Vincent is divided north to south by a volcanic central mountain range. The mountain range starts in the north with La Soufriere (1,234 m): an active volcano and the island's highest point. The corridor is centered on seven continguous KBAs along the forested Central Mountain Range. These form the proposed Central Forest Reserve under the national system of protected areas and heritage sites.

The KBAs in this corridor comprise a disjointed set of variously protected and unprotected forest areas, which are being degraded and threatened by agricultural expansion and infrastructure developments. The forests of the Saint Vincent Central Mountain Range Corridor represent one of the largest remaining tracts of wet forest in the Lesser Antilles, and one of the few that maintains full altitudinal connectivity from sea level to 1,234 m.

This conservation corridor supports populations of four globally threatened species (one Critically Endangered, two Endangered and one Vulnerable), all of which are shared between two or more KBAs. The corridor embraces the catchments that provide all of Saint Vincent's fresh water. Consequently, the corridor has been extended to the eastern coast following one of the major watersheds in the country (the Colonarie river), to provide opportunities for payment for ecosystem services schemes that build upon some of the initiatives funded during the initial phase of CEPF investment.

5.4 KBA and Conservation Corridor Ecosystem Services Outcomes

There are few assessments of ecosystem services at national or regional levels in the hotspot. Some sites have been assessed for specific services and particular reasons. However, among the KBAs in identified in the updated profile, ecosystem services assessments and valuations have been done only for one KBA in The Bahamas, three in the Dominican Republic and two in Jamaica (Table 5.15).

Table 5.15 Ecosystem Services Identified or Assessed in Selected KBAs in the Caribbean Islands Hotspot

Country	Key Biodiversity Area	Ecosystem Services Assessed
Bahamas	Exuma Cays Land and Sea Park	Recreation, waste treatment, fisheries, raw materials, carbon storage, biodiversity, disturbance regulation, water, pest control, cultural.
Dominican Republic	Parque Nacional Montaña La Humeadora	Water provision, electricity production
	Parque Nacional Sierra de Bahoruco	Global climate regulation, crops (including honey), water provision, water quality and nature-based recreation
	Parque Nacional Los Haitises	Water provision, tourism
Jamaica	Portland Bight Protected Area	Fisheries, forestry (charcoal and non-timber) tourism, recreation, waste treatment, sediment retention, coastal protection, carbon fixation, biodiversity and cultural heritage
	Cockpit Country	Gas and climate regulation, water provision, water quality, soil formation and stability, pollination, habitat/refugia for species, timber and forest product provision, recreation, aesthetic, cultural and passive use

The Bahamas. Exuma Cays Land and Sea Park is the oldest marine protected area in The Bahamas and the only one managed as a no-take area. The fisheries, tourism, and carbon storage and sequestration values indicate the importance of continued investment into the area. Valuation of the area's ecosystem services estimate that:

- Visitors spend $6.6 million annually from 23,000 visitor-days.
- Nursery habitat supports $1 million in export value of spiny lobster annually, over 100 tonnes in catch.
- Coral, seagrass, and mangrove protect much of the Exuma Cays coastline and reduce the risk of coastal hazards for people along the southern extent of the Cays (low population precludes assigning a coastal protection value to ecosystems within the area).
- Seagrass and mangroves prevent over $130 million in avoided damages due to emissions by storing more than 10.7 million tonnes of carbon.

Previous studies indicate that increased biomass and reproductive capacity for lobster, Nassau Grouper, and Queen Conch within the park and improved fisheries outside the park, along with increased high-end tourism and property values within the park, have generated more than $9 million in direct and measurable economic impact in a single year (Arkema *et al.* 2017).

Hargreaves-Allen (2011) estimates that habitats on Exuma provide an average of $105,000 per km^2 per year in ecosystem services (ranging from $58,000 for estuaries to $216,000 for beaches). Given habitat area estimates, the Exuma area enjoys $230 million in annual ecosystem service flows. Over the next 25 years, this equals a benefit of $4.1 billion (or a rate of return of 3 percent). Conversion of natural habitats in the Exumas is likely to involve a loss of at least $55,000 in annual benefits for each square kilometer converted.

Dominican Republic. Ecosystem services at Parque Nacional Sierra de Bahoruco were assessed using the BirdLife TESSA[19] toolkit. The assessment compared the provision of services under the current state of the site, under protected area status and with low human impact, versus an alternative state under high human impact, a scenario that is reflected on the hillsides in the southern section of the park. Under protected area conditions, most of the value and production of the assessed services tend to increase (global climate regulation, water provision, water quality, honey production, and nature-based tourism). The only service with a tendency to decrease its value is crop production (BirdLife International and Grupo Jaragua 2015).

Parque Nacional Montaña La Humeadora is perhaps the most important source of water in the country, providing 69 percent of the drinking water for the capital Santo Domingo, and 42 percent of the national hydro-energy production (Ministerio de Medio Ambiente y Recursos Naturales 2014).

The well-aqueduct system that feeds the eastern part of the province of Santo Domingo as well as Boca Chica and other communities, comes from the aquifer that also feeds Parque Nacional Los Haitises. Tourism is another service that the park provides. In 2011, 22,155 people visited the protected area, of which 17,888 were foreigners and 4,267 were Dominicans. As a rough estimate of the economic importance of tourism activity in the park, entrance fees in 2011 generated at least $45,233 for the Ministry of Environment, while the local communities of Sabana de la Mar, Samaná and Sánchez generated an estimated $180,934 in the payments for terrestrial and marine transportation, and sale of food, without counting the revenue generated by land transportation that generally stays with Santo Domingo-based transportation companies (Ministerio de Medio Ambiente y Recursos Naturales 2012).

Jamaica. The C-CAM Foundation has estimated that sustainable use of capture fisheries and a community-based ecotourism project in Portland Bight Protected Area could generate a total net profit of between $39,312,800 and $46,816,200 in net present value terms over a 25-year period, using a 10 percent discount rate. Ecosystem functions in Portland Bight Protected Area, such as environmental disturbance prevention, carbon sequestration, water supply, bioremediation of waste and nutrient cycling are under growing pressure. C-CAM's management plan estimates that Portland Bight Protected Area could generate a total net discounted economic benefit of between $30,656,000 and $41,773,000 over the same 25-year period, from a payment for ecosystem services scheme. With a total estimated economic cost of $17,360,500 for managing Portland Bight Protected Area over the same period, given its revenue generation potential, the economic return on invested funds for the sustainable management of Portland Bight Protected Area is favorable (Guingand 2008).

The ecosystem service valuation of Cockpit Country used several methods of assessing ecosystem services (Edwards 2011). A willingness-to-pay survey found that Jamaicans were willing to pay between $12.70 to $19.70 per person to preserve Cockpit Country. Using the number of voting age individuals on the island, the aggregated value for Cockpit Country ecosystem services is estimated to be $21 million per annum, based on this willingness-to-pay calculation.

The estimated value of Cockpit Country's forest cover and related carbon sequestration ecosystem services is JMD 917 million (equivalent to $7.3 million) per year (Edwards 2011). The net present value of Cockpit Country's carbon is considerable, when compared to annual earnings from bauxite mining of $68.4 million in 2011 when the study was done. If the Jamaican government is able to participate in the

[19] http://www.birdlife.org/worldwide/science/Toolkit_for_Ecosystem_Service_Site-Based_Assessment/How_TESSA_is_different_from_other_tools

emerging international carbon market, this ecosystem service could potentially provide well-needed revenue for supporting natural resource protection. Even in the absence of an existing market, the social cost of carbon should still be considered in national planning and decision making.

6 THREATS TO BIODIVERSITY IN THE HOTSPOT

The biodiversity of the Caribbean hotspot is both unique and vulnerable. Like that of most other island systems, the relative isolation of the islands has given rise to many endemic forms and to biodiversity that is characterized by small populations, a narrow genetic base, reduced competitive abilities, limited dispersal opportunities, and restricted distributions. As a result, the native biodiversity of the Caribbean Islands Hotspot has limited capacity to buffer natural and man-made threats relative to continental biota. However, the region's native biodiversity and ecosystems have evolved in an environment that is affected by regular natural hazards, notably hurricanes, and so have developed a certain level of natural resilience to disturbance.

Information on threats to biodiversity, their root causes and barriers to effective conservation in the insular Caribbean is scattered and there are few regional reviews. The most recent are those of Brown *et al.* (2007) for the whole region, and Vaslet and Renoux (2016) for the EU overseas countries and territories and outermost regions. In many cases, statistics for the Caribbean are lumped with those for Latin America or Central America, or presented for the wider Caribbean, which includes the bordering continental countries: Trinidad and Tobago; Guyana; and Suriname. National overviews of threats, root causes and barriers are presented in NBSAPs, although, along with other relevant publications, these vary considerably in their presentation of quantitative data and degree of analysis, and most sources present only qualitative descriptions of threats and their impacts, their causes and measures to address them.

This chapter provides an overview of the main threats to biodiversity and ecosystems in the hotspot and their impacts. This is followed by an analysis of the root causes of the threats and the barriers that need to be overcome to achieve more effective conservation and sustainable use of the hotspot's biodiversity and ecosystems and thereby address the threats.

6.1 Threats

Terrestrial biodiversity in the hotspot has been impacted by humans since the first arrival of people in the Caribbean some 6,000 to 7,000 years ago. However, negative impacts increased substantially following the arrival of Europeans from the end of the 15th century onwards, and have escalated in the last 50 years due to the rapidly increasing island populations and economies in the region (Brooks *et al*. 2002). The key threats to biodiversity presented in this chapter have been prioritized based on quantitative threat data on globally threatened species collated for the IUCN Red List program, updating the subjective prioritization done for the 2009 Caribbean Islands Biodiversity Hotspot Ecosystem Profile. The main prioritized threats to the terrestrial biodiversity of the insular Caribbean, based on a review of the threats to the hotspot's 992 globally threatened species on the IUCN Red List, are: over-exploitation of biological resources; habitat destruction and fragmentation due to agricultural/aquaculture, urban, tourism and industrial/commercial development; predation and competition by invasive alien (and other problematic) species; and, increasingly, climate change/severe weather events (IUCN 2017b; Table 6.1).

Pollution is a major threat to the marine environment in the hotspot (CEP 2003). While pollution and sedimentation pose a threat to freshwater ecosystems, they also affect the marine environment extensively. Given the relatively small size of most Caribbean islands, pollution from terrestrial sources tends to end up in coastal waters. Sedimentation and pollutants flowing downstream affect coastal water quality, smother corals, kill fish and reduce the tourism and recreational value of beaches in many countries. Recurrent blooms of the pelagic algae *Sargassum natans* and *S. fluitan*s have become a

growing threat to coastal and marine ecosystems since 2011. *Sargassum* has created immediate problems for tourism and fisheries and has the potential to raft invasive species between islands. The full extent of the ecological impact of the blooms is unknown, however (Franks *et al.* 2016).

Table 6.1: Prioritized Threats to the Caribbean Islands Hotspot's 992 Globally Threatened Species

Rank	Threats	No. Globally Threatened Species Affected	Percentage of Globally Threatened Species Affected
1	Over exploitation of biological resource use	284	29
2	Agriculture / aquaculture	273	28
3	Invasive / problematic species	191	19
4	Residential / commercial development	168	17
5	Climate change / severe weather	88	9
6	Human intrusions / disturbance	81	8
7	Pollution	49	5
8	Energy production / mining	40	4
9	Transport / service corridors	39	4
10	Natural system modifications	28	3
11	Geological events	11	1
12	Other	2	0

Source: IUCN (2017b).

6.1.1 Biological Resource Use: Over-Exploitation, Persecution and Control

Unsustainable use of limited, and often dwindling, biological resources is the primary threat to biodiversity (at a species and site level) across the Caribbean Islands Hotspot. It has been identified as a threat to 29 percent of the globally threatened species in the hotspot (Table 6.1). IUCN defines biological resource use threats as those related to "consumptive use of 'wild' biological resources including both deliberate and unintentional harvesting effects; also persecution or control of specific species" (IUCN n.d., p6). The main activities that fall into this threat category in the hotspot include: timber extraction; over-collection of wood for fuel (especially charcoal); collection of plants for horticulture; unsustainable hunting and egg collection for food or sport; and trapping of animals for the pet and aquarium trades. The list of species suffering from unsustainable resource use is almost certainly conservative as quantitative data on many of these activities are scarce. This is in part because exploitation is often illegal and, thus, hidden, and in part because there is inadequate monitoring due to lack of resources within the relevant environmental agencies.

Timber Extraction

Hotspot forests bear the legacy of past timber extraction activities. Originally, hardwood was used to make ships, homes and furniture by the early colonists. The rest of the forest was treated as a source of fuelwood and then cleared for plantations. Today, few of the islands have any significant primary forest cover remaining, and several species that were once common and heavily traded, are now commercially exhausted. These include Caribbean mahogany (*Swietenia mahagoni*), which has been lost from portions of its range and old growth stands have been virtually eliminated. It is now listed as Endangered and restricted in international commercial trade under CITES. Because of its value, this species was introduced elsewhere and has now become naturalized on many islands. Other economically valuable timber species in the Caribbean islands include West Indian walnut (*Juglans jamaicensis* - VU), West Indian ebony (*Brya ebenus*), and poui (*Tabebuia heterophylla*). Illegal logging threatens commercial forest concessions and critical protected areas and buffer zones.

Sixty-six percent of tropical dry forest in the Caribbean has been transformed into human-dominated landscapes (IPBES 2018). Most of the remaining forest in the Greater Antilles is secondary and only the montane forests are relatively undisturbed. Similarly, in the Lesser Antilles, the best-preserved tracts of forest are often at higher elevations, for example, on Martinique, Dominica and Saint Lucia, or on steep slopes and deep gullies that are inaccessible for cultivation. The area under forest cover has increased in some countries in recent decades (see Box 6.1 and Section 7.3.3). One such country is Cuba, which was more than 90 percent forested in 1492 but, by 1900, had a forest cover of only 5 percent. However, the area of forest has since increased, reaching 13.5 percent in 1960 and 30 percent in 2015, due to reforestation (FAO 2015).

Box 6.1: Forest Cover and Deforestation in the Caribbean

Global statistics on forest cover are compiled by the FAO every 10 years. The most recent figures (FAO 2015) indicate that the majority of the hotspot's remaining forests are found in Cuba (3,200,000 hectares), the Dominican Republic (1,983,000 hectares), The Bahamas (515,000 hectares), Puerto Rico (496,000 hectares) and Jamaica (395,000 hectares). In the Lesser Antilles, there are regionally significant forest holdings on Guadeloupe (71,000 hectares), Dominica (43,000 hectares) and Martinique (49,000 hectares), although, as in the case of the Greater Antilles, the best-preserved tracts are at higher elevations, which tend to be less accessible. The total forest cover of the insular Caribbean amounts to 7,195,000 hectares, or 32 percent of the land area (FAO 2015). The FAO figures show that forest cover is still declining in some of the hotspot countries (particularly Haiti and Jamaica), holding steady in others (particularly the Leeward Islands), and increasing in a few (Cuba, the Dominican Republic, Puerto Rico, and St. Vincent and the Grenadines). However, these conclusions need to be treated with caution, as there are differences between authorities on what constitutes forest, and no reliable systems of monitoring are in place in most Caribbean countries. Reported figures should, therefore, be treated as estimates. For example, Jamaica's Department of Forestry has published work contesting the FAO's figure and maintaining that the rate of loss of Jamaica's forests during the 1990s was negligible (Evelyn and Camirand 2003). Similarly, in the Dominican Republic, there is a significant discrepancy between the FAO figures (41 percent forested) and the government's figure (25 percent).

Most forestry in the region still has a traditional focus on timber production from plantations (often of exotics) and catchment protection, although investment and capacity building by international agencies in recent years is helping to move the sector towards a multi-use approach, including protection of natural forests for other ecosystem services, such as nature-based tourism and recreation. There is also a trend towards less centralized control and, increasingly, stakeholder participation has become an important element of forest management strategies, for example in Jamaica, where Local Forest Management Committees have been playing a role in forest conservation at the local level (Brown and Bennett 2010). There has been very limited development of forest certification schemes in the insular Caribbean (ITTO 2008). The only Forest Stewardship Council-certified forest in the Caribbean Islands Hotspot covers 365 hectares in the Dominican Republic (FSC 2017).

Firewood Collection and Charcoal Production

Because energy infrastructure in rural areas of the poorer countries of the hotspot is still inadequate, communities in these areas rely heavily on fuelwood and charcoal from forested areas, including mangroves. Charcoal and fuelwood provide an estimated 70 to 85 percent of Haiti's energy consumption (ESMAP 2007 cited in UNEP 2016c) and 80 percent of wood extracted in Jamaica is ultimately consumed as fuelwood (FAO 2001).

Addressing the lack of energy sources for poorer rural communities can help reduce demand for fuelwood and take pressure off the remaining forests and their threatened biodiversity. In the Dominican Republic, for instance, a government policy of subsidizing propane gas and cooking stoves was put in place in the mid-1980s, which helped reduce the consumption of wood for charcoal, used for cooking by most of the population, from 1,596,000 sacks in 1982 to 26,465 sacks in 2000 (Gómez and Díaz 2001). More recently,

there have been efforts to promote energy-efficient wood-burning stoves (*estufas lorena*) in the Dominican Republic.

In some countries, such as Haiti, harvesting mangroves for charcoal and firewood has become more common, as more traditional and accessible timber reserves have become exhausted. Loss of mangroves has consequences for near-shore and coastal resilience and fisheries. Between 1990 and 2000, most hotspot countries showed decreasing mangrove cover (FAO 2007). Large areas of mangrove have been lost from Martinique, Guadeloupe, the former Netherlands Antilles, and the British Virgins Islands. However, since 2000, the area of mangrove in the region has remained stable (FAO 2015). Countries that still support sizeable areas of mangroves include Antigua and Barbuda, Cuba, and the Turks and Caicos Islands.

Collection of NTFPs

Other non-wood forest products, such as fruits, fibers, resins, tannins, essential oils, tree seeds, honey, fodder, yam and bean poles, ornamental plants, tree fern trunks (for cultivation of orchids), bamboo, medicinal plants, spices, edible oils, dyestuffs, gums and mushrooms, are often said to be an important part of the rural economy, especially for poorer families. However, their value (socially and economically) has not been quantified and only partially documented for some countries, for example Cuba and in the Windward Islands (John 2005). Cuba, for instance, listed production of 1,474 tonnes of raw material for medicinal and aromatic products, 68 tonnes of raw material for colorants and dyes, and 18,400 tonnes of other non-edible animal products harvested from its forests in 2005 (FAO 2006a). Collection of some NTFPs is known to be taking place at unsustainable levels or using destructive practices.

Hunting

Many animals are hunted for food or sport in the region. Those hunted for food include many threatened species of amphibian, reptile, mammal and bird. Among the hunted amphibians are the globally threatened mountain chicken, found on Dominica and Montserrat. Hunted reptiles include iguanas (Haiti, the Dominican Republic and the Lesser Antilles) and marine turtles (especially adult females and eggs), despite the fact that international commercial trade of certain turtle species is forbidden under CITES. Hutias, which were part of the diet of the region's pre-Columbian inhabitants, are still among the mammals hunted for food today.

Several species of birds are also hunted for food, particularly waterbirds and game birds, including threatened species such as West Indian whistling-duck (*Dendrocygna arborea* - VU). Hunting of birds for sport, especially pigeons and doves, such as white-winged dove (*Zenaida asiatica*) and zenaida dove (*Z. aurita*), is popular on many islands. Some target species that can be legally hunted in some countries are becoming scarcer, such as white-crowned pigeon (*Patagioenas leucocephala*), which is found in several hotspot countries and is now listed as Near Threatened.

Addressing unsustainable hunting is identified as a conservation goal in several countries' NBSAPs, either directly (for example, Jamaica) or through general measures to promote sustainable use of natural resources. Population censuses of some target species are undertaken by environment agencies on most islands, although most of this information remains in unpublished technical reports. Hunting seasons and bag limits are regulated under national legislation, with penalties for violations. Hunting is usually restricted within formal protected areas, although poaching is still widespread in many. Knowledge and awareness of the threatened status of some hunted species and the importance of associated high biodiversity sites has improved through specific projects, such as through the *West Indian Whistling-duck and Wetlands Conservation Project* (see https://www.birdscaribbean.org/caribbean-birds/wiwd-

and-wetlands-conservation-project/#:~:text=To%20reverse%20its%20decline%20and,WIWD%20and%20Wetlands%20Conservation%20program). However, surveillance and enforcement remain key challenges due to lack of capacity and resources among relevant government agencies. There is a general lack of transparency and accurate information on the numbers and locations of animals taken, as well as on the level of illegal hunting and the impact of hunting on populations. Such information is needed to make informed decisions about species-specific hunting limits, design effective management plans for target species, and protect the most vulnerable species. This represents an important gap in knowledge and research.

Egg Collecting and Harvesting for Medicinal Use

Seabird colonies on offshore cays throughout the Caribbean have also been traditionally harvested for their eggs by fishermen during the breeding season. Although most colonies are now protected under national legislation, illegal egg collecting still occurs. In Jamaica, human predation has been identified as the most important historical factor contributing to the decline in the country's seabird populations (Haynes Sutton 2009). On Hispaniola, the sooty tern (*Onychoprion fuscatus*) colony at Isla Alto Velo was estimated at 175,000 pairs in 1950 but had declined to 40,000 to 50,000 pairs by 1980, which has been explained by systematic large-scale egg collection by humans (Keith 2009). In St. Vincent and the Grenadines, and Grenada, large-scale poaching of eggs was practiced in the past. Egg collection still occurred on islets off Grenada in the early 1990s and still occurs in the Grenadines (Frost *et al*. 2009).

Sea turtle egg collection is intensive and pervasive throughout the hotspot, although significantly less so than in Central America. This exploitation and the resulting trade are proving to be a serious challenge for management. Some islands report egg poaching levels approaching 100 percent on some beaches. The exploitation is largely unquantified, and its impact on turtle populations is impossible to judge (Bräutigam and Eckert 2006).

Some threatened or endemic animals are also shot or collected for medical use. These include rufous-breasted cuckoo (*Hyetornis rufigularis)* on Hispaniola and clouded boa (*Boa constrictor nebulosus*) on Dominica, the fat of which is used to make 'snake oil', which is believed to help cure joint problems and back ache. Cuban crocodile (*Crocodylus rhombifer*) and American crocodile are taken for their hides. There is some farming of the latter species on Cuba, in an effort to address the trade issue with a reintroduction program (Jenkins *et al*. 2004). Medicinal oil is obtained from leatherback turtles on several Caribbean islands (J. Horrocks *in litt*. 2009).

The economic value of animal hunting and harvesting on the Caribbean islands has not been adequately researched. Such information would help persuade politicians and other decision-makers of the need to increase resources to manage populations of hunted species sustainably. Some limited data are available for some islands and species but the picture is very incomplete.

Collection for the Live-Animal and Plant Trades

Collecting for both the local and international pet, aquarium and horticultural trades is also believed to present a direct threat to some species in the hotspot, particularly for the more attractive and rare (so more commercially valuable) species, such as parrots, iguanas, orchids, bromeliads and cacti. Trade statistics for local markets are not generally kept and protected species tend to be sold clandestinely. What is more, not all the countries in the hotspot submit annual reports on trade in endangered species regularly (UNEP 2002). As a result, national and international trade statistics for animals and plants are not comprehensive for the Caribbean.

Despite protection under national and international legislation, small numbers of threatened species continue to surface in markets outside the region. For instance, several specimens of Saint Lucia amazon and Cuban amazon (*Amazona leucocephala*) have been reported in EU countries in recent years, despite both being listed on EU Annex A and CITES Appendix I (Anon. 2002 quoted in Theile *et al*. 2004). In 2011, 74 eggs of black-billed amazon (*A. agilis* - VU) and yellow-billed amazon (*A. collaria* - VU) were seized at the international airport in Vienna, Austria. Forty-five parrots were successfully hatched from these eggs, following incubation at a Vienna zoo (Ferguson 2011). There has also been concern over illegal trade in the US, UK, French and Dutch overseas entities in the region, although the scale of illegal smuggling of Caribbean wildlife is not known.

Overall, there is a need for more comprehensive surveys to quantify current levels of exploitation of both animals and plants in the hotspot and regional and national reviews of their use. The establishment of scientifically based limits on the exploitation of target species are also needed, as are improved monitoring and awareness programs for target species, more clearly defined laws and regulations governing the use of animal and plant species, and better law enforcement. Finally, there is a need for improved national and regional reporting, including to CITES.

Fisheries

Caribbean fishery resources are among the most overexploited in the world, with regional production having declined by more than 40% over the last two decades (FAO 2014). Although small in global terms, Caribbean fisheries are important for livelihoods in coastal communities and food security. Most Caribbean fisheries are artisanal and while fishing practices have changed little, apart for the introduction of motorized boats and modern materials, what has changed is level of intensity and the number of people supported by the fisheries (Johannes 1977 in Hawkins and Roberts 2004, Polunin *et al*. 1996 in Hawkins and Roberts 2004). Fifty-four percent of species or species groups in the Caribbean are considered overfished or over-to-fully fished (Western Central Atlantic Fishery Commission 2017). Overexploitation is the main threat to bony fishes in the Caribbean; it directly affects half the species in the greater Caribbean listed by IUCN as globally threatened or near threatened (Linardich *et al.* 2017).

Artisanal fisheries have transformed coral reefs in ways that seriously compromise their ecological and economic value (Hawkins and Roberts 2004). Fishing pressure has been shown to have a cascading effect on coral reefs, with overfishing contributing to changes in the structure and composition of Caribbean coral reefs and increases in the abundance of algae and sponges due to declines in populations of grazers, such as parrotfishes (Hawkins and Roberts 2004, Loh et al. 2015). More than half of the overexploited species in the greater Caribbean are found on reefs (Linardich et al. 2017).

6.1.2 Agricultural and Aquaculture Expansion and Intensification

The expansion and intensification of agriculture and aquaculture is an identified threat to 28 percent of all globally threatened species in the Caribbean Islands Hotspot (IUCN 2017b). Large-scale clearance of land for agriculture, principally sugarcane plantations at lower elevations, started in the 16th century, shortly after European colonization began, and increased through the 18th and 19th centuries, leading to widespread deforestation throughout the region (the timber being used for construction and fuel for the sugar factories). This led to destabilizing erosion, loss of some permanent streams, and declines in land fertility (McElroy *et al*. 1990). Soil is crucial to sustain both biodiversity and the ecological services it provides but this important resource continues to be degraded globally (United Nations Convention to Combat Desertification 2017). Some of the smaller islands, including Antigua, Barbados, The Bahamas,

Bonaire, Saint Kitts and Nevis, and the US Virgin Islands, lost virtually all their native forest at that time or were completely altered by agricultural development.

The later rise of new agricultural export markets led to further periods of intense deforestation, such as during and after the banana boom of the 1970s and 1980s in the Windward Islands. Recent threats to montane forest from agriculture come from extension of cocoa, coffee and tobacco plantations. The abandonment of sugar (and other major crops, such as cotton, on some islands) due to changed economic conditions or a reduction in soil fertility often resulted in transformation to pasture and a large increase of livestock production, especially cattle.

Overgrazing has significantly altered the vegetation of many forest areas, leading to degraded scrub vegetation, and continues to be a threat to native vegetation, especially on those islands with significant numbers of free-roaming sheep and goats, for example, Bonaire, Grenada's Carriacou, and Petit Martinique, St. Barthélemy, and many offshore cays that have been traditionally used as natural corrals for goats. Agricultural expansion has resulted in unsustainable levels of cultivation and grazing on unsuitable land (Rojas *et al*. 1988), which has led to soil erosion, further land degradation and landslides, which cause substantial economic losses each year and are especially damaging on steep islands with flat coastal plains, such as Jamaica and Hispaniola.

Most of the Caribbean's forests have been lost to agricultural development. Today, no more than an estimated 21,600 km^2 or less than 10 percent of the original vegetation remains in a pristine state in the Caribbean Islands Hotspot (FAO 2015). Cuba possesses the largest remaining tracts of forest in the Caribbean but these still represent only 30 percent of the original area and a significant part of this comprises reforested land (FAO 2015).

Although clearance for agriculture has been one of the greatest threats to native forests in the insular Caribbean, declines in some agricultural markets have led to abandonment of degraded areas and a subsequent expansion of secondary forest, which often still has high biodiversity and ecosystem service values. Natural succession has been slowly reforesting Puerto Rico since the 1950s, when government policies promoted industry over agriculture. Natural forest cover has expanded from a low of 6 percent of the island in the 1940s to 58 percent by 2015, due to reforestation and the abandonment of shade coffee plantations (Helmer *et al*. 2002, FAO 2015). Cessation of traditional agricultural activities on Curaçao, due to economic factors, theft of livestock and produce, and an increase in speculative private land ownership, has led to re-growth of dense secondary woodlands, especially on the western half of the island, and, in the US Virgin Islands, secondary forest has regenerated following the end of plantation agriculture.

Secondary forests provide important ecosystem services, with protection of watersheds and provision of water supply and provision of fuelwood being particularly important in the Caribbean. These forests could potentially provide important opportunities for carbon capture, as part of climate change adaptation and mitigation strategies. To date, however, forest conservation efforts in the hotspot have largely focused on remaining areas of primary forest, while secondary forest and abandoned agricultural areas have frequently been targeted by planners for development, as they are perceived to have much less importance (Massol González *et al*. 2006).

Agricultural practices that degrade the environment or increase pressure on already scarce resources are common in the region and the root cause of much erosion, pollution and sedimentation, which threaten

both the marine and the terrestrial environment and can also increase the likelihood of fires (Burke and Maidens 2004).

Extensive areas of freshwater wetland habitat in the Caribbean, such as marshes and ponds, have also been drained and converted due to agricultural schemes, or degraded through overgrazing by livestock. Recent, accurate figures for the area of wetland lost do not exist. A 1990 survey of coastal wetlands (predominantly mangroves) on 16 eastern Caribbean islands revealed evidence of damage at almost all sites visited, with more than 50 percent showing severe damage (Bacon 1993). Uncontrolled aquacultural development has also led to loss and degradation of wetland habitats in some coastal areas, including coastal lagoons and mangroves in some countries. Poor siting, construction and operation of ponds in areas exposed to storms and floods can introduce exotic species and diseases into lagoons and other habitats in coastal ecosystems. Exotic fish species, such as Nile tilapia (*Oreochromis niloticus*) and trout (*Salmo* spp.), for instance, have been accidentally or intentionally introduced into local streams, lagoons and wetland areas through aquaculture projects, where they compete with indigenous fish populations (CEC 2001, Kairo *et al*. 2003, FAO 2006c).

6.1.3 Invasive and Other Problematic Species, Genes and Infectious Diseases

The establishment and spread of IAS (and other problematic species, genes and diseases) have been implicated in extinction risk in the Caribbean (IPBES 2018). IAS pose a threat to 19 percent of the hotspot's globally threatened species, especially its endemic species (IUCN 2017b). The most damaging IAS on islands are typically terrestrial vertebrates, such as goats, feral cats, pigs and rats. These species are responsible for more than half of all animal extinctions on islands globally. Invasive alien species contribute to extinction risks to the greatest degree in North America, followed by the Caribbean.

Like other islands, Caribbean habitats are vulnerable to impacts of invasive species, because of the generally small populations of indigenous species, the evolutionary effects of isolation, and the release of introduced species from natural enemies (Kairo *et al*. 2003). The spread of IAS is facilitated in the Caribbean by the region's dependence on imports, its high degree of exposure to extreme weather events, and the multiplicity of pathways that alien species may use to reach the islands.

Historically, many species have been either deliberately or accidentally introduced, and this process has continued to the present. In many places, these populations have persisted, causing ongoing devastation to islands. For several other IAS, such as marine species and agricultural pests, the potential for introduction, whether deliberate or accidental, has grown in recent years, through globalization and the associated increase in international trade, tourism and transport links. In addition, changes and development of some of sectors, notably agriculture and aquaculture, have offered opportunities for introduction and spread of IAS. The risk of accidental introduction of diseases and pathogens and the potential escape of traded species into the wild constitute a "hidden cost" of international trade, one that is a serious risk to the economic, as well as ecological, health of all nations in the hotspot. According to the Federal Maritime Commission, trade and shipping between the southeastern USA, the Caribbean, and Latin America may triple from 2005 levels by the year 2020, as a direct result of the Dominican Republic–Central America Free Trade Agreement. While the catastrophic impact of invasive terrestrial vertebrates on islands is well known, for most other IAS there have been no experimental studies to verify their exact impacts.

IAS introduction and disturbance are ongoing phenomena in the hotspot, with countries grappling with new and emerging threats. For example, the invasive seagrass species *Halophila stipulacea* has spread

rapidly throughout the eastern Caribbean since 2002 and is a potential threat to the functioning of local seagrass ecosystems (Smulders *et al.* 2017). Now found as far north as the US Virgin Islands and Puerto Rico, the implications of this IAS on marine conservation appear grave and are currently under study.

A review of invasive species threats in the Caribbean region identified 522 alien species, comprising 449 terrestrial (390 naturalized/invasive), 55 freshwater (10 naturalized/invasive), and 18 marine (16 naturalized/invasive), with 281 plant species reported as naturalized or invasive, of which 179 are trees (Kairo *et al*. 2003). Introduced terrestrial species vastly outnumber introduced freshwater and marine species, although this is probably a reflection of under-sampling of the marine environment (Kairo *et al.* 2003). Numbers on individual islands can be very high. For instance, 138 species have been reported as invasive in the Dominican Republic (Ministerio de Medio Ambiente y Recursos Naturales 2011b), including 17 of the 100 world's worst invasives (Lowe *et al*. 2001), and in the Cayman Islands more than 100 exotic alien species of flora and fauna has been recorded (JNCC 2007). Current information on species known to be naturalized or invasive in the insular Caribbean can be found on the Global Invasive Species Database of the IUCN Invasive Species Specialist Group.[20]

Major pathways for the introduction of IAS onto the islands of the Caribbean include through trade in agricultural products, the pet and aquarium trades, ill-conceived biological control schemes, agricultural, forestry and aquaculture development projects, and horticulture. The latter is of particular concern, and has a strong connection with the tourism sector through horticultural imports. In most Caribbean islands, live plants comprise the majority of nursery imports, which largely come from the USA (local nurseries often obtain their products from brokers in Florida for re-sale; major developments, including resorts and golf courses, tend to import directly from the USA). On Anguilla, for instance, Cuban tree frog (*Osteopilus septentriionalis*) and giant African snail (*Achatina fulica*), were probably introduced by the import of containers containing exotic plants or other building materials to supply the development of the tourism industry. The snail has also been reported in the Dominican Republic.

Phytosanitary rules are governed through the International Plant Protection Convention of 1952, and all the insular Caribbean countries are either signatories or adhere to the convention. Nevertheless, biosecurity at the borders is relatively lax, and the sheer volume would overwhelm existing quarantine measures. Few records are available on port interceptions of invasive species.

Given that it is the major consumer of imported horticultural products throughout the region, there is a need for proactive engagement with the tourism sector (architects, landscape architects, contractors, landscapers, and nursery vendors, as well as with national inspection and quarantine services) to agree measures to reduce the risk of introduction of IAS. At the local level, areas abandoned after slash-and-burn agriculture do not regenerate quickly with native vegetation but are colonized by invasive plant species. Fortunately, for the most damaging IAS, invasive terrestrial vertebrates, biosecurity systems are well developed and, when in place, reintroduction, accidentally or on purpose, to islands where these species have been eradicated is rare.

Regional initiatives and groups that seek to address IAS in the insular Caribbean include the Caribbean Regional Invasive Species Intervention Strategy (CRISIS) and the Caribbean Invasive Species Working Group (but deal mostly with agricultural pests). In 2013, the International Coral Reef Initiative spearheaded the development of a regional strategy to guide action to control the invasive lionfish (*Pterois volitan*) in the wider Caribbean. A major GEF-funded regional project, *Mitigating the Threats*

[20] Available at http://www.issg.org/

of Invasive Alien Species in the Insular Caribbean, implemented by UNEP and executed by CABI with a range of national, regional and international partners, finished in 2014 after focusing on: development of national strategies; establishment of Caribbean-wide cooperation and strategy; improvement of information management; prevention of introductions; and early detection. However, there has been little regional-level follow-up and a major programmatic gap in the Caribbean remains the practical eradication of IAS at scale, building on the experience of the few eradication projects that have been implemented.

At the national level, most countries in the region have identified IAS as one of the major threats to their biodiversity and highlight the need for control activities among the primary goals of their NBSAPs or in their National Reports to the CBD. The Bahamas, for instance, have a National Invasive Species Strategy, which was updated through the GEF project mentioned above, and Jamaica's NBSAP outlines 45 specific goals relating to IAS, with the preparation of an IAS management strategy listed as a key priority. Some countries, like the Dominican Republic, have developed national strategies for invasive species control and eradication (Ministerio de Medio Ambiente y Recursos Naturales 2011b).

Quantitative data on Caribbean invasive species (numbers, distribution and impacts) are considered inadequate and this limits the ability to design effective responses. The lack of information remains a weakness that needs to be addressed (Kairo *et al*. 2003). There is also a low level of awareness, from the general public to policy-makers, of the threats posed by IAS and their environmental and economic impacts. A particular challenge to addressing IAS arises from the fact that many of the major pathways for species introductions (those related to trade and tourism, for example) are critical to national economies.

Emerging infectious diseases are a newly recognized threat to biodiversity globally and in the Caribbean. Amphibian chytridiomycosis is a striking example of this threat (Daszak *et al*. 2000). Caused by the recently described chytrid fungus *Batrachochytrium dendrobatidis*, chytridiomycosis is a disease that is capable of driving amphibian populations and species to extinction (Skerratt *et al*. 2007, Chenga *et al* 2011). More than 200 species of frogs and salamanders are known to be susceptible to infection, and population declines attributed to the disease have occurred throughout Australia, the Americas, and Europe (Berger *et al*. 1998, Lips *et al*. 2006, Bosch and Rincon 2008). For many of the 122 amphibian species extinctions that have occurred since 1980, particularly those where species have disappeared from pristine areas, chytridiomycosis is suspected as the primary cause (Skerratt *et al*. 2007, IUCN 2008).

Within the Caribbean, the amphibian chytrid fungus is known to occur on the islands of Puerto Rico, Hispaniola, Dominica, Cuba, and Montserrat. The disease has been implicated in the decline of mountain chicken on Dominica and Montserrat, and is suspected in the probable extinction of three species from Puerto Rico (Burrowes *et al*. 2004, Díaz *et al.* 2007).

Chytridiomycosis presents a unique challenge for biodiversity conservation, because the pathways of transmission, and the way it kills amphibians are not well understood. It is thought to be transmitted by the introduction of infected animals, water, vegetation, or soil to a new region. In addition, species are differentially affected by the disease: it is highly lethal for some species, such as mountain chicken, while others can harbor sub-lethal infections and spread the fungus to naïve or highly susceptible species. Thus, habitat protection is necessary but not sufficient to safeguard many species from chytridiomycosis. Species-specific conservation actions will be required, in addition to site protection, to safeguard the amphibian populations that are most vulnerable to this threat.

6.1.4 Residential, Commercial, Industrial and Tourism Development

Loss of habitat to residential and commercial development has been identified as a threat to 17 percent of all globally threatened species in the hotspot (IUCN 2017b). The considerable growth of the populations and economies of most Caribbean countries in the last 50 years has been accompanied by extensive urban industrial and commercial developments and associated infrastructure, which has occurred without proper planning. This has led to the destruction and degradation of huge areas of natural habitat, transforming the landscape and character of many Caribbean islands. Impacts have included: pollution from untreated sewage from residential and tourism developments; contamination from industrial sites; clearance of natural coastal vegetation for construction of housing, hotels, resorts, commercial complexes and roads; clearance, dredging, channelization or in-filling of coastal wetlands (lagoons, estuaries, coastal marshes) and mangroves for marinas and ports; sand mining and beach and dune erosion. As residential and tourist populations have grown, there has been an increase in the consumption of water from surface and ground water sources, contributing to salination, changes in ecosystem function, and decreased availability of water supplies. Housing and commercial/industrial initiatives have been sited on agricultural lands, displacing farmers to more marginal lands. Although these developments have been a major force for economic growth, modernization and improvements in human well-being in the region, they have had negative impacts on the environment.

Of greatest concern has been the enormous, uncontrolled, growth of tourism in the Caribbean region, with the widespread construction of hotels, marinas and associated developments, especially along coasts with white-sand beaches and coral reefs offshore, often resulting in beach erosion and other profound impacts (UNEP RCU 2001, UNEP 2004b). These are typically leeward, low-wave-energy beaches: preferred nesting sites of remnant populations of the Critically Endangered hawksbill turtle. Development has often meant the complete removal of natural littoral vegetation, planting of ornamental trees, shrubs and grass for lawns and golf courses, filling-in of mangrove areas for marina developments and mosquito control, and construction of new roads to give access to coastal areas that previously could only be reached on foot or by sea. Overall figures for the area of natural habitats lost to tourism development in the hotspot are not available but the total area is considered enormous, with very few coastal areas now unaffected. Infrastructure projects, such as road construction, are often inextricably linked to major tourist developments and can have profound effects on biodiversity.

Many tourist sites are operating beyond their carrying capacities, from both biophysical and management perspectives. Influxes of high numbers of tourists during the high season, for instance, frequently overtax public services, reduce local food stocks and water supplies, and generate vast amounts of solid and liquid wastes, when local municipalities have very limited waste-management facilities. However, some tourism operators are taking a more responsible approach to the environment. For instance, the Caribbean Hotel and Tourism Association (CHTA), based in Puerto Rico, has been a major supporter of sustainable tourism, particularly through the Caribbean Alliance for Sustainable Tourism (CAST) and through its promotion of the Green Globe and Blue Flag certification programs. In collaboration with the Barbados-based Caribbean Tourism Organization (CTO), the region's main tourism trade organization, the CHTA has developed a position paper on Caribbean tourism and climate change and is supporting an initiative to make Caribbean tourism carbon neutral.

6.1.5 Climate Change and Severe Weather Events

While it is accepted that climate change has adversely affected biodiversity at the genetic, species and ecosystem levels, and will continue to do so, there is an incomplete understanding of the full scope of

how changes in climate already underway are affecting species and ecosystems in the Caribbean Islands Hotspot (see Section 10.3). So, although climate change has been identified as a threat to just 9 percent of threatened species in the analysis of documented threats on the IUCN Red List (IUCN 2017b), it is expected that, over time, it will be recognized as a greater threat to biodiversity in the hotspot. Climate change interacts with other threats to increase the vulnerability of species and ecosystems. Mangrove ecosystems, for example, already weakened by conversion to human use, are susceptible to such impacts as sea level rise, changing ocean currents and increased temperature.

6.1.6 Human-related Disturbance

The increase in the human population in the region, the spread of agriculture, and urban and tourism developments mean that there are now few relatively undisturbed natural areas outside of protected areas and inaccessible mountain regions that are not subject to some form of human disturbance. Even within protected areas, the growth in numbers of visitors in recent years has led to degradation of vegetation and disturbance of fauna, due to carrying capacities being exceeded, such as along the Blue Mountain Peak trail in Blue and John Crow Mountains Protected National Heritage KBA in Jamaica.

Fire is a major cause of human-induced disturbance in the Caribbean and is commonly used to clear land for agriculture and settlements, prepare sugar-cane fields for cutting, clear undergrowth in forests, and encourage new growth in grassland and lightly wooded areas for pasturage (FAO 2006b). Forest fires in the insular Caribbean mostly affect dry forest types (500 to 1,000 mm of mean annual rainfall) but even montane forests with higher rainfall (1,000 mm or more per year) will burn in exceptionally dry years (Robbins *et al*. 2008). Much of the vegetation of the Caribbean Islands Hotspot (for instance, Jamaica, Puerto Rico, and the Lesser Antilles) is not fire-adapted and is adversely affected by fire. Indeed, conservation efforts to protect forests are often thwarted by deliberate setting of fires, even within protected areas and forest reserves, to convert them to grasslands or agricultural land. However, Bahamian (including Turks and Caicos), Hispaniolan and Cuban pine forests, several species of palm that form extensive savannas on Cuba, and some herbaceous wetland types and localities on these and other islands, such as Zapata Swamp on Cuba, have evolved with fire and are fire-dependent for their continued existence in their present forms. Other species are indirectly dependent on fire. For instance, the primary nest tree of Cuban parrot is the fire-adapted savanna palm *Colpothrinax wrightii*. Consequently, fire is not only a threat in the region but a critically important natural process in some systems and an important land-management tool, which has the potential to be managed to minimize its negative or maximize its positive aspects (Myers *et al*. 2004a,b).

Information on fire in the region is limited and, in many cases, non-existent. This represents a substantial research gap, given the potential loss of habitat to fire and the consequent vulnerability to invasive species.

6.1.7 Pollution

The main sources of pollution in the insular Caribbean are: sewage and wastewater from urban sources (often untreated or insufficiently treated); pesticide and nutrient additives from agricultural activity (principally nitrates, phosphates, pesticides, fungicides and herbicides from non-point sources); discharges and accidents involving heavy metals and oils from industrial facilities (also oil from marine sources that washes ashore); toxic chemicals from mining operations; and solid waste from a variety of sources. Eutrophication is also caused by the disposal of large quantities of waste from sugarcane extraction (called “dunder” on some islands), which is dumped into drains and rivers. Waste management and disposal capability (both solid and liquid) is very limited in the insular Caribbean, and, as a result,

pollution of coastal areas, especially from land-based sources, is a major threat to coastal biodiversity (including mangroves, beaches, and coastal lagoons). Waste management is a major environmental issue in the Caribbean, where growth in the urban population, industrial activity and tourism continues to outstrip infrastructural capacity to handle waste, leading to waste often being dumped in unlined landfill sites. Riverine and coastal ecosystems are negatively affected by untreated or partially treated sewage. The use of non-biodegradable, disposable packaging material, such as food containers, aluminum beverage cans and plastic bags, adds to the solid waste problem. The expansion of the tourism industry and the rise in the number of cruise ship tourist arrivals have also contributed to the increase in the total quantity of solid waste being generated in the hotspot.

Although most dangerous pesticides, such as DDT, dieldrin and toxaphene, are no longer used in most Caribbean countries, some can be long-lasting and still pose a threat. For instance, in Guadeloupe, chlordecone, an organochlorine-based insecticide, once used intensively against weevils in the banana plantations, and banned since 1993, has permanently poisoned some of the soils and waters of Guadeloupe (Belpomme 2007). Efforts have been put in place to ensure access to potable water but the soils of some parts of this and other islands in the Antilles have been irretrievably polluted. Heavy metal contamination is also a problem in places, for example Salines Lagoon in Martinique. Most of the countries of the hotspot are signatories to the Stockholm Convention on Persistent Organic Pollutants (POPs), which seeks to protect from chemicals that remain intact in the environment for long periods.[21]

Unfortunately, figures for overall pollution loads of soils and rivers in the region are unavailable, due to inadequate monitoring (a reflection of lack of resources) on most islands, and their impact on terrestrial ecosystems and biodiversity is poorly known. Hence, it is difficult to evaluate how serious pollution is in relation to other threats. Much more research has been focused the impact of pollution on the marine environment, where municipal, industrial and agricultural waste and run-off account for as much as 90 percent of all marine pollution in the region (CEP 2003, Heileman and Corbin 2006). A major program addressing pollution in the insular Caribbean is UN Environment's Caribbean Environmental Programme (CEP), which seeks to reduce pollution of the marine environment by improving coastal management and environmental monitoring, promoting sustainable agriculture, improving sewage treatment and restoring contaminated bays. It also aims to develop best management practices for erosion and sediment control, water and land-use management, and pesticide and nutrient control.[22] Pollution is also recognized as having significant socio-economic impacts in the region, including on human health (UNEP 2004a,b).

6.1.8 Energy Production and Mining

Mining

Extensive loss of natural habitats has also occurred due to mining activities in some countries. This is most notable on Jamaica, where significant areas, particularly of native forest in the center of the country, have been lost due to bauxite mining and limestone quarrying, and largely pristine tracts of wet limestone forest are threatened. Bauxite mining has also occurred on Cuba and Hispaniola, although nickel, cobalt, iron and copper are Cuba's main mining products.

The region's mining industries have a patchy record of meeting their requirements to "restore" lands devastated by mining, and governments have a similarly poor record of enforcing the penalties for failure

[21] See http://chm.pops.int/Countries/StatusofRatifications/PartiesandSignatoires/tabid/4500/Default.aspx
[22] See http://www.cep.unep.org

to do so. EIAs are often little more than paper exercises in many countries. Moreover, restoration attempts have not been very successful in revegetating areas with native species. Instead, common, widespread, weedy species tend to dominate. Moreover, given the long history of mining in the region and the continued importance of the mining sector to the national economies of some of the high biodiversity countries, ecological restoration of mine workings remains a priority research area.

Apart from direct damage, mining activities in the Caribbean have also opened up access to previously remote areas, facilitating movement of people into these areas (for employment related to the mining activities or support services). In turn, this has led to increased small-scale agriculture, especially slash-and-burn agriculture, illegal hunting, collection of fuelwood and production of charcoal. Even underground mining operations create damage, through clearance of vegetation for surface facilities and dumping of tailings, with a risk of pollution from poorly constructed or managed effluents and tailings ponds.

There has also been an increase in illegal extraction of gravel from riverbeds and sand from beaches for the construction of hotels, resorts and residential houses: practices that are common and widespread in the Caribbean islands. Apart from destroying turtle and seabird nesting habitats and unique littoral faunal and floral communities, beach sand mining causes sedimentation, and disturbs the hydrology, which has negative impacts on neighboring coral reefs and other marine ecosystems. Although their cumulative impact is thought to be significant, these activities tend to be localized and small-scale, making enforcement difficult.

Energy Production

The insular Caribbean relies heavily on imported petroleum for its energy (90 percent of all energy used) and there are no significant coal deposits on the islands. Wind (Barbados), hydropower (Dominica, Dominican Republic and St. Vincent) and solar energy are seen as potential alternative sources of energy. Installation of generation capacity for these "clean" forms of energy involves a certain amount of habitat loss. In addition, wind farms may present a threat to bats and birds, which are exposed to injury and death from turbines blades. Consequently, the siting of future wind farms is critical and thorough EIAs are needed in all cases.

6.1.9 Geological Events

There are about 30 active or potentially active volcanoes in the Lesser Antilles. Volcanic activity no longer occurs in the northern part of the region. Major events in the last 100 years have only taken place on the major peaks of Guadeloupe, Martinique, St. Vincent, and, most recently, Montserrat. The eruption on Martinique in 1902 was responsible for the extinction of an endemic rodent, Antillean giant rice rat (*Megalomys demarestii*). Following a major eruption, the vegetation takes several decades to return to an appearance of normality. The vegetation close to permanent active fumaroles and sulfur springs, such as on Montserrat, Dominica and Saint Lucia, is specialized and limited to a few sulfur-tolerant genera, such as *Clusia* and *Pitcairnia*.

6.1.10 Threats from Development Programs and Initiatives in Region

There is a clear need for more integrated, cross-sectoral land-use planning, involving tourism, agriculture, forestry, industry, transport, mining, energy and environment, that takes into account the full economic, social and environmental costs and benefits provided by ecosystem services (see Section 4.6). There is also a need for the stricter implementation of EIAs, as well as ecosystem service valuation, to increase

awareness of the value of natural ecosystems among politicians, other decision-makers and planners. Increasing numbers of the major international financing banks and institutions are adopting the Equator Principles (see www.equator-principles.com) which require lenders to ensure that the projects they finance are developed in a manner that is socially responsible and reflects sound environmental management practices (meet international best practice and standards), including rigorous and comprehensive EIAs. Consequently, more attention needs to be given to alerting international financiers of the potential threats from developments they are financing in KBAs.

6.2 Root Causes and Barriers

6.2.1 Root Causes

There is a complex mix of interacting socio-economic, political, cultural and environmental factors driving environmental change and threatening biodiversity in the insular Caribbean. Principal among these are increasing population and material consumption, poverty and inequitable access to resources, the inherent economic and environmental vulnerability of the islands to external forces, such as changes in global trade regimes, and climate change. Some of these, such as poverty, are local or national issues, while others, such as climate change, require attention at the global level to solve. All of these drivers can be either exacerbated or mitigated by public policies and institutional arrangements, at national, regional and international levels.

Population Growth and Movements

At a fundamental level, many trends affecting biodiversity and ecosystems in the insular Caribbean reflect the limited land available for an ever-increasing number of users. The Caribbean islands have some of the highest population densities in the world. The regional population in 2016 was approximately 38 million, and it is projected to increase to around 46 million by 2030 (Population Reference Bureau 2017). Some countries, like Haiti, are expected to face a substantial population rise (see Section 7.1.2).

All countries are witnessing rapid rates of urbanization and migration from rural to urban areas, resulting in increased demand for natural resources, particularly water, energy, and land for building, with increased problems associated with waste management and sanitation. These demographic changes have increased the concentration of people in ecologically sensitive areas, particularly coastal zones and mountain slopes, which has led to severe environmental degradation in some countries. The islands' relatively high population densities also mean that there is the potential for conflict over scarce resources, especially over land, particularly in the coastal zone, and, on the drier islands, water.

Rapid Economic Growth and Increasing Consumption

Along with increasing populations, many countries in the region have seen a rise in GDP and average incomes in recent decades, with the rise of a middle class that has generated demand for developed world goods and lifestyles. Along with increased trade, which has increased the incidence and risk of IAS introduction, the change in consumption patterns has led to increased pressure on land for housing and urban development, as well as environmental services, particularly energy and freshwater. In the case of water, especially the reliable provision of clean water, demand is exceeding natural supply capacity. This is caused in part by the huge demands of the agriculture and tourism sectors, and by a reduction in supply, quality and reliability as a result of forest conversion, pollution and soil erosion in river catchments. Agriculture is the largest consumer of water in the Caribbean. For instance, it accounts for over 90 percent of the total water used in Haiti. The tourism sector also consumes enormous amounts of water, and the low limestone islands of the eastern Caribbean that experience the highest rates of water scarcity are also

among the most attractive for mass tourism. By international standards, Barbados, Antigua and Barbuda, and Saint Kitts and Nevis are already considered "water-scarce" countries, which is to say that they have a water supply below 1,000 m^3 per capita per year (UNEP 2008). Changes in rainfall patterns and pronounced periods of localized drought associated with climate change are expected to increase water stress.

Poverty and Inequity

The Caribbean islands are, apart from Haiti, all middle or high income countries. However, there are high levels of economic inequity in some countries (see Section 7.2.3). Poor people in the Caribbean often depend directly on natural resources but are frequently forced to use them unsustainably because of immediate survival needs. Consequently, poverty is considered a root cause of biodiversity and ecosystem loss and degradation on many of the islands. Although marginalized groups in Haiti are responsible for some of the country's environmental degradation, Haitian refugees who risk their lives on sea crossings to neighboring countries may be as much environmental refugees as they are economic or political ones (Brown *et al.* 2007).

Lack of legal ownership of, and access to, land and resources are two of the key determinants of poverty in the Caribbean. In addition, poor groups and individuals have little voice in decision-making, and fewer rights, and are often displaced or dispossessed by existing power structures and vested interests. Control over natural resources and their use has been, and remains, in the hands of the wealthy and powerful, including governments. Consequently, poor farmers and rural communities have few alternatives to cutting down the remaining forests and growing subsistence crops on marginal erosion-prone lands or overexploiting natural resources for food and to earn essential cash for their short-term survival. Lacking technical support, agricultural practices on hillsides tend to be poor, resulting in low yields, increased soil erosion and disruption of hydrological systems (this is most dramatically demonstrated in Haiti, although the problem exists throughout the region), which after a short period leads to further demand for land, with additional clearance of forests and other natural habitats. Furthermore, the lack of clear property rights acts as a disincentive to invest in sustainable land management practices. Given their reliance on biodiversity and ecosystem services, those most hurt by environmental degradation are usually the rural poor themselves.

Policies and Incentives that Damage the Environment

With the exception of Cuba, governments in the Caribbean have followed the dominant global economic models, through policies based on export-orientated development, especially for agriculture, and, in recent years, provision of services, especially in the tourism and financial sectors. These development policies have generally failed to integrate conservation and resource management considerations in a systematic and participatory way.

Associated with these policies have been economic incentives/subsidies, grants and financial arrangements to favored sectors, such as reduced tariffs on water and electricity, tax exemptions on investments and exports, subsidized prices on imported fertilizers and pesticides, and construction of transport and communication infrastructure to facilitate development, which have encouraged non-sustainable natural resource extraction and environmental degradation. For instance, government policy in many Caribbean countries has been to expand tourism as a means of generating jobs and foreign exchange, and external investment has been actively pursued, with developers frequently being given favorable terms (see Section 8.4.2).

Apart from national policies, the policies of some of the major donors have been criticized for encouraging the multiplication of development projects without taking into account their impact on biodiversity, including the allocation of funding and subsidies to overseas countries and territories, and outermost regions (Palasi *et al*. 2006).

Dependency, Isolation and Inherent Vulnerability

The Caribbean islands, like other SIDS worldwide, share a number of natural and anthropogenic features that make them particularly vulnerable to impacts from a wide range of internal and external forces that can threaten biodiversity and natural environments and constrain the pursuit of sustainable development (Griffith and Ashe 1993, Kaly *et al*. 2002).

Because of their small size, insularity and characteristics of their natural resource base, most Caribbean countries are dependent on trade and external sources of energy, and, consequently, exposed to external and global changes in trade and markets. Many countries have traditionally had single-crop economies, relying on preferential trade arrangements for their main exports. Some governments have sought to reduce dependence on monoculture agriculture by promoting agricultural diversification. However, in some countries, such as Saint Lucia, there has been concern about the rates at which natural forests have been cleared in response to the diversification thrust. Commercial barriers for Caribbean exports to North America and Europe have increased in recent years, and the region's export markets have been threatened by large trade arrangements, such as the North American Free Trade Association (NAFTA) and the Economic Partnership Agreement (EPA), and preferential markets for products like bananas and rum have been lost.

Many countries also have high levels of external debt but small taxable populations, which presents a challenge to their long-term economic viability. Their openness to external trade also increases their susceptibility to IAS. Preliminary classifications on the SIDS environmental vulnerability index, which measures ecological fragility and economic vulnerability, shows that 17 of the countries/territories can be classified as Extremely Vulnerable or Highly Vulnerable, four as Vulnerable, and one as At Risk, while none are assessed as Resilient (Table 6.2).

Table 6.2: Selected Caribbean Classifications on the Environmental Vulnerability Index for SIDS

Extremely Vulnerable	Highly Vulnerable	Vulnerable	At Risk	Resilient
Barbados* British Virgin Islands* Guadeloupe* Jamaica Saint Lucia* US Virgin Islands*	Cayman Islands* Cuba Dominican Republic Grenada* Haiti Martinique* Montserrat* Netherlands Antilles* Puerto Rico* Saint Kitts and Nevis* St. Vincent and the Grenadines*	Anguilla* Antigua and Barbuda* Aruba* Turks and Caicos*	The Bahamas*	None

Sources: South Pacific Applied Geoscience Commission (SOPAC) http://www.vulnerabilityindex.net/ (accessed Jan 2018) and Kaly *et al.* (2005a,b).
Note: * = Environmental Vulnerability Index trends for countries that are data deficient.

Global Climate Change

Climate change is expected to become a major driver of environmental change in the hotspot and is already having substantial impacts, none of which are fully understood (see Section 10.3).

6.2.2 Barriers to Biodiversity Conservation

There are several constraints that need to be overcome to address the environmental threats outlined above and achieve more effective conservation of biodiversity and ecosystem services. This section reviews the main ones identified at the ecosystem profiling national consultations, which the reinvestment by CEPF will seek to address.

Poor Land-use Planning

Because many environmental problems and risks either derive from or are exacerbated by the pattern of human land use, the quality of urban and rural planning is often of critical importance for achieving environmental sustainability. On the small islands of the Caribbean, with their dense coastal populations, inappropriate land use can have much more significant impacts on the environment than in larger states, and there is less room for error in land-use planning and management (Griffith and Ashe 1993). Land-use planning for agriculture, tourism, industry, forestry and urban development, is still largely confined to individual sectors, with little consideration of the impacts of these plans on other economic sectors or the environment. Strategic environmental assessments, for instance, are not routinely undertaken in the Caribbean, and the environmental costs of development are generally not incorporated into national accounts.

In addition, although the locations of many sites important for the conservation of biodiversity and delivery of ecosystem services have been identified through surveys and mapping exercises in recent years, this information is still not fully integrated into decision-making in planning processes. Consequently, ecologically important sites are still targeted for inappropriate developments.

Limited Capacity and Financial Resources for Biodiversity Conservation and Environmental Management

Although Caribbean island governments have made significant efforts to build institutional and individual capacity (in terms of staffing and financial resources) in the areas of biodiversity conservation, waste management, integrated watershed management, and climate change and disaster mitigation, the lack of adequate capacity remains a major barrier to achieving effective environmental management and sustainable development.

Most of the island states have populations of less than a million people (see Section 7.1.2), with small pools of skilled labor and very limited government budgets for the environment sector, which seriously constrains capacity-building efforts. This has a particular impact on staffing in government agencies. Individuals frequently seek higher education outside of the region due to limited opportunities for training in natural resource management and biodiversity conservation at universities in the Caribbean, often in the US or Canada, where many chose to remain due to better salaries and career opportunities. If they do return, many then enter the private sector or seek employment in unrelated but higher salaried professions in the financial or legal sectors. Consequently, “brain drain” from the region and difficulties with staff retention by government agencies remain important issues affecting capacity in many Caribbean countries. Even on the larger islands, the size of government environment departments, in terms of manpower and financial resources allocated to them, is not sufficient.

The need for capacity building has been highlighted in many of the NBSAPs, NEAPs, national protected area gap analyses, and other national strategies and plans. Protected area management is also highlighted as generally weak in the Caribbean. In spite of considerable investment in recent years by governments and external donors (see Chapter 11), protected area management agencies are still under resourced and

many protected areas have no or minimal active management and are threatened by encroachment and illegal activities.

Many donor-funded biodiversity conservation projects also have significant capacity assessment and building elements but, because of a lack of trained personnel in the target countries, external consultants are still often used in project implementation, which does not address the issue in the longer term (Renard and Geoghegan 2005).

There is a lack of skilled field biologists among government agencies to undertake survey and assessment work, which is needed to inform regulations for terrestrial (and marine) natural resource management. As a result, field surveys are often undertaken through the NGO community or universities.

Perhaps the biggest capacity issue is the lack of staff and resources among agencies tasked with monitoring, surveillance and enforcement of existing national legislation and regulations governing biodiversity conservation and environmental management (such as monitoring and enforcing compliance with EIAs and planning restrictions). This is a particular concern given the continuing pressures from tourism, urban and industrial development in the region. In several countries, policies and legislation are viewed as largely adequate but lack of enforcement and monitoring, as well as poor coordination among agencies, undermines their implementation.

Capacity issues frequently come down to lack of financial resources. Some funding has been short-term and project driven and rarely strategic, and this has worked against building sustainable environment management, whether in the civil society, private or government sector.

Lack of Awareness and Understanding of the Importance of Biodiversity and Ecosystem Services

As well as lack of knowledge, there is a poor awareness and limited understanding of the ecological, economic, social and cultural values of biodiversity, costs of its loss, and its critical importance to human health and well-being among decision-makers (i.e., ministers, politicians, political advisors, economists and land-use planners) and the general public in the Caribbean. Even in relatively developed countries, such as Puerto Rico, the level of public awareness about local biodiversity is low.

Some governments are using a longer-term strategy, with an emphasis on improving coverage of environmental issues in the national school curriculum. Barbados, for instance, has introduced environmental and development concerns into teacher-training programs, while environmental education is an integrated part of primary- and secondary-level school curricula in The Bahamas. These initiatives will, in the long run, increase the proportion of the population with environmental awareness and interest, leading to a greater call for environmental issues to be properly addressed by politicians and other decision-makers, and an increase in the overall pool of individuals with the technical skills required for biodiversity conservation.

There is also a relatively low level of data and information exchange and lesson-learning between countries on environmental issues.

Vested Interests, Corruption and Lack of Political Will

There have been a number of important regional environmental agreements in the Caribbean, including the Georgetown Accord in 1975, the Nassau Understanding in 1984, the CARICOM Ministerial Conference on the Environment in 1989, the St. George's Declaration in 2000, the OECS Environmental

Management Strategy in 2001 and the OECS Development Charter in 2002. Nonetheless, commitment among high-level decision makers is still not translated into the necessary political support for biodiversity conservation. Short-term, and frequently shifting, national economic and political interests often take precedence over long-term local social and environmental impacts. This lack of political will is evidenced by continuing permission for destructive developments in ecologically sensitive areas, usually the result of strong lobbying by vested economic interests, who argue that environmental protection costs and safeguards will reduce international competitiveness.

Weak and Ineffective Policy and Legislation

Although there have been improvements in national policy frameworks and progress with updating and harmonizing environmental policy and legislation in many countries in the region in recent years, there remain policy gaps and challenges (see Chapter 8). For instance, legislation for private reserve establishment and co-management of protected areas is non-existent in most countries in the Caribbean. The Dominican Republic is a notable exception in this regard, having developed legislation for both. Also, while some countries, such as Barbados, the French overseas regions, and US territories, have legislation specifically dealing with the coastal zone, many countries have no special instruments for regulating development in this ecologically critical area. Furthermore, there has been limited integration (mainstreaming) of biodiversity conservation and sustainable environmental management objectives into non-environment sector policy and legislation, and relatively little coverage in development and sector plans. For instance, regulations on the use of pesticides and fertilizers tend to be very weak or non-existent; consequently, these materials are often applied in excessive quantities, which do not improve productivity but contaminate surface and underground water supplies, and negatively impact wildlife.

In some cases, laws do not have clear regulations that provide guidance to developers, which is exacerbated by inadequate environmental codes and standards for land development, buildings, resource utilization, and waste management, which limits the ability of the authorities to enforce environmental protection. Furthermore, individual developments often taken place without adequate assessment of their impact on the local environment and natural resources.

Inefficient Institutional Frameworks, Networks and Collaboration

Previous assessments have also identified several weaknesses in institutional frameworks and operations that constrain the effectiveness of environmental management. Chief among these is that management authority for environmental issues (i.e., biodiversity, forests, water catchments, protected areas, etc.) is frequently split among various ministries and other statutory bodies, whose responsibilities overlap or are unclear, resulting in inefficiency, lack of accountability and/or inaction. This is exacerbated by a lack of institutional mechanisms for coordination and collaboration among the numerous players and programs. Lack of coordination and collaboration between governments and CSOs is paralleled by insufficient inter-donor coordination at a national level. This has been identified as a significant issue in Haiti (Smucker *et al*. 2007), where heightened inter-donor collaboration at policy levels, as well as the targeting of field interventions, was seen as a critical need. Greater sharing of strategy documents, reports of project activities and successes among donors is seen as a critical need.

The prevalent view of the environment as a niche issue is reflected in the lack of systematic integration of environmental objectives into broader sectoral policies and programs, which is partly a reflection of poor understanding among decision makers of the linkages between biodiversity and ecosystem services and local livelihoods, employment and national economies. This gives rise to politically weak and under-funded environment agencies and biodiversity conservation policy still being perceived as incompatible with and limiting to economic development. This is in spite of the presence of national sustainable

development strategies in many countries that highlight the importance of biodiversity. Attitudes towards the environment at senior levels do seem to be changing, however, due to increasing awareness of the impacts of climate change, which is having a real effect in the Caribbean.

Inadequate Public Participation in Decision-making Processes

National and local governance frameworks for environmental planning and management vary greatly among countries but governments are generally highly centralized, often with high levels of state control. Most recent national policy frameworks include provisions for private sector and public stakeholder participation in environmental and development decision-making, such as via National Sustainable Development Councils. Stakeholder participation is also promoted in many regional and international initiatives that Caribbean governments participate in. Caribbean CSOs have been engaging more in national and regional policy and decision-making processes, and are increasingly recognized as important actors in those spheres. However, while CSO participation in governance processes is growing, it is not always adequately supported by mechanisms that facilitate meaningful participation or consider the conditions under which CSOs operate.

Limited Technical and Scientific Knowledge and Poor Availability of Information

Although the Caribbean countries have shown major improvement in research and assessment of their living natural resources in recent years, there are considerable gaps in baseline data and a lack of accurate, up-to-date information, which limits effective evidence-based decision-making for biodiversity conservation, land-use planning, EIAs and environmental monitoring. Lack of data and information also complicates the enforcement of regulations. Information is frequently scattered and difficult to access, with poor coordination and linkage between databases. There have been attempts to overcome some of these problems through the creation of national Clearing House Mechanisms, while the EU-funded *Biodiversity Information for Development (BID)* project is currently attempting to strengthen national biodiversity information and data facilities.

An area of particular importance is the need to demonstrate the economic and social benefits of ecosystem services in the Caribbean to politicians, planners and other decision-makers. To date, there have been few studies on this topic in the region. Also, little consideration has been given to the economic costs of the loss of ecosystem services, which can be enormous and lead directly to loss of life, for example due to reduced protection against extreme weather events. Furthermore, the lack of proper accounting of the value of ecosystem services, means that the costs of environmental protection tend to be over-emphasized, and the benefits tend to be under-estimated.

There is also a general need for more collection, analysis and translation of technical information into formats suitable for decision-makers and the public, in order to better communicate issues such as the value of biodiversity for tourism, the impacts of development on biodiversity, and the costs of biodiversity loss.

7. SOCIO-ECONOMIC CONTEXT

Although the Caribbean islands are, to some extent, culturally, politically, economically, and socially diverse, there are notable commonalities in history, culture, and ethnic composition. These include a history of European colonization that led to the dominance of the plantation system and the creation of Creole societies built on the early elimination of indigenous people and import of slave and indentured labor. Caribbean cultures grew out of a blend of traditions from various societies and continents. The region is ethnically diverse, with large numbers of people of African descent and relatively small indigenous Amerindian populations (Brown *et al.* 2007). Another shared feature of the Caribbean islands is their small, open economies, which are vulnerable to external economic shocks and natural disasters.

The Caribbean's infrastructure-driven development model comes at the expense of biodiversity (Economic Commission for Latin America and the Caribbean 2015, UNEP 2016b). This is at odds with the high level of dependence by Caribbean countries on natural resource-supported economic activities, such as fisheries, agriculture, and tourism. Although the natural resource base is of great economic importance in the hotspot, the value of ecosystem services is still not incorporated into development planning, and overall there are few economic instruments across the Caribbean that promote biodiversity conservation. This chapter provides an overview of the socio-economic context of the hotspot, with a particular focus on the issues and trends that influence biodiversity conservation and environmental management.

7.1 Human Demography and Impact on the Environment

7.1.1 Historical Context

There had been several waves of human colonization of the Caribbean before its 15th century 'discovery' by Europeans. The earliest archaeological evidence of settlement dates back 6,000 to 7,000 years before present (Fitzpatrick and Keegan 2007). Three main groups were present before Europeans arrived: the Ciboney people in parts of Cuba; the Arawak (Taino and Lucayan) people across the Greater Antilles and The Bahamas; and the Kalinago (Carib) people in the Lesser Antilles. The arrival of the Europeans led to drastic population declines in the indigenous inhabitants and their eventual disappearance from most islands within a few generations. However, in some islands, including Dominica, the Dominican Republic, Jamaica, Puerto Rico, and St. Vincent and the Grenadines, there are still families and communities who identify as first peoples descended. The largest officially recognized population is in Dominica, where the Kalinago have territorial rights.

The contemporary Caribbean is a complex mosaic of cultures and ethnic groups, combining indigenous American, Hispanic, African, Anglo-Saxon, French, Asian and Middle Eastern cultures. Settlement histories on the islands are complex and often very different, sometimes even within the same country. Between the 16th and 19th centuries, millions of enslaved Africans were transported to the Caribbean to support the plantation economies that were a feature of the European model of colonization.[23] In the British colonies, the continued need for labor to support the plantations after the abolition of slavery in 1834 gave rise to the system of indentureship, which lasted until the early 20th century. Indentured

[23] An estimated 12.5 million Africans were forcibly brought to the Americas and sold into slavery. Great Britain shipped 3.1 million Africans across the Atlantic Ocean between 1662 and 1807, most of whom ended up in the Caribbean. See http://www.nationalarchives.gov.uk/caribbeanhistory/slavery-negotiating-freedom.htm.

laborers initially came from Europe and then later from India, China and Africa. Maronite and Orthodox Christians from Lebanon, Palestine, and Syria fleeing Ottoman Empire persecution in the late-19th to early-20th centuries also became part of the cultural and economic fabric of some of islands. Although Portugal did not have a colonizing presence in the region, Caribbean societies also bear a Portuguese influence, thanks to Sephardic Jews fleeing the Spanish Inquisition, who settled in the region in the 15th century, and merchants from Madeira and other parts of Portugal, who followed in subsequent centuries.

The cultural complexity of the Caribbean is reflected in the multiple languages used in the region. The islands can be broadly classified as Dutch, English, French, and Spanish-speaking, reflecting the languages of the major colonizing European states. In addition to these official languages, there are mass vernaculars in each country that reflect a creolization of language, with influences from European, African and indigenous tongues. The official language in almost all the region's countries is a variant of the European standard, except in Haiti, where the official languages are French and Creole (Kwéyòl).

The transformation of the natural environment in the Caribbean Islands Biodiversity Hotspot is linked to human settlement. The Amerindian peoples of the Caribbean did not devastate natural habitats, but they did introduce alien species of plants and animals, primarily from South America, that have since become integral parts of Caribbean ecosystems (CEPF 2010). This "creolization" of flora and fauna was accelerated by the Europeans and the "Columbian Exchange", with additional species being introduced from South and Central America, Africa, Asia, Europe and the Pacific. The radical transformation of the hotspot's natural environment came with the European plantation system of the colonial era, which marked the beginning of a wave of ecosystem destruction that has left no more than 23,000 km² or 10 percent of the islands' original vegetation in a pristine state. Forest clearance for sugarcane and other plantation agriculture started in the 16th century and intensified in subsequent centuries, leading to widespread deforestation throughout the region.

7.1.2 Population Trends

In 2016, the regional population was approximately 38 million. The most populated islands are Cuba (11.2 million), the Dominican Republic (10 million) and Haiti (8.9 million) but the highest population densities occur on Sint Maarten, Saint-Martin, Barbados, Aruba and Puerto Rico (Table 7.1).

Late expanding demographic transition. Caribbean people are living longer, having fewer children, and the rate at which the region's population is growing has slowed. Experts say this trend will continue until around the 2030s (Jones 2015). The region is in what is known as the third or 'late expanding' stage of the classic demographic transition model, which is typically associated with some level of social, economic and political stability as well as improved economic conditions, an increase in women's status and education, and access to contraception. In Cuba, the fertility rate fell from 4 births per woman in 1970 to 1.4 in 2016. In Saint Lucia, it went from 6.1 births per woman in 1970 to 1.5 in 2016 (World Bank 2017b).

Table 7.1 Key Human Development Indicators for the Insular Caribbean

Country	Area (km^2) [1]	Population in 2016 (except underlined)[2]	Population density (# people per km^2)	GDP per capita in U.S.$ 2014[3] (except underlined)[2]	Net official development assistance received (percentage of gross national income, 2014)[4]	Human Development Index (HDI) Rank (2015)[4]	Change in HDI Rank (2010-2015)[5]	Life expectancy at birth (2015)[6]	Infant mortality rate (per 1,000 live births in 2015)[4]	Under 5 mortality rate (per 1,000 live births in 2015)[4]	Pop. living below $1.90/ day (percent) 2005-2014[4]
Anguilla*	90	14,723	164	21,493.30							
Antigua and Barbuda	440	88,566	201	13,731.10	0.2	62	-7	76.1	5.8	8.1	
Aruba*	180	110,292	580	25,750.80				75.1			
Bahamas	13,880	373,480	27	22,217.50		58	-6	75.4	9.9	12.1	
Barbados	430	274,633	639	15,360.10	0.4	54	2	75.6	14	13	
Bonaire*	290**	18,250 (2014)**	63	23,548.63 (2013)**							
British Virgin Islands*	150	28,054	187	30,501.50							
Cayman Islands*	264	59,054	227	58,808.20							
Cuba	109,880	11,238,661	101	7,274.30	0.1	68	-12	79.5	4	5.5	
Curaçao*	444**	150,563	339	20,282.70							
Dominica	750	71,293	95	7,361,20	3.1	96	-8	75.2[4]	19.6	21.2	
Dominican Republic	48,670	10,075,045	207	6,147.40	0.3	99	0	73.7	25.7	30.9	2.3
Grenada	340	110,566	325	8,312.60	4.5	79	-3	73.5	10.8	11.8	
Guadeloupe*	1,700	400,132	234	23,395.37 (2012)**							
Haiti	27,750	8,373,750	302	813.40	12.3	163	-2	63.0	52.2	69	53.9
Jamaica	10,990	2,729,112	248	5,003.80	0.7	94	-6	75.8	13.5	15.7	1.7
Martinique*	1,130	378.243	344	25,423.64 (2013)**							
Montserrat*	100	5.045	50	12,384.20							
Puerto Rico	8,870	3,411,307	381	28,122.90				79.6			
Saba*	13**	1,990 (2012)**	153	17,242.90 (2012)**							
Saint Kitts and Nevis	260	46,398	129	15,510.40	3.8	74	2	74	8.4	10.5	
Saint-Barthélemy	25**	9,417	377	30,707.98 (2013)**							

Country	Area (km^2) [1]	Population in 2016 (except underlined)[2]	Population density (# people per km^2)	GDP per capita in U.S.$ 2014[3] (except underlined)[2]	Net official development assistance received (percentage of gross national income, 2014)[4]	Human Development Index (HDI) Rank (2015)[4]	Change in HDI Rank (2010-2015)[5]	Life expectancy at birth (2015)[6]	Infant mortality rate (per 1,000 live births in 2015)[4]	Under 5 mortality rate (per 1,000 live births in 2015)[4]	Pop. living below $1.90/ day (percent) 2005-2014[4]
Saint Lucia	620	172,818	279	7,655.00	1.3	92	-8	75.3	12.7	14.3	
Saint-Martin*	54**	36,457	675	17,363.77 (2014)**				79.5			
St. Vincent and the Grenadines	390	110,255	283	6,668.90	1.3	99	-6	73.1	16.6	18.3	
Sint Eustatius*	21**	3,897 (2012)**	186	26,583.22 (2012)**							
Sint Maarten*	39**	33,609	862	28,084.10							
Turks and Caicos*	950	37,910	88	23,614.70							
U.S. Virgin Islands*	350	106,405	304	34,789.30[5]				79.9			

Sources: 1 = FAO online data: http://www.fao.org/faostat. (Country area includes inland water bodies); 2 = United Nations Statistics Division (2018); 3 = United Nations (2016; data are for 2014); 4 = UNDP (2016b); 5 = UNDP (2016a; online data http://hdr.undp.org/en/composite/trends); 6 = World Bank Open Data (2017b).
Notes: * = overseas country or territory or outermost region; ** = Data from Vaslet and Renoux (2016).

Slowing population growth. Populations have increased significantly in the last 40 years in most countries, notably in Cuba, Haiti, the Dominican Republic, and Puerto Rico (UNECLAC 2006, 2009), although the rate of growth has slowed. Between 2009 and 2016, annual average population growth ranged from +0.4 to +1 percent for 21 islands in the Caribbean Islands Hotspot (Table 7.2). This contrasts with an average growth of +1.45 percent in 1970 (Heileman 2005). Some countries, such as Montserrat and Saint Kitts and Nevis, are less populated today than in 1970. The situation in individual countries may reflect higher growth than the overall regional trend. Among the EU overseas countries and territories and outermost regions, for example, there have been fast-growing populations on islands within countries, such as Grand Cayman in the Cayman Islands, Providenciales in the Turks and Caicos Islands, and Tortola in the British Virgin Islands. This rapid growth is linked to the expanding tourism industry (Vaslet and Renoux 2016).

Table 7.2 Annual Population Growth (percent) 2009-2016

Country Name	2009	2010	2011	2012	2013	2014	2015	2016	Trend 2009 - 2016
Antigua and Barbuda	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.0	
Aruba	0.1	0.2	0.4	0.5	0.6	0.6	0.5	0.5	
Bahamas, The	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	
Barbados	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	
British Virgin Islands	3.2	2.9	2.5	2.2	1.9	1.8	1.8	1.8	
Cuba	0.1	0.1	0.2	0.2	0.3	0.2	0.2	0.1	
Curacao	0.7	1.3	1.4	0.8	1.1	1.3	1.3		
Cayman Islands	2.5	2.2	1.9	1.7	1.5	1.4	1.3	1.3	
Dominica	0.2	0.3	0.4	0.5	0.5	0.5	0.5	0.5	
Dominican Republic	1.4	1.3	1.3	1.3	1.2	1.2	1.2	1.1	
Grenada	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	
Haiti	1.5	1.5	1.4	1.4	1.4	1.3	1.3	1.3	
Jamaica	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	
Puerto Rico	-0.5	-0.5	-1.2	-1.2	-1.1	-1.6	-1.8	-1.8	
Sint Maarten (Dutch part)	-3.3	-9.8	-5.9	3.5	5.5	2.9	3.0	3.0	
St. Kitts and Nevis	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.0	
Saint Lucia	1.1	0.9	0.7	0.6	0.5	0.4	0.4	0.5	
St. Martin (French part)	1.5	1.4	1.2	1.1	1.0	0.8	0.7	0.6	
St. Vincent and the Grena	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.2	
Turks and Caicos Islands	2.6	2.4	2.4	2.2	2.1	1.9	1.8	1.6	
US Virgin Islands	-0.4	-0.4	-0.5	-0.5	-0.5	-0.5	-0.6	-0.6	
Average	0.8	0.4	0.5	0.9	1.0	0.8	0.8	0.7	

Source: World Bank (2017b).

The region's population is projected to increase slightly by 2050, although with differences among countries. Some are expected to have substantial population growth, for example, Haiti (15.1 million in 2050) and Dominican Republic (14 million in 2050), while others are predicted to experience a decline, for example, Cuba (9.9 million in 2050) (Population Reference Bureau 2008).

Fluctuating seasonal populations on some islands. Populations on many of the smaller islands, such as Aruba, The Bahamas, Barbados, the Cayman Islands, St. Maarten and the US Virgin Islands, change during the year due to the seasonal influx of tourists. For example, stop-over tourist arrivals in the US Virgin Islands between January and May 2015 totaled 373,495 but the resident population only numbers 106,405 people (Caribbean Tourism Organisation 2015).

Changing population age composition. The long-term trend of population ageing that has been observed in the Caribbean continues: older people are starting to make up a larger proportion of the total population. The number of people under the age of 15 years peaked in the early 1970s and has been falling steadily since. The number of people of working age (15 to 59 years old) is expected to peak in the early 2020s before falling (Quarless 2015). The United Nations Economic and Social Commission for Latin America and the Caribbean (UNECLAC) projects considerable changes in the age structure of the Caribbean population. At the turn of the millennium, people under 15 years old made up 30 percent of the population; while those of working age (15 to 59 years old) made up 60 percent. Older people accounted for a mere 10 percent of the population. By 2050, the figures are expected to be 18 percent, 56 percent, and 26 percent, respectively (Quarless 2015).

Caribbean people are also living longer than before, thanks to improvements in socioeconomic conditions and global medical advances. The countries[24] for which World Bank data are shown in Table 7.1 had an average life expectancy of 71.8 years in 2016. This compares favorably with 57.8 years in 1970 and even 70.1 years in 2009 when the first CEPF ecosystem profile for the Caribbean Islands Hotspot was prepared (World Bank 2017b). The countries with the most significant gains in life expectancy between 1970 and 2016 include two of the most populous: Haiti (15.8 years) and the Dominican Republic (15.2 years) (World Bank 2017b).

Urbanization. Urban areas are growing faster in the Caribbean than anywhere else in the world. At the start of the millennium, 62 percent of the population lived in urban areas. This proportion increased to 70 percent in 2015 and is projected to reach 75 percent in 2025 (United Nations, Department of Economic and Social Affairs, Population Division 2014). Urbanization in the region has been rapid and largely unplanned and has increased significantly over the past 40 years throughout the hotspot (Heileman 2005).

All of the populations of Anguilla, the Cayman Islands, and Sint Maarten live in urban areas, as do more than 90 percent of the people of Curacao, Guadeloupe, Puerto Rico, the Turks and Caicos and the US Virgin Islands (Table 7.3). Urban areas are projected to continue to grow in all hotspot countries. The growth of urban centers and associated infrastructure in what were previously rural areas are contributing to habitat fragmentation and destruction and may lead to species loss.

Unfortunately, the provision of sanitation services has not kept pace with the growing urban population; untreated sewage and solid waste generate a pollution threat to people and biodiversity (see Section 6.1.7). The cholera epidemic in Haiti is a reminder of the grave public health threat posed by poor water and sanitation systems: between October 2010 and early April 2017, cholera claimed the lives of 9,480 people and afflicted another 800,665 (PAHO/WHO 2017).

[24] All countries with data under "Life expectancy at birth" except Dominica.

Table 7.3 Proportion of Urban Population and Average Annual Rate of Change 2010-2015

Country	Proportion of Urban Population (percent)		Average Annual Rate of Change (percent) 2010-2015
	2014	2050 projection	
Anguilla*	100	100	0
Antigua and Barbuda	24	26	-2.0
Aruba*	42	47	-0.7
Bahamas	83	87	0.1
Barbados	32	39	-0.4
British Virgin Islands	46	48	0.7
Caribbean Netherlands (Bonaire, Saba, Sint Eustatius)	75	80	0
Cayman Islands	100	100	0
Cuba	77	83	0.1
Curaçao	98	91	-0.1
Dominica	69	78	0.4
Dominican Republic	78	90	1.4
Grenada	36	44	-0.1
Guadeloupe	98	99	0
Haiti	57	76	2.4
Jamaica	55	68	0.4
Martinique*	89	91	0
Montserrat*	9	13	-0.3
Puerto Rico	94	95	0
Saint Kitts and Nevis	32	43	0.2
Saint Barthélemy	-	-	-
Saint Lucia	18	25	0.1
St. Martin*	-	-	-
St. Vincent and the Grenadines	18	25	0.1
Sint Maarten*	100	100	0
Turks and Caicos*	92	96	0.4
U.S. Virgin Islands*	95	97	0.2

Source: United Nations, Department of Economic and Social Affairs, Population Division (2014).

These population processes (high historical but slowing growth rates, high population densities, massive seasonal influxes, and increasing urbanization) have led to an unsustainable demand for land and natural resources to the detriment of the hotspot's biodiversity and ecosystems (Heileman 2005). Social, economic and environmental policies in hotspot countries need to be shaped by an understanding of the aging of the region's populations, taking into account land-use demands, consumption, demand for energy, and human vulnerability, particularly against a backdrop of climate and environmental change.

7.2 Political, Economic and Social Issues

7.2.1 Political Systems

There is wide variation in Caribbean political systems. This is partly a reflection of former or current colonial affiliations. Most of the Commonwealth Caribbean states have parliamentary democracies modeled on the British system, while the Dominican Republic is a presidential democratic republic and Haiti styles itself a semi-presidential republic. Cuba has a revolutionary socialist government.

Half of the islands in the hotspot are overseas countries or territories or outermost regions of France, the Netherlands, the UK or the USA, while the other half are sovereign states. Among the former, Martinique, Guadeloupe, and Saint-Martin are overseas departments and regions (*départements et régions d'outre-mer*) of France (and outermost regions of the EU) and elect members to the national assembly in Paris, whereas the Dutch, UK and United States territories have locally elected national governments. Aruba, Curaçao, and Sint Maarten are constituent countries (*landen*) of the Kingdom of the Netherlands. Bonaire, Sint Eustatius, and Saba are special municipalities of the Netherlands, known as the Caribbean Netherlands (*Caribisch Nederland*). Saint-Barthelemy is an overseas collectivity of France (and part of European Overseas Countries and Territories).

The formal regional mechanism with the broadest membership is the Trinidad and Tobago-based Association of Caribbean States (ACS), which includes all countries around the Caribbean Basin except the USA (see Section 8.2). The ACS focuses on functional cooperation in trade, transportation, tourism and natural resources. The Caribbean Community (CARICOM), with its secretariat in Guyana, is the other major intergovernmental grouping in the hotspot. Its membership includes members of the Commonwealth plus Haiti and Suriname. The UK overseas territories of Anguilla, Bermuda, British Virgin Islands, Cayman Islands and Turks and Caicos have associate membership status. CARICOM's purpose is to promote economic integration, functional cooperation in human and social development and foreign policy and security cooperation among members. Progress towards economic integration through the Caribbean Single Market and Economy (CSME) has been slow, although there have been moves towards implementing the Single Market and harmonizing tax systems, regulatory environments, and other general government policies. Once complete, the CSME will allow for the free movement of people, goods, services, and capital, and will lead to harmonized laws and social, economic, environmental and trade policies in participating member states. The Caribbean Court of Justice has also been established.

The Organisation of Eastern Caribbean States (OECS), with its headquarters in Saint Lucia, is a sub-regional grouping that comprises Anguilla, Antigua and Barbuda, the British Virgin Islands, Dominica, Grenada, Martinique, Montserrat, Saint Kitts and Nevis, Saint Lucia, and St. Vincent and the Grenadines. It facilitates economic harmonization and integration as well as regional cooperation in such sectors as education, environment, health, human and legal rights, and sports. In 2007, it developed model framework environmental management legislation and, in 2008, it prepared a model protected areas system act.

7.2.2 Economic Trends

The small, open economies of the Caribbean Islands are vulnerable to external shocks, such as natural disasters, fluctuating commodity prices in the world market, and volatility in the tourism sector, which is a major income-earning sector in most countries. Based on their gross national income per capita, all the hotspot's countries are classified as high[25] or upper middle income[26] by the World Bank, save Haiti, which is classified as low income. Similarly, all Caribbean countries fall within the high and medium development categories of the United Nations Development Programme's (UNDP's) Human Development Index, except Haiti, where the level of development ranks as low (UNDP 2016a).

Caribbean economies depend heavily on external trade. The loss of non-reciprocal and preferential trade agreements as part of recent globalization measures has contributed to the decline of the traditional agricultural sector in the region and increased competition in the international marketplace (particularly for bananas, rice, sugar, and rum). The liberalization of domestic markets under globalization has been an area of concern for governments (UNECLAC 2008).

Slow recovery from the 2008/09 global financial crisis and low economic growth. Regional economic growth slowed during and after the global economic crisis of 2008/09, and this was coupled with reductions in external resource flows to the Caribbean, including overseas development assistance and private investment. Stimulus measures implemented by countries have included short-term construction initiatives that can degrade habitats and affect biodiversity.

Since 2010, annual growth has averaged 0.8 percent among Caribbean Development Bank (CDB) borrowing member countries,[27] compared to average growth of 4.7 percent in other small states (Caribbean Development Bank 2016). The CDB attributes this low growth to lower levels of export diversification in the Caribbean than among other small states and less competitiveness.

Average growth across CDB borrowing member countries was -0.9 percent in 2016, compared to 0.4 percent in 2015 (Caribbean Development Bank 2016). Growth rates for Anguilla; Antigua and Barbuda; British Virgin Islands; Cayman Islands; Grenada; Saint Kitts and Nevis; St. Vincent and the Grenadines; and Turks and Caicos Islands were between 2.2 and 4.4 percent in 2016. They were less than 2 percent for The Bahamas, Barbados, Dominica, Haiti, Jamaica, Montserrat and Saint Lucia (Caribbean Development Bank 2016). Growth in Haiti and The Bahamas was negatively affected by Hurricane Matthew in October 2016. This is a trend that is repeatedly seen in the region, given its vulnerability to natural disasters. The 2013 "Christmas Eve trough," for example, contributed to the major economic contraction that Saint Lucia and St. Vincent and the

[25] The high-income countries in the hotspot are Antigua and Barbuda, Aruba, The Bahamas, Barbados, British Virgin Islands, Cayman Islands, Curaçao, Puerto Rico, Sint Maarten (Dutch part), Saint Kitts and Nevis, St. Martin (French part), and Turks and Caicos Islands, and the US Virgin Islands.

[26] The upper middle-income countries in the hotspot are Cuba, Dominica, Dominican Republic, Grenada, Jamaica, Saint Lucia, and St. Vincent and the Grenadines.

[27] The Caribbean Development Bank borrowing member countries in the hotspot are Anguilla, Antigua and Barbuda, The Bahamas; Barbados; British Virgin Islands; Cayman Islands; Dominica; Grenada; Haiti; Jamaica; Montserrat; Saint Kitts and Nevis; Saint Lucia; St. Vincent and the Grenadines; and the Turks and Caicos Islands. Other borrowing member countries are Belize, Guyana, Suriname, and Trinidad and Tobago.

Grenadines experienced in 2014 (Caribbean Development Bank 2014a). In contrast with the CDB borrowing member countries, the Dominican Republic, the Caribbean's largest economy, had yearly average growth of 7.1 percent between 2014 and 2016 (World Bank n.d.). Modest slowing of growth between 2015 and 2016 was attributed to the "completion of construction projects and weakening manufacturing growth" (World Bank 2017d).

The CDB predicted average growth of 1.7 percent in member states in 2017. No doubt, the 2017 Atlantic hurricane season had a negative effect on several of the region's countries and will likely result in lower growth than forecast. In October 2017, UNECLAC revised its projection for average growth in the English- and Dutch-speaking islands to 0.3 percent for 2017, mainly due to the damage caused by Hurricanes Irma and Maria in some eastern Caribbean countries (UNECLAC 2017). It is important to note that, although higher than that for 2016, even without the adverse impact of the 2017 storm season, the CDB's projection for growth in 2017 was still lower than what is needed to stimulate employment and reduce persistently high debt levels (Caribbean Development Bank 2016).

High levels of indebtedness. Several CEPF-eligible countries in the hotspot continue to be burdened by high levels of debt. Antigua, The Bahamas, Dominica, Grenada, Saint Kitts and Nevis, and Saint Lucia, for example, all have debt-to-GDP ratios above 60 percent, while for Barbados and Jamaica the ratios are greater than 100 percent (Caribbean Development Bank 2016). Some countries (Antigua, Grenada, Jamaica, and Saint Kitts and Nevis) reduced their debt-to-GDP ratios in 2016, while others (Anguilla, The Bahamas, Barbados, Dominica and Saint Lucia) saw an increase in their ratios (Caribbean Development Bank 2016). Haiti's debt-to-GDP ratio in 2015 was 24.3 percent (IMF 2017a)[28]. Among non-CEPF-eligible countries, Puerto Rico has also been challenged by sustained high levels of public debt (Congressional Task Force on Economic Growth in Puerto Rico 2016). Lack of investment in that country's infrastructure heightened its vulnerability during the 2017 Atlantic hurricane season.

Debt servicing obligations limit fiscal space for economic and social investment, including investment in the natural resource base. In Grenada, Haiti, and Saint Kitts and Nevis, however, efforts are being made to restructure some of the public debt in support of conservation through debt-for-nature swaps (see Section 11.7.3). UNECLAC has proposed a debt buyback scheme for the Caribbean to be brokered through the GCF. Under the proposed scheme, debt service payments of beneficiary countries would go into a Resilience Fund for financing climate change adaptation and mitigation projects (Quarless 2017).

Green Economy/Green Growth/Blue Economy. International concepts of "green economy", "green growth" and "blue economy" are being promoted by key international economic actors and are gaining traction in the region. Green economy is being promoted by UN Environment and others in the Partnership for Action on Green Economy.[29] Green growth is being promoted by the Organisation for Economic Co-operation and Development, and blue economy by The World

[28] Due to Haiti's high levels of poverty and unsustainable debt (debt-to-government and debt-to-export revenue) it became eligible for debt relief under the World Bank's Heavily Indebted Poor Country Initiative in 2006 (World Bank 2006).
[29] See http://www.un-page.org/

Bank. Despite nuances in the concepts, the fundamental idea is about economic development that does not degrade the environment, reduces environmental risks and ecological scarcities, and is low carbon, resource efficient, and socially inclusive (UNEP 2011).

In the Caribbean context, the concept of green economy has been interpreted as a self-directed agenda that aims for resilience and self-reliance through "long-term prosperity, rather than solely for growth, through equitable distribution of economic benefits and effective management of ecological resources" (CANARI 2017a). Understanding of the key pathways to a green economy has also been evolving and there is growing recognition that they include effective management of ecosystems, transforming economic policies, markets and tools to invest in and manage ecosystems, and greening key sectors to reduce negative impacts on ecosystems.[30] The value of Caribbean ecosystems is significant: in 2012, the Caribbean Sea generated $407 billion in value added for insular and mainland Caribbean coastal countries (Patil *et al.* 2016).

There have been a number of preliminary green economy projects in the region. These include:

- National green economy scoping studies by UN Environment (in Barbados, Jamaica and Saint Lucia) that identify key sectors for transformation.
- A regional dialogue and development of a regional program of work on green economy by CANARI and follow-up work on local green enterprises.
- A study on renewable energy as a pathway to green economy in the Caribbean by CANARI for CDB and actions by several countries on hydrothermal, wind and solar energy.
- Dominica's "Organic Island Initiative", a 10-year program of action to merge food production, eco-tourism and agro-tourism initiatives under an organic food production umbrella (Geoghegan 2014).

Barbados has a green economy vision and has articulated a green economy strategy in its national development plan, the Medium Term Growth and Development Strategy (MGDS) 2013-2020. In 2017, the OECS began preparing a sub-regional Green Economy Action Plan and, in September 2017, the OECS Secretariat and the World Bank signed an agreement to implement the GEF-funded *Caribbean Regional Oceanscape Project* to preserve and strengthen resilience of coastal and marine resources and implement regional policies to stimulate blue growth (World Bank 2017e).

However, the region is a long way away from achieving the transformation envisaged under green economy approaches. Government expenditure in the hotspot tends to prioritize spending on health, welfare, crime, youth unemployment and poverty reduction programs over environmental and biodiversity measures (UNECLAC 2015; UNDP 2016b). Short-term responses to globalization and lackluster economic growth have focused on fiscal stimulus, sectoral and social policies, with infrastructure developments to help cushion the fall-out on growth and employment, which are likely to have negative impacts on the natural environment.

[30] See, for example, the Green Economy Coalition Vision https://www.greeneconomycoalition.org/our-vision

7.2.3 Social Trends

The majority of Caribbean countries for which data are available have maintained positive trends in key social indicators since 2010, for example, reducing infant and under-five mortality and increasing life expectancy. Dominica has been an outlier in the areas of infant and under-five mortality, however, with increases in both between 2010 and 2015.[31] Even though the under-five mortality rates for the Dominican Republic, Haiti, and St. Vincent and the Grenadines have been trending downwards, they remain above the regional average rate for Latin America and the Caribbean of 17.8 deaths per 1,000 live births (UNDP 2016a).

The individual indicators above tell one story but the composite Human Development Index (HDI) tells another. While there has been an overall improvement in some social indicators, the Caribbean has not been immune to the global trend of slowing in growth of all three components of the HDI[32] that has been observed in most regions of the world (UNDP 2016b). Except for Barbados, the Dominican Republic, and Saint Kitts and Nevis, the HDI rank for CEPF-eligible countries declined between 2010 and 2016 (Table 7.1).

Poverty

Poverty information for Caribbean countries is not current, and this data deficiency makes it difficult to assess performance towards Sustainable Development Goal 1: End poverty in all its forms everywhere (UNDP 2016b). Estimates compiled for nine countries using available data put the population-weighted poverty rate for CARICOM member states at 43.7 percent, higher than the rate for the Latin America and the Caribbean combined and higher than those in countries classified as low and middle income (UNDP 2016b).

The average poverty rate for CARICOM states is increased by Haiti with its significant share of the population in CARICOM and its much higher poverty rates. When Haiti is removed from calculations, the poverty rate falls to 24 percent (UNDP 2016b). After reaching a low of 9.9 percent in 2007, the poverty rate in Jamaica climbed to 20 percent in 2012. Approximately one-third of the Dominican Republic's population falls below the national income poverty line (World Bank 2017b), while in Haiti, the least-developed country in the Americas, more than half the population lives in poverty. Poverty rates for Dominica, Grenada, Saint Lucia, Saint Kitts and Nevis, and St. Vincent and the Grenadines are all greater than 20 percent (Table 7.4).

[31] Dominica's infant mortality rate was 19.6 deaths per 1,000 live births in 2015, compared to 17.2 in 2010. Its under-five mortality rate was to 21.2 deaths per 1,000 live births in 2015, up from 18.8 in 2010 (UNDP 2016a, online data http://hdr.undp.org/en/composite/trends).

[32] The dimensions of human development that make up the Human Development Index are: a long and healthy life, being knowledgeable, and having a decent standard of living.

Table 7.4 Regional Comparison of Poverty, Vulnerability and Inequality

Country	Year	Population Poor (%)	Population Vulnerable (%)	Population Indigent (%)	Poverty Gap Index	Gini Coefficient
Anguilla	2009	5.8	17.7	0	1.1	0.39
	2002	23	-	2	6.9	0.31
Antigua and Barbuda	2007	18.3	10	3.7	6.6	0.48
Bahamas	2013	-	-	-	-	-
	2010	9.3	-	5	2.8	0.57
Barbados	2001	19	10.4	9.1	6	0.47
	1996/97	13.9	-	-	2.3	0.3
British Virgin Islands	2002	22	-	< 1	4.3	0.23
	1997	-	-	-	-	-
Cayman Islands	2006/07	2	1.8	0	0.4	0.40
	2000	-	-	-	-	-
Dominica	2009	28.8	11.5	3	8.9	0.44
	2002/03	39	-	15	10.2	0.35
Dominican Republic	2015	32.4*	-	-	-	0.44*
	2009					0.48*
Grenada	2008	37.7	14.6	2.4	10.1	0.37
	1998/99	32	-	12.9	15.3	0.45
Haiti	2012	58.5	11.5	23.8	-	0.61
	2000/01	74.9	-	31	32.3	0.61
Jamaica	2016	14.5^				
	2012	20.00	-	-	4.5	0.38
	2001	16.9	-	-	7.2	0.38
Saint Kitts	2008/09	23.7	-	1.4	6.4	0.38
	1999/00	30.5	-	11	2.5	0.40
Nevis	2008/09	15.9	-	0	2.7	0.38
	1999/00	32	-	17	2.8	0.37
Saint Lucia	2005	28.8	40.3	2	9	0.42
	1995	25.1	31.5	7.1	8.6	0.5
St. Vincent and the Grenadines	2007/08	30.2	48.2	2.9	7.5	0.40
	1995	37.5	-	25.7	12.6	0.56
Turks and Caicos	2012	21.6	11.4	0	4	0.36

Sources: Caribbean Development Bank (2014a), except for * = World Bank (2017b) and ^ = UNDP (2017)

Poverty reduction efforts in hotspot countries have been increasingly threatened by natural disasters, prompting increased and continuing attention to the environment, climate change and disaster risk reduction within the context of a green economy (Caribbean Development Bank 2014b). While the poor are particularly vulnerable to environmental degradation, poverty also drives unsustainable use of resources, such as the use of forest or mangrove-derived charcoal for fuel, or encroachment on watersheds and forested areas for agricultural land. The Dominican Republic's long-standing reforestation plan, *Plan Nacional Quisqeuya Verde*, was born out of the

recognition that the degradation and unsustainable use of natural resources are linked to the socioeconomic conditions and problems that affect populations that directly affect natural resources.[33] Participants in the national consultations highlighted linkages between sustainable livelihoods and biodiversity conservation in the hotspot. Participants in Haiti especially emphasized the importance of focusing on sustainable livelihoods as a strategy to address poverty and safeguard that country's biodiversity.

Building environmental sustainability and resilience has been identified as one of three policy directions[34] that ought to be pursued to advance multidimensional progress in the Caribbean (UNDP 2016b). Specific suggested policy objectives include: strengthening planning frameworks by including a strong emphasis on risk management; intensifying the focus on climate change mitigation and adaptation; transitioning to green economy models; and improving environmental stewardship, management and conservation (UNDP 2016b).

Income Inequality

Income inequality, or the gap between the rich and the poor, coexists with high levels of poverty in the Caribbean, despite the high and middle-income status of most countries. The level of inequality in the Caribbean, as measured by the Gini Coefficient, has remained fairly stable, although income inequality is quite significant in some national contexts (Table 7.4; UNDP 2016b). The Gini Coefficient is used to analyze economic inequality, measuring income distribution and ranges from 0, which signifies complete equality, to 1, complete inequality. Income inequality is highest in Haiti (0.61 in 2012).

Violent Crime

A defining characteristic of crime in the region is the uniquely high level of violent crime, which affects 6.8 percent of the population in the Caribbean, compared to the world average of 4.5 percent (Alleyne *et al.* 2017). Firearm use in crime is higher than in other parts of the world and firearms are used "twice as often in robbery and three times as often in assault in the Caribbean compared with the global average" (Sutton *et al.* 2017, p331). Violent crime is one of the structural impediments to the growth of Caribbean economies, and it comes with high societal costs (Alleyne *et al*. 2017; Sutton *et al.* 2017). Combatting crime diverts financial resources away from production and investment to security, crime detection, and law enforcement. This is in addition to the social and economic costs of injury and loss of life due to violence (UNDP 2016b). The Inter-American Development Bank estimates that the welfare costs of crime and violence are around 3 percent of the region's GDP, with Barbados being the country least affected and The Bahamas the most (Jaitman and Torre 2017). The United States Agency for International Development (USAID) Mission in Jamaica explored possible relationships between environmental degradation and human insecurity, including violent crime, as part of the 2017 review of its country strategy.

[33] The program seeks to improve the living conditions of rural populations through promotion of natural resources, generation of jobs, protection of the environment and strengthening of coordination between state institutions and civil society organizations that work on sustainable development issues. See http://ambiente.gob.do/bosques/

[34] The other two policy directions are reducing human vulnerability and removing structural barriers to inclusive growth.

Health

The Caribbean region has a high incidence of both communicable diseases, such as Human Immunodeficiency Virus (HIV)/Acquired Immune Deficiency Syndrome (AIDS), and non-communicable diseases, such as diabetes and hypertension. The Caribbean is the region most affected by HIV/AIDS in the Western Hemisphere and has the second highest HIV prevalence after sub-Saharan Africa. By the end of 2016, 310,000 people were living with HIV in the Caribbean and the number of people receiving treatment more than doubled from 69,900 in 2010 and to 162,000 in 2016 (UNAIDS 2017). Non-communicable diseases account for 65 percent of the burden of diseases in the Caribbean (Chao 2013). The cost of treating and preventing these diseases places a substantial and growing economic and social burden on Caribbean countries.

7.2.4 Gender

There are structural inequalities in Caribbean societies that influence women's access to resources, including natural and productive resources. Women head nearly half of Caribbean households but are disadvantaged in the region's labor markets. Female participation in the labor force is 59 percent, compared to 79 percent for men (UNDP 2016b). Although women's educational performance is higher than that of men, women are under-represented in large-scale enterprises, leadership and decision-making, and targeted growth areas; they tend to be concentrated in lower level and lower paying jobs (Rawwida Baksh and Associates 2016; UNDP 2016b). In two hotspot countries, however, the proportion of women among private and public sector managers at all levels is greater than 50 percent.[35] Jamaica has the highest proportion of women managers globally (59.3 percent) and Saint Lucia the third highest (52.3 percent) (ILO 2017). The agricultural sector is gender-segregated, with men dominating land ownership, access to credit, and other means of production (Rawwida Baksh and Associates 2016). Women did better than men in retaining jobs during the global economic crisis, possibly due to higher levels of secondary and tertiary education attainment (UNDP 2016b).

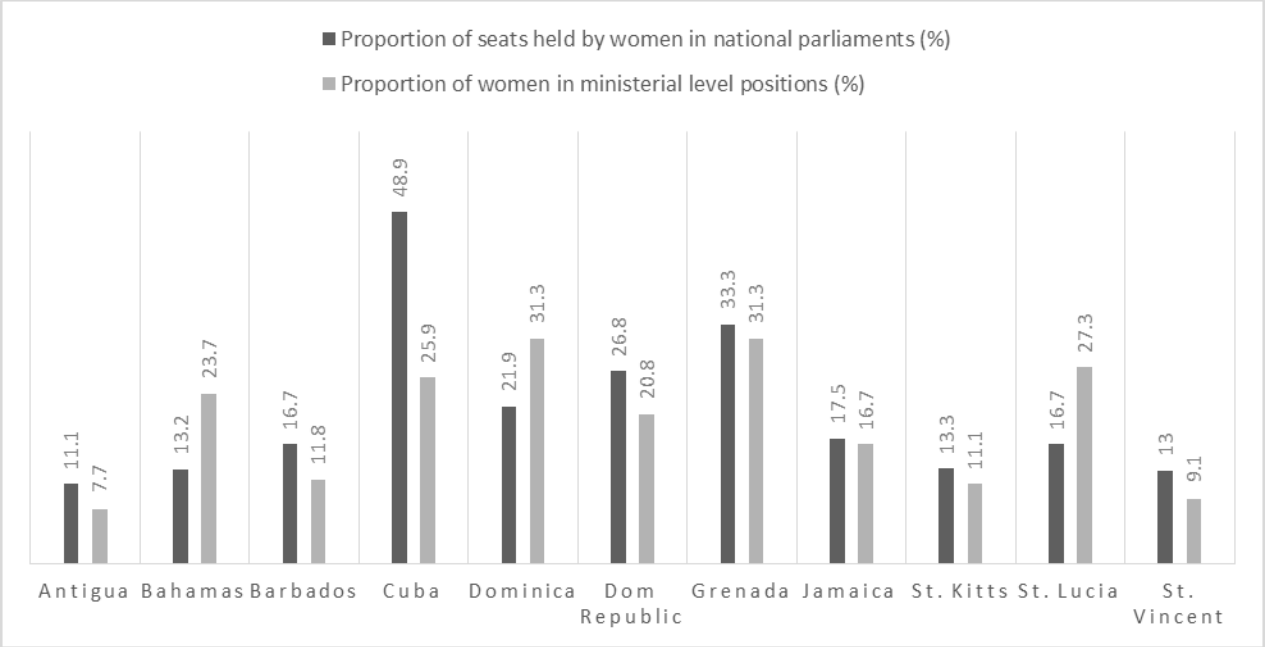
Poverty has a gendered dimension in the region, with female-headed households more likely to be poor than male-headed households and there is a greater prevalence of poverty among women than men (Rawwida Baksh and Associates 2016). There are notable exceptions, however. The incidence of poverty among female-headed households in Saint Lucia, for example, is almost the same as among male-headed households: 21.2 percent and 22 percent respectively. In Anguilla, more men (5.2 percent) than women (3.6 percent) live in poverty, according to 2007/2009 data (Rawwida Baksh and Associates 2016).

Female participation in decision-making is important for women's empowerment. Although nine hotspot countries have had female heads of state[36] or government, women are under-represented in politics and political leadership in the hotspot (Figure 7.1).

[35] Only three out of 108 countries assessed by the International Labour Organisation have more than 50 percent female managers.

[36] HM Queen Elizabeth II is the head of state in those Caribbean countries that are Commonwealth realms and is represented locally by a Governor General. The reference here is to female Governor Generals and not the Queen.

Figure 7.1 Women in Political Leadership Positions in 2016



Source: World Bank Group (2017b).

There has been little research about gender roles and the use and management of natural resources in the Caribbean. Women are, however, involved in productive sectors that depend on natural resources, such as agriculture and fisheries, and are, therefore, affected by environmental threats to these sectors. At the household level, access to water has a gendered dimension, with women bearing the burden of water management, particularly in households without access to pipe-borne water or in times of water scarcity. Climate change is expected to worsen such environmental threats as deforestation, water scarcity and land degradation, and will have differentiated impacts on women and men in the Caribbean.

7.2.5 Youth

The vulnerability of Caribbean youth is linked to educational underachievement, high unemployment rates, exposure to violence, and susceptibility to disease, especially HIV infection. Youth make up between 28 and 50 percent of all unemployed people, and young females are more likely to be unemployed than the males (UNDP 2016b). Youth unemployment rates range between 18 and 47 percent in hotspot countries; their unemployment rate is two to three times that of adults (Parra-Torrado 2014, UNDP 2016b). Young males are disproportionally affected by crime in the Caribbean: they are the main victims and perpetrators (UNDP 2016b, Sutton and Alvarez 2017). Caribbean youth are disproportionately vulnerable to HIV (UNAIDS 2017).

7.2.6 Private Sector

Although the Caribbean private sector includes national, regional and multinational players, it mainly comprises locally owned, small and medium-sized enterprises that operate in small and medium-sized towns and lack strong links to the global economy (The Economist Intelligence Unit Limited 2015). The situation with the private sector in Cuba is different from the rest of the region.

The latest round of free-market reforms, which began in 2010, has led to the emergence of a small middle class through a highly regulated private sector with three main categories of businesses: self-employed entrepreneurs (*cuentapropistas*); agricultural cooperatives and private farms; and non-agricultural cooperatives. Cooperatives formerly existed as state-owned enterprises but are now owned and run by the employees. In mid-2017, the state placed a ban on new licenses for specific categories of self-employed entrepreneurs, pending the introduction of new regulatory measures (Marsh 2017a).

Many of the large private companies in the region have established charitable foundations as a vehicle for corporate giving in the countries and communities where they operate. Most of these corporate foundations orient their giving towards social issues (education, health, child and youth development, etc.), although some have an environmental focus, as discussed below.

Efforts to engage the private sector in conservation efforts across the region have met with varying degrees of success. During the initial phase of CEPF investment, seven projects in Antigua and Barbuda, the Dominican Republic, and Haiti resulted in successful collaborations with the private sector, with the most traction being gained in the Dominican Republic. The experience of establishing that country's first private protected area that forms part of the National Protected Area System, El Zorzal Private Reserve[37], and a carbon offsets PES program, underscored the critical role that donors can play in helping to leverage private sector investment in conservation. CEPF financing leveraged private investment in land acquisition financing and ensured that the project had the necessary capital to move from the planning phase to on-the-ground implementation (Consorcio Ambiental Dominicano 2015). Given the existence of Red Nacional de Apoyo Empresarial a la Protección Ambiental (ECORED), a 90-member non-profit network of private sector organizations in the Dominican Republic that is committed to developing a culture of sustainable development, it is perhaps not surprising that efforts at private sector engagement in that country under the initial phase of CEPF investment found fertile ground.

The successful instances of private sector engagement during the initial phase of CEPF investment notwithstanding, the experience of trying to leverage support from the tourism sector for protected area financing in Jamaica under a CEPF project highlighted some of the challenges of private sector engagement for funding. Tourism sector actors approached during a feasibility study for new sustainable financing mechanisms from tourism-related sources pointed to existing corporate social responsibility (CSR) efforts as evidence of their support to conservation and community development. They also felt that visitor "opt-in" programs at their hotels would compete with their own foundations' fundraising efforts targeting guests (The Nature Conservancy 2015). Consultation stakeholders in Jamaica indicated that one of the challenges faced in raising funds from the local private sector is that once organizations support an environmental group, they feel they have supported the environment and done their part.

Efforts to involve the Caribbean's largest industry in biodiversity conservation have met with most success at the very local level, with tourism interests targeting their philanthropy to the areas or communities where they operate, although there are examples of support by large corporations to

[37] The 404-hectare Reserva Privada Zorzal, improves connectivity between Loma Guaconejo and Loma Quita Espuela KBA, which were prioritized for investment under the initial CEPF investment phase.

regional programs, as described below. Some tourism interests have made conservation funding an important part of their CSR activities. Smaller adventure and outdoor recreation-oriented hotels, for example, have supported conservation of the resources upon which they depend (for instance, the Dominica Nature Island Standard of Excellence). Small-scale, community-run ecotourism ventures are now open for business in several countries (for example, Jaragua National Park KBA in the Dominican Republic and Blue and John Crow Mountains Protected National Heritage KBA in Jamaica), and the potential exists for some operations to expand with spin-offs from larger resorts and cruise ships.

Among the large tourism players, the philanthropic arm of Sandals Resorts International, the Sandals Foundation, has invested in environmental projects in Jamaica and Saint Lucia, including in conservation of terrestrial and marine ecosystems. The Sandals Foundation also manages the Sandals Boscobel Special Fishery Conservation Area (SFCA), which is adjacent to the Beaches Boscobel Resort and Golf Club. Of the 11 declared SFCAs, this is the only one wholly funded by the private sector. Another SFCA in Jamaica, Oracabessa, is managed by the Oracabessa Foundation, which was established by the owner of Island Outpost, an operator of high-end villas and resorts.

In the Dominican Republic, the Fundación Grupo Puntacana S.A promotes innovative solutions for the preservation of the ecosystems of the Punta Cana region. In addition to supporting social projects, it supports scientific research and promotes environmental actions, such as agriculture and sustainable fisheries, rehabilitation of corals and protection of the Critically Endangered hawksbill turtle and Ridgway's hawk. Fundación Grupo Puntacana signed a technical and scientific cooperation agreement with the Ministry of Environment and Natural Resources in May 2017 to develop a management plan for the Coral Reef Marine Sanctuary of the Southeast.

There are several examples of private sector support for environmental initiatives outside of the tourism sector. The *Coalición Rio* (River Coalition) in the Dominican Republic was formed in 2015 to stimulate private sector participation and investment in the clean-up and rehabilitation of the heavily contaminated Ozama and Isabela rivers, which flow through the capital city of Santo Domingo.[38]

Fundación Propagas, the corporate foundation of Grupo Propagas which imports and sells hydrocarbons in the Dominican Republic, has supported conservation programs, including initiatives targeting Ridgway's hawk, reef monitoring, and the Yaque del Norte Water Fund. Since 2009, Fundación Propagas has supported activities in Parque Nacional Dr. Juan Bautista Pérez (Valle Nuevo) KBA and, in 2012, it signed a co-management agreement with the Ministry of the Environment and Natural Resources for the administration of the visitor center for the 80 km^2 La Pirámide sector of the KBA.[39]

Through its Jamaica Conservation Partners project, the CB Facey Foundation, the registered charitable organization of PanJam Investment Limited, is seeking to leverage support for the operations of environmental NGOs by raising awareness and serving as a channel for funding from

[38] See http://www.coalicionrio.org/site/. Private sector members include Fundación Tropigas and San Souci Holdings.
[39] See http://www.fundpropagas.com/website/

the Jamaican diaspora and other private funders.[40] The Jamaica National (JN) Group signed Cooperative Agreements with the Inter-American Development Bank (IDB) in March 2017 that provide the JN Bank and the JN Foundation with funding for a four-year project to address water management issues related to climate change in the urban housing sector.[41]

At the regional level, The Nature Conservancy's (TNC's) high profile Caribbean Challenge Initiative has 15 private sector members but only four of them are Caribbean organizations (Grupo Propagas, Grupo Puntacana, Guy Harvey Sportswear, and Sandals Resorts International). The USAID Caribbean Marine Biodiversity Program lists three tourism private sector partners in its program overview but only one, Sandals Resorts International, is a Caribbean company.

As part of its strategy to identify and implement livelihood alternatives for communities and reduce pressures on biological diversity, the Caribbean Biological Corridor project sought to foster partnerships between communities and the private sector. However, by the end of the project, no formal partnerships had been established with the private sector. The final evaluation found that the objective of developing partnerships with the private sector may have been "too ambitious, and unrealistic considering the realities of the three countries and the pilot sites" (Renard and Borobia 2015, p28). Worthy of note, however, are recent developments in Haiti that propose the acquisition of critical conservation areas by the private sector for private management. This suggests that the industry could play a more significant role than it currently does (Renard and Boroboa 2015).

Some NGOs have proactively developed programs to harness private sector support. The Bahamas National Trust, for example, launched a comprehensive Corporate Partnership Programme in mid-2017 to attract private sector support for the management of the national park system. The program offers two levels of engagement: membership options for small businesses; and partnership options for those that can make broader-scale commitments (Bahamas National Trust 2017).

There are indeed challenges associated with leveraging private sector support and financing for conservation. However, the value and importance of the private sector in mainstreaming the sustainable use of resources and halting biodiversity loss, as well as the inroads that some NGOs have made in harnessing private sector support, suggest that such engagement remains a strategy worthy of pursuit.

7.3 Key Economic Sectors

7.3.1 Tourism

Tourism is the primary economic driver in most Caribbean economies, having taken over from agriculture, which has suffered a steady overall decline since the 1960s. In 2014, 23 Caribbean islands received a total of 19.8 million stopover arrivals, with Aruba, The Bahamas, Cuba, the Dominican Republic, Jamaica, and Puerto Rico each receiving more than a million visitors (Caribbean Tourism Organisation 2015). Cruise ship arrivals have doubled in the last decade, overtaking stopover arrivals as the highest source of visitor arrivals.

[40] See http://cbfaceyfoundation.org/partners/#environment
[41] See https://www.waterprojectja.com/

The contribution of travel and tourism to national economies can be measured in direct and indirect terms. The direct contribution to GDP reflects the 'internal' spending on travel and tourism, as well as government spending on travel and tourism services directly linked to visitors, such as cultural services (e.g., museums) or recreational assets (e.g., national parks). The indirect contribution includes: the GDP and jobs supported by travel and tourism investment spending, such as the purchase of new aircraft or construction of new hotels; government collective spending, for example on tourism marketing and promotion, aviation, administration, security services, resort area security services, resort area sanitation services; and domestic purchases of goods and services by the sectors dealing directly with tourists including, for example, purchases of food and cleaning services by hotels, of fuel and catering services by airlines, and IT services by travel agents (WTTC 2017a). In 2016, the direct contribution of the travel and tourism sector to Caribbean GDP was $17.9 billion or 4.7 percent of total GDP (Table 7.5). According to the World Travel and Tourism Council, the direct contribution of the sector to GDP is forecast to rise by 4.0 percent in 2017, and then by 3.6 percent per annum between 2017-2027, to reach $26.7 billion (5.7 percent of total GDP) in 2027 (WTTC 2017a).

Table 7.5 Tourism Sector Contribution to GDP in the Caribbean Islands

Country	Contribution to GDP (percent)	
	Direct	Total
Anguilla*	19.2	56.6
Antigua and Barbuda	16.1	60.4
Aruba*	28.6	88.1
Bahamas	19.8	44.8
Barbados	12.9	39.9
British Virgin Islands*	34.3	95.9
Cayman Islands*	8.5	29.2
Cuba	2.2	9.6
Dominica	11.4	34.7
Dominican Republic	5.4	17.3
Former Netherland Antilles[1]	23.3	63.6
Grenada	5.8	20.2
Guadeloupe*	2.9	12.7
Haiti	3.4	9.9
Jamaica	9.3	30.3
Martinique*	3.3	13.4
Puerto Rico*	2.7	8.0
Saint Kitts and Nevis	5.9	25.1
Saint Lucia	13.7	39.6
St. Vincent and the Grenadines	6.2	22.3
U.S. Virgin Islands*	13.3	31.8

Source: WTTC (2017b).
Notes: [1] = Bonaire, Curacao, Sint Maarten, Saba and Sint Eustatius; * = overseas territory or outermost region.

The total contribution of travel and tourism to GDP was $56.4 billion (14.9 percent of GDP) in 2016 and is forecast to rise by 3.7 percent in 2017 (WTTC 2017a). Tourism is economically very important for some of the smaller Caribbean countries. In Aruba and the British Virgin Islands, for instance, the total contribution of travel and tourism to GDP was 88 percent and 96 percent respectively, while, in Anguilla, Antigua and Barbuda, and the former Netherlands Antilles, it accounted for more than 50 percent of GDP (WTTC 2017b). The sector is also an important source of employment, accounting for more than 25 percent of employment on all the islands listed here. In Aruba, 89 percent of the population is involved in tourism.

Viewed purely in terms of contribution to GDP, and employment, tourism development can be considered a success for the region. However, the sector puts pressure on the very natural resource base on which it depends and those mechanisms that are in place to capture economic rents or payments from the sector channel relatively little back into conservation. The Caribbean's mass tourism is highly dependent on coastal and marine areas, and the concentration of tourism infrastructure and activities in the coastal zone, including in ecologically sensitive areas, puts pressure on coastal habitats. The industry also places a high demand on freshwater and energy resources and generates large quantities of solid and liquid waste. The unplanned and often informal settlements that spring up in the vicinity of resort areas also put pressure on the environment. As discussed above, the tourism sector is expected to continue to grow in the region, which will require further land for construction (hotels, golf courses, marinas, etc.) and resources (water, imported and local food, energy, building materials, etc.), as well as increased waste management capacity.

There has been a drive towards the development of eco-tourism and community-based nature and heritage tourism products in several hotspot countries, including Montserrat, Dominica, the Dominican Republic, Jamaica and Saint Lucia, although this has been done as part of moves to diversify the tourism product, and not to promote fundamental change towards more sustainable models. Although these forms of tourism are mainly considered a modality for more widely distributing the benefits of tourism to local communities, they can also be a way of fostering stewardship of natural resources within communities. A number of KBAs have active community-based nature tourism initiatives, including Parque Nacional Dr. Juan Bautista Pérez (Valle Nuevo) Valle in the Dominican Republic, where CEPF supported community-based nature tourism projects during the initial investment phase.

Within the sector, there appears to be growing concern about sustainability and good environmental practice, particularly in the face of climate change. For example, more than 75 resorts and attractions in 19 Caribbean nations have been or are in the process of being certified by Green Globe (Curley 2017).

7.3.2 Agriculture

The percentage of land area under agriculture in the hotspot has remained relatively constant since 2009 (Table 7.6). The Bahamas, Barbados, Cuba, the Dominican Republic and Jamaica all saw a decline in the share of land area that is arable and under permanent crops and pastures, while Dominica, Haiti, Puerto Rico, and Saint Kitts and Nevis had small increases (World Bank 2017b).

The abandonment of agricultural land is leading to a trend of increasing forest cover (albeit of secondary forest) in some countries (FAO 2014a).

Table 7.6 Agricultural Land (percent of land area)

Country Name	2009	2010	2011	2012	2013	2014	%Change
Antigua and Barbuda	20.45	20.45	20.45	20.45	20.45	20.45	0.00
Aruba	11.11	11.11	11.11	11.11	11.11	11.11	0.00
Bahamas, The	1.50	1.50	1.40	1.40	1.40	1.40	-0.10
Barbados	37.21	34.88	32.56	32.56	32.56	32.56	-4.65
British Virgin Islands	46.67	46.67	46.67	46.67	46.67	46.67	0.00
Cuba	61.20	60.70	59.96	60.18	60.85	60.36	-0.83
Curacao							0.00
Dominica	30.67	33.33	33.33	33.33	33.33	33.33	2.67
Dominican Republic	49.62	49.62	49.62	48.69	48.69	48.69	-0.93
Grenada	23.53	23.53	23.53	23.53	23.53	23.53	0.00
Haiti	65.18	67.85	66.40	64.22	66.76	66.76	1.58
Jamaica	41.46	41.00	41.00	41.00	41.00	41.00	-0.46
Puerto Rico	21.67	21.84	22.02	22.19	22.29	22.29	0.62
St. Kitts and Nevis	21.15	21.92	23.08	23.08	23.08	23.08	1.92
St. Lucia	17.38	17.38	17.38	17.38	17.38	17.38	0.00
St. Martin (French part)							0.00
St. Vincent and the Grenadines	25.64	25.64	25.64	25.64	25.64	25.64	0.00
Sint Maarten (Dutch part)							0.00
Turks and Caicos Islands	1.05	1.05	1.05	1.05	1.05	1.05	0.00
Virgin Islands (U.S.)	11.43	11.43	11.43	11.43	11.43	11.43	0.00

Source: World Bank Group (2017b).

The role of the agricultural sector in the Caribbean has been diminishing for decades, with its contribution to GDP for the region falling from 11.1 percent in 1990 to an average 4.3 percent in 2000. Besides a lack of competitiveness, the sector is faced with the loss of access to preferential European markets and growing consumer demand for imported food. Agriculture is also under serious threat from natural disasters and the impacts of climate change (UNDP 2016b).

In 2014, the sector contributed, on average, 4.6 percent of GDP in Caribbean countries (CEPF-eligible countries plus Cuba and Trinidad and Tobago; Table 7.7). Its contribution to national economies ranged from 1.8 percent in Saint Kitts and Nevis to 13.8 percent in Dominica. In most countries, however, agriculture contributed between 2 and 6.5 percent to GDP.

Despite the decline of the sector, agriculture continues to be important in many countries and plays a significant social role (European Centre for Development Policy Management 2006). For instance, the Windward Islands (the southern Lesser Antilles, from Martinique southwards) are still heavily dependent on a limited number of agricultural commodities for their export earnings and employment, and some 20 percent of the workforce on Dominica is employed in the agricultural sector (Table 7.8).

Table 7.7 Value-added of Agriculture to GDP in the Caribbean

Country	Value-added for agriculture, 2014 (percentage share of GDP)
Antigua and Barbuda	2.3
Bahamas	2.3
Barbados	2.0
Cuba	5.0
Dominica	13.8
Dominican Republic	6.0
Grenada	5.3
Haiti	-
Jamaica	6.5
Saint Kitts and Nevis	1.8
Saint Lucia	3.4
St. Vincent and the Grenadines	6.3
Caribbean average*	**4.6**

Source: FAO Statistical Yearbook 2014, Latin America and the Caribbean.
Note: * - average for CEPF eligible countries plus Trinidad and Tobago.

Table 7.8 Employment in Agriculture (Percentage of Total Employment; Modeled ILO Estimate)

Country	2009	2017
Antigua and Barbuda	-	-
Bahamas	2.90	3.90
Barbados	2.80	2.80
Cuba	18.70	12.90
Dominica	-	-
Dominican Republic	14.90	13.10
Grenada	-	-
Haiti	49.20	46.90
Jamaica	20.20	17.90
Puerto Rico	1.70	2.00
Saint Kitts and Nevis	-	-
Saint Lucia	14.60	14.80
St. Vincent and the Grenadines	23.10	22.10
Virgin Islands (U.S.)	10.00	10.90

Source: World Bank Group (2017b).

Increases in world food prices in the last few years have complicated Caribbean food security. As a result, the cost of some agricultural imports has risen (the Caribbean is a net importer of most basic grains, pulses and oilseeds, including the ones experiencing continuous and significant price increases, for example, wheat), which is forcing governments to reevaluate their agricultural policies. The negative impact of higher food prices could eventually translate into a severe setback in the regional achievements in poverty reduction and social development and increase pressure

on Caribbean biodiversity and ecosystems. It also places greater importance on the need to maintain ecosystem services, which are most important to the poorer sections of society.

Agricultural activity takes place in several KBAs in the hotspot and can constitute a threat to biodiversity (see Section 6.1.2). However, there are examples of agroforestry landscapes being used to improve soil quality and strengthen ecosystem services, such as wind shelter, biodiversity protection, carbon sequestration and flood control. In Haiti, for example, the promotion of agroforestry has been used to protect an upper watershed and its associated ecosystem services in Parc National Naturel Macaya. During the initial phase of CEPF investment, a project in Catadupa and Cockpit Country KBAs, where forest habitats are threatened by agriculture, demonstrated how shade coffee could be used to harness the ecosystem services of trees while offering farmers economic benefits. In the Dominican Republic, shade-grown, sustainable agroforestry crops, such as high-value grafted cacao and macadamia trees, are the centerpiece of an innovative conservation scheme supported during the initial investment phase, which resulted in the establishment of a private protected area (El Zorzal Private Reserve) to protect the habitat of Bicknell's thrush (*Catharus bicknelli* - VU) and the Dominican Republic's first forest carbon credits scheme.

7.3.3 Forestry

Although the forestry sector in the insular Caribbean is small, it can be locally important. Most islands are heavily dependent on imports to meet their paper, sawn wood, and wood-based panel requirements. The economic contribution of the forestry sector to GDP is, therefore, also relatively small and fluctuates between 0 and 1.6 percent within hotspot countries (Table 7.9).

Table 7.9 Contribution of the Forestry Sector to GDP in the Caribbean, 1990-2011

Country	1990	2000	2011	Trend 1990 - 2011
Barbados	0.7	1.6	1.5	
Cuba	0.3	0.4	0.2	
Dominica	0.6	0.4	0.3	
Dominican Republic	0	0.1	0	
Grenada	0.3	0.2	0.2	
Haiti	0.2	0.1	0.1	
Jamaica	0.9	0.6	0.5	
Puerto Rico	0.3	0.2	0.1	
St. Kitts and Nevis	0.1	0	0.1	
Saint Lucia	1.1	0.5	0.4	
St. Vincent and the Grenadines	0.1	0.1	0.1	

Source: Lebedys and Li (2014).

The proportion of forest land on the larger islands ranges from 3.52 percent in Haiti to 55.91 percent in Puerto Rico in the Greater Antilles and from 2.33 percent in Aruba to around 57.77 percent in Dominica in the eastern Caribbean (Table 7.10).

Table 7.10 Forest Cover in the Insular Caribbean

Country Name	Forest Area in 2015 (Percentage of Land Area)	Percentage Change in Forest Cover between 2005 and 2015
Aruba	2.33	0.00
Antigua and Barbuda	22.27	0.00
Bahamas, The	51.45	0.00
Barbados	14.65	0.00
British Virgin Islands	24.13	-0.27
Cuba	30.76	5.43
Curacao	-	-
Dominica	57.77	-3.55
Dominican Republic	41.05	6.85
Grenada	49.97	0.00
Haiti	3.52	-0.29
Jamaica	30.95	-0.37
Puerto Rico	55.91	3.73
Saint Kitts and Nevis	42.31	0.00
Saint Lucia	33.28	-0.98
Saint Martin (French part)	18.38	0.00
St. Vincent and the Grenadines	69.23	2.56
Sint Maarten (Dutch part)	-	-
Turks and Caicos Islands	36.21	0.00
Virgin Islands (U.S.)	50.29	-3.23

Source: World Bank Group (2017b).

Between 2005 and 2015, Cuba, the Dominican Republic, Puerto Rico, and St. Vincent and the Grenadines gained forest cover, while the British Virgin Islands, Haiti, Jamaica, Saint Lucia and the US Virgin Islands all lost it (World Bank Group 2017b). The decline of forest cover in Haiti is associated with poverty (Agarwal *et al.* 2013).

Wood charcoal production in Cuba was 57,000 tonnes in 2013, down from 73,000 tonnes in 2009. During that same period, wood charcoal production in the Dominican Republic decreased from 40,000 to 19,000 tonnes but increased in Haiti from 31,000 to 33,000 tonnes. In Jamaica, charcoal production remained constant over the period at 10,000 tonnes (data from http://faostat.fao.org/ accessed 30 September 2017).

7.3.4 Mining

Mining and quarrying are an important source of foreign exchange for some hotspot countries, especially Cuba (cobalt and nickel), the Dominican Republic (bauxite, ferronickel, gypsum, limestone, marble, nickel, salt, sand and gravel), and Jamaica (bauxite, alumina and gypsum). Salt mining on Inagua in The Bahamas is vital to the local economy.

Mining and quarrying are expected to continue to be important economic activities in the region. Cuba, for instance, is seeking to increase exploitation of nickel reserves and further develop the

small and medium-sized mining sector (China Daily, 2016; Marsh 2017a). The government of Jamaica has prioritized the "full revival" of the bauxite industry (Henry 2017; Government of Jamaica, Ministry of Transport and Mining 2017). Concerns about the negative impacts of mining and quarrying activities, particularly open-pit bauxite mining, on human health, communities and the environment are growing (see Section 6.1.8).

7.3.5 Energy Production and Distribution

Per capita energy use is high in the Caribbean, especially in the US Virgin Islands and the Dutch Caribbean islands. Due to limited development of other sources, 90 percent of all energy used in the region comes from petroleum, most of which is imported at high cost. However, it has been suggested that most Caribbean countries have enough renewable energy sources (i.e., solar, wind, geothermal and hydropower) to meet their peak demand for energy (Samuel 2013 cited in McGuire 2016).

Renewables represent only 8 percent of the energy mix for the region, compared to 20 percent globally (UNDP 2016b). In Dominica, however, renewables account for 28 percent of electricity generation (McGuire 2016). Current low levels of renewable energy generation notwithstanding, hotspot countries are moving towards increasing their use of renewables. Aruba has a target of being fossil fuel free by 2020, for example. The Dominican Republic's renewable energy goal is 25 percent by 2025, while Jamaica aims for renewables to meet 30 percent of its energy needs by 2030.

All hotspot countries are net importers of fossil fuels. The high cost of energy limits the productive capacity of the private sector and the wider economy (UNDP 2016b). Due to high prices and limited electricity distribution networks, remoter and poorer rural communities tend to be strongly dependent on fuelwood and charcoal for cooking and crop-drying but over-harvesting has led to degradation and loss of forest and scrub areas, and rising energy demand is only likely to increase this.

Investment in renewable energy alternatives by hotspot countries has the dual benefits of reducing bills for imported fuel and making contributions towards Nationally Determined Contributions under the Paris Climate Change Agreement (see Chapter 10). Examples of investments by hotspot countries include:

- A 4 MW wind and solar project in Antigua and Barbuda to provide energy to desalinate water and build climate resilience.
- Public-private partnerships for renewable energy in Grenada to tap into that country's geothermal and solar energy.
- A 3 MW solar farm in Saint Lucia to add utility-scale renewable energy to the national power company's generation mix.
- Scaling up renewable energy investments in Haiti to expand and improve access to electricity for Haitian households, businesses, and community.

Most governments have also been actively promoting the efficient use of non-renewable energy sources, and some countries have adopted energy-saving targets and introduced cleaner energy

technologies and demand management programs. Across the hotspot, countries have begun putting incentives in place to encourage private sector investment in renewable energy (see, for example, http://www.capricaribbean.com/re-incentives).

7.3.6 Offshore Financial Sector

The offshore financial sector is a principal economic activity in many Caribbean countries, particularly Aruba, Anguilla, The Bahamas, Barbados, the British Virgin Islands, the Cayman Islands, Saint Kitts and Nevis, and the Turks and Caicos Islands. The Cayman Islands and The Bahamas host the third and fourth largest offshore financial centers worldwide after Hong Kong and Singapore (IMF 2017b). In 2015, the offshore sector contributed 11 percent to the GDP of the British Virgin Islands and 2.8 percent to that of the Cayman Islands (IMF 2017b). There is increased international scrutiny of the offshore sector to combat illegal tax evasion, address issues related to regulatory loopholes, and strengthen the fight against money laundering and financial terrorism. The heightened regulatory uncertainty brought about by ongoing global regulatory reforms poses key challenges to the sector (Ogawa *et al.* 2013).

7.3.7 Fisheries and Aquaculture

Fish, fish products, and other marine biodiversity form a significant source of employment and foreign exchange earnings in the Caribbean and fish is the most important source of protein after poultry in the region, especially in rural areas where the incidence of poverty may be high. Fisheries accounted for an average of 0.77 percent of GDP between 2010 and 2014 in 12 Caribbean Regional Fisheries Mechanism (CRFM) member states[42] in the hotspot, ranging from a high of 2.03 percent in Anguilla to a low of 0.36 percent in Montserrat (CRFM 2015). For the years 2013-2014, the value of the marine capture fisheries production, at first point of sale, for all CRFM states[43] was estimated at approximately $409 million annually and the value of the aquaculture fishery was $53 million annually (CRFM 2015).

Increased erosion from poor land management is negatively impacting coral reefs, mangroves and seagrass beds, which are critical for inland fisheries in the region. Aquaculture has been developed on many islands but the industry has had negative environmental impacts, including clearance of mangroves and other coastal vegetation for ponds, declining water quality caused by nutrient enrichment, oxygen depletion of out-flowing water, and the escape of invasive species.

7.3.8 Other Industries

Apart from mining and energy, other industrial activities in the region include small-scale manufacturing, food and beverage production, some chemical industries, and small oil refineries. Although their direct impacts are small compared to those of large plants, the number and distribution of small factories throughout hotspot countries make them a potentially important source of pollution, especially as most are unlikely to possess modern, clean technologies. Against

[42] Anguilla, Antigua and Barbuda, Bahamas, Barbados, Dominica, Grenada, Jamaica, Montserrat, Saint Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines, and Turks and Caicos Islands.
[43] Including non-hotspot counties of Belize, Guyana, and Trinidad and Tobago.

this backdrop, initiatives such as the Dominican Republic's "Collaboration of Business Sector Round Tables for Climate Action" are very important. In July 2017, the National Council for Climate Change and the Clean Development Mechanism, the Popular Foundation and ECORED[44] set up this public-private partnership to help businesses mitigate greenhouse gas emissions in their production facilities.

[44]For more information about ECORED, see Chapter 9, Table 9.10.

8 POLICY CONTEXT OF THE HOTSPOT

Biodiversity protection and management in the Caribbean takes place through a multi-layered, multi-scalar system of policy, legislative and institutional frameworks. National-level action is informed and complemented by regional and international initiatives and frameworks.

The Caribbean Islands Hotspot comprises a mix of independent states, and overseas countries and territories and outermost regions of France, the Netherlands, the UK, and the USA. The former are responsible for developing their policy frameworks, whereas the policy frameworks of the latter are informed by their associated metropoles. National development in overseas countries and territories and outermost regions typically falls under local purview, while foreign (including accession to international treaties) and defense policies are set in Europe and the USA.

8.1 International Frameworks and Agreements

Multilateral environmental agreements (MEAs) are a result of international processes. They guide global, regional and national action on environmental issues, making them important elements of legal and governance regimes for the environment (UNEP 2016a). The international conventions, along with associated technical support, projects, and financing mechanisms, are important frameworks for biodiversity protection in hotspot countries and provide useful reference points and benchmarks for national efforts.

CEPF-eligible countries in the hotspot are signatory to several MEAs that guide global, regional, and national action on environmental issues. These include the CBD, the United Nations Framework Convention on Climate Change (UNFCCC), the United Nations Convention to Combat Desertification (UNCCD), and biodiversity-related MEAs, such as the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), the Convention on the Conservation of Migratory Species of Wild Animals (CMS or Bonn Convention), and the Convention Concerning the Protection of the World Cultural and Natural Heritage (Table 8.1).

There are regional policies and agreements that directly and indirectly influence biodiversity management, such as the Cartagena Convention's Protocol Concerning Specially Protected Areas and Wildlife (SPAW). Thirty-two protected areas in the hotspot have been listed under the SPAW Protocol, six of which are in CEPF-eligible countries, including Parque Nacional Jaragua, Parque Nacional Sierra de Bahoruco and Parque Nacional Los Haitises in the Dominican Republic.

Several of these MEAs have also been ratified by France, the Netherlands, the UK, and the USA and flow down to their overseas countries and territories and outermost regions. The USA has ratified the UNFCCC but not the Kyoto Protocol. In June 2017, it announced its withdrawal from the 2016 Paris Agreement.

Table 8.1 Hotspot Parties to Global Environmental Agreements

Country	Environmental Agreement												
	CBD	CC			CITES	CMS	CPB	UNFCCC-KP	UNCCD	UNFF	Ramsar	WHC	No. of Agreements
		SPAW	LBS	OSP									
Antigua and Barbuda	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	11
Bahamas	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	11
Barbados	Y	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y	10
Cuba	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	11
Dominica	Y	N	N	Y	Y	N	Y	Y	Y	Y	N	Y	8
Dominican Republic	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	12
Grenada	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	11
Haiti	Y	N	N	N	N	N	N	Y	Y	Y	N	Y	5
Jamaica	Y	N	Y	Y	Y	N	N	Y	Y	Y	Y	Y	9
Saint Kitts and Nevis	Y	N	N	Y	Y	N	Y	Y	Y	Y	N	Y	8
Saint Lucia	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	11
St. Vincent and the Grenadines	Y	Y	N	Y	Y	N	Y	Y	Y	Y	N	Y	9
France	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	12
Netherlands	Y	Y	N	Y	Y	Y	Y	Y[2]	Y	Y	Y	Y[4]	11
UK	Y[1]	N	N	Y	Y	Y	Y	Y[3]	Y	Y	Y	Y	10
USA	N	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	9

Notes: Y = Party to agreement; N = Not a party to agreement.

CBD = Convention on Biological Diversity; CC = Cartagena Convention; SPAW = Protocol Concerning Specially Protected Areas and Wildlife; LBS = Protocol Concerning Pollution from Land-Based Sources and Activities; OSP = Protocol Concerning Co-operation and Development in Combating Oil Spills in the Wider Caribbean Region; CITES = Convention on International Trade in Endangered Species; CMS = Convention on Migratory Species; CPB = Cartagena Protocol on Biosafety; UNFCCC-KP = United Nations Framework Convention on Climate Change – Kyoto Protocol; UNFF = United Nations Forum on Forests (all UN member states); UNCCD = United Nations Convention to Combat Desertification; Ramsar = Convention on Wetlands of International Importance; WHC = World Heritage Convention

1= Not ratified in Anguilla, Montserrat and Turks and Caicos Islands

2 = For the Kingdom of Netherlands in Europe

3 = In respect of Great Britain and Northern Ireland, including the Caymans Islands since March 2007

4 = Acceptance for Saba, St. Eustatius, Bonaire and Curaçao

Caribbean countries, like many other developing nations, have found it difficult to fulfill their MEA obligations due to a lack of capacity to address emerging and increasingly complex scientific and technical issues (CARICOM n.d.). UN Environment (formerly UNEP) and the CARICOM Secretariat have responded to this challenge with the Caribbean Hub of the EU-funded Programme for Capacity Building Related to Multilateral Environmental Agreements (see Table 8.4). National-level stakeholders have articulated other challenges associated with MEA implementation and reporting, including coordinating the activities and requirements of various conventions to which they are signatories and the amount of time countries must spend reporting on the conventions (Secretariat for the Convention on Biological Diversity 2018).

8.1.1 Convention on Biological Diversity

All CEPF-eligible countries are signatories to the CBD and the associated Nagoya Protocol on fair and equitable sharing of genetic resources. National Biodiversity Strategies and Action Plans (NBSAPs) are the main instrument for implementing the CBD. NBSAPs address the mobilization of financial resources, research, the regularization and consolidation of legislation, public awareness, and use of traditional knowledge. All the CEPF-eligible countries, except Haiti, have at least a draft NBSAP, while others are revising and updating their first NBSAP. Haiti has prepared an NBSAP profile and submitted a national report. Countries provide national reports to the CBD on implementation progress. Eight of the CEPF-eligible countries, plus Cuba, have completed their fifth national reports. Reporting is framed against the 20 Aichi Targets slated for completion by 2020.

Although plans and reporting systems are in place, actual implementation of NBSAPs remains a challenge in the hotspot. The reasons for this include: lack of capacity and differing capacities among agencies and stakeholders; difficulties in encouraging sectors to take on responsibility for implementation; absence of interdisciplinary frameworks for integrating biodiversity into sectors; lack of adequate financing; and lack of interest and knowledge of biodiversity among key political and decision-making stakeholders (UNEP/CBD 2009).

8.1.2 Convention to Combat Desertification and Land Degradation

Nine of the CEPF-eligible Caribbean countries[45] have already prepared their National Action Plans (NAPs) for the UNCCD. NAPs address degradation associated with agriculture, grazing/animal husbandry, urbanization and mining/mineral extraction, where relevant. National reporting takes place via the Performance Review and Assessment of Implementation System (PRAIS) electronic systems. Legislatively, the NAPs are administered through diverse policies, such as forestry policies, rather than through a discrete system.

8.1.3 United Nations Framework Convention on Climate Change (UNFCCC)

All 11 CEPF-eligible countries have submitted their first or second national communications (reports) to the UNFCCC (see Section 10.4). The UNFCCC's mitigation and adaptation measures

[45] Antigua and Barbuda, The Bahamas, Barbados, Dominica, Dominican Republic, Grenada, Haiti, Jamaica, and Saint Kitts and Nevis.

and supporting agreements can impact biodiversity protection. The Paris Agreement, for instance, strongly endorses forest conservation, which could contribute greatly to biodiversity conservation. Climate change funding, through such sources as the GCF or the Adaptation Fund, can also be an important source of support for biodiversity projects.

8.1.4 International Convention on Wetlands (Ramsar)

The convention requires signatory countries to designate and protect wetlands of international importance. Countries also need to inventory wetland biodiversity. Thirty-seven wetlands across the hotspot have been designated as Ramsar sites (Table 8.2). Twenty-eight are located in KBAs, including sites in Cuba and the EU overseas countries and territories and outermost regions. There is a supporting Caribbean Wetlands Regional Initiative in place, which has developed a strategy to facilitate implementation of the convention and includes linkages to other frameworks, including the CBD.

Table 8.2 Ramsar Sites and Associated KBAs – Caribbean Islands

Country/ Territory	Ramsar Sites	Related KBAs
Antigua and Barbuda	Codrington Lagoon	Codrington Lagoon and the Creek
Aruba*	Het Spaans Lagoen	
Bahamas	Inagua National Park	Great Inagua
Barbados	Graeme Hall Swamp	South Coast Beaches
Bonaire*	Het Pekelmeer	Pelkermeer Saltworks
	Het Lac	Lac Bay
	Klein Bonaire Island and adjacent sea	Klein Bonaire
	Het Gotomeer	Washington-Slagbaai National Park
	De Slagbaai	Washington-Slagbaai National Park
British Virgin Islands*	Western Salt Ponds of Anegada	Anegada Island
Cayman Islands*	Booby Pond and Rookery	Booby Pond Nature Reserve
Cuba	Ciénaga de Lanier y Sur de la Isla de la Juventud	Ciénaga de Lanier y Sur de la Isla de la Juventud
	Ciénaga de Zapata	Ciénaga de Zapata
	Buena Vista	Buena Vista
	Gran Humedal del Norte de Ciego de Ávila	Gran Humedal del Norte de Ciego de Ávila
	Humedal Río Máximo-Cagüey	Río Máximo
	Humedal Delta del Cauto	Delta del Cauto
Curaçao*	Northwest Curaçao	North-east Curaçao Parks and Coast
	Rif-Sint Marie	
	Malpais/Sint Michiel	Malpais/Sint Michiel
	Muizenberg	Muizenberg
Dominican Republic	Parque Nacional Manglares del Bajo Yuna	Manglares del Bajo Yuna
	Humedales de Jaragua	Parque Nacional Jaragua
	Refugio de Vida Silvestre Laguna Cabral o Rincón	Laguna Cabral

Country/ Territory	Ramsar Sites	Related KBAs
	Lago Enriquillo	Lago Enriquillo e Isla Cabritos
Grenada	Levera Wetland	Levera Beach
Guadeloupe*	Grand Cul-de-Sac Marin de Guadeloupe	Grand Cul-de-Sac Marin's eastern coastline; Islet of Tête à l'Anglais
Jamaica	Black River Lower Morass	Black River Great Morass
	Mason River Protected Area	Stephney Johns Vale - Bull Head
	Portland Bight Wetlands and Cays	Portland Bight Protected Area
	Palisadoes - Port Royal	
Martinique*	Etang des Salines	
Saint Lucia	Mankòtè Mangrove	Pointe Sable
	Savannes Bay	Pointe Sable
Saint-Martin*	Zones humides et marines de Saint-Martin	Grand Etang
Sint Maarten*	Mullet Pond	
Turks and Caicos*	North, Middle and East Caicos Islands	North, Middle and East Caicos Ramsar Site

Notes: * = overseas country or territory or outermost region.

8.2 Regional Institutional Frameworks, Policies and Initiatives

Key regional groupings include CARICOM, the OECS and ACS. The secretariats and technical institutes of these associations administer regional projects and policies that address biodiversity concerns. Caribbean branches of international organizations are also active in the region, for example, the Caribbean Development and Cooperation Committee (CDCC) of UNECLAC and the UN Environment Caribbean Environment Programme, Regional Coordination Unit (UNEP CAR/RCU). Membership in regional political groupings is shown in Table 8.3, and a description of the organizations and their biodiversity-related work appears Table 8.4. (Table 8.4 does not include climate policies and projects, which are described in Chapter 10.)

There is no specific regional inter-governmental body responsible for biodiversity in the way that there is a regional organization devoted to climate change.[46] However, several regional agencies play a key role in natural resource and biodiversity management in the Caribbean. The mandates of CARICOM and the OECS include sharing human resources and providing technical expertise to countries where specific skill sets are absent. In some instances, regional agencies act as intermediaries between international funders and national stakeholders. Several multi-country projects are managed by these regional organizations.

The challenges associated with the hotspot's regional agencies include overlap of mandates and, sometimes, redundancy in projects and programs. Regional agencies have also been critiqued for their low level of civil society engagement. At the project level, engagement is primarily with national governmental agencies rather than civil society. Where engagement with civil society occurs, it is generally at the point of implementation, often with civil society as a beneficiary,

[46] The *Caribbean Community Climate Change Centre* (*CCCCC*) in Belize is the CARICOM institution mandated to coordinates the Caribbean region's response to climate change (see Chapter 11, Climate Change Assessment).

rather than a participant at the strategic stage of conceptualization and design. There is scope for improved coordination among regional initiatives, as well as increased involvement of civil society for better management of the region's biodiversity resources.

Table 8.3 National Membership of Regional Caribbean Political Groupings

Country	Grouping			
	ACS	CARICOM	UNECLAC CDCC	OECS
Anguilla*		A	A	A
Antigua and Barbuda	F	F	F	F
Aruba*	A		A	
Bahamas	F	F	F	
Barbados	F	F	F	
Bonaire*	A		F[1]	
British Virgin Islands*		A	A	A
Cayman Islands*		A	A	
Cuba	F		F	
Curaçao*	A		A	
Dominica	F	F	F	F
Dominican Republic	F		F	
Grenada	F	F	F	F
Guadeloupe*	A		A	
Haiti	F	F	F	
Jamaica	F	F	F	
Martinique*	A		A	A
Montserrat*		F	A	F
Puerto Rico*			A	
Saba*	A		F[1]	
Saint Kitts and Nevis	F	F	F	F
Saint-Barthélemy*	A		F[1]	
Saint Lucia		F	F	F
Saint-Martin*	A		F[1]	
St. Vincent and the Grenadines	F	F	F	F
Sint Eustatius*	A		F	
Sint Maarten*	A		A	
Turks and Caicos*		A	A	
U.S. Virgin Islands*			A	

Notes: F = full member; A = associate member; * = overseas country or territory or outermost region; [1].= overseas territory that is not a direct member of UNECLAC but considered a full member as a dependent of France, the Netherlands or the UK, which are full members of UNECLAC.

Current regional and cross-border conservation initiatives in the hotspot include the Caribbean Biological Corridor (CBC), the Caribbean Challenge Initiative (CCI), and the La Selle - Jaragua-Bahoruco-Enriquillo Transboundary Biosphere Reserve (Dominican Republic and Haiti).

Table 8.4 Biodiversity Activities/Programs of Selected Regional Bodies

Regional Body	Description	Biodiversity-relevant Regional Projects, Policies and Frameworks (emphasizing initiatives in the last 5 years)
Association of Caribbean States (ACS)	The organization seeks to facilitate trade, tourism, transportation and the protection of natural resources. Environmental integrity is an organizational focus as is the protection of the Caribbean Sea. The Caribbean Seas Commission was established under the ACS to promote sustainable use of this resource.	Biodiversity conservation and environmental management are not among the ACS's focal areas, but they include the related areas of disaster risk reduction, sustainable tourism, and the Caribbean Seas Commission. ACS member states are signatories to the Convention establishing the Sustainable Tourism Zone of the Greater Caribbean (STZC), which includes social, cultural, environmental and indicators of sustainability. Water quality (bodies of water and potable water), water and energy consumption, and environmental management and monitoring by tourism enterprises are among the environmental indicators. Eight sites in six hotspot countries have been evaluated using the indicators and reports are forthcoming.
Caribbean Community (CARICOM)	Intergovernmental organization focusing on economic integration and regional cooperation. Environmental matters, including biodiversity issues are managed by the Sustainable Development Unit of the CARICOM Secretariat. Decision making is executed through the Ministerial body of the Council for Trade and Economic Development (COTED). Regional environmental projects are either managed through the secretariat based in Guyana or through the CARICOM technical institutes described in this table.	A regional environmental policy is in development and is currently undergoing validation at the country level. The CARICOM Secretariat administers the Programme for Capacity Building related to Multilateral Environmental Agreements (ACP-MEAs). The EU-funded ACP-MEAs is ongoing and is focused on providing training, technical, and policy support for countries to improve MEA implementation, including the Biodiversity Convention. The ACP-MEAs initiative may also be extended for a third phase. The project is also supporting the development of a CARICOM Biodiversity Outlook, which is due to be finalized in 2018. The preparation of a CARICOM Biodiversity Strategy is also underway.
Organization of Eastern Caribbean States (OECS)	Focuses on cooperation, unity and solidarity amongst six independent countries and three overseas territories in the eastern Caribbean. Also promotes joint positions and harmonized approaches with regards to the environment and other sectors.	The OECS has developed model policies and regional strategies related to biodiversity issues. The St. George's Declaration of Principles of Environmental Sustainability in the OECS (2001) and the OECS Environmental Management Strategy constitute the overarching framework outlining the OECS's environmental approach. Most of the OECS's current environmental projects fall under the theme of climate change, however, some biodiversity considerations are included. One such example is the "Climate Change Adaptation and Sustainable Land Management Project in the eastern Caribbean" project, funded by the Global Climate Change Alliance (GCCA+) and implemented in Anguilla, Antigua and Barbuda, British Virgin Islands, Dominica, Grenada, Montserrat, Saint Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines. The project includes work on ecological buffers, ecosystem restoration, reforestation, and river bank stabilization. The OECS has developed a Biodiversity Conservation and Sustainable Use Bill which is in the final draft stages. It is intended to be a model bill for adaptation and adoption at the national level. The Bill was an output of the OECS UNEP Harmonized Biodiversity Legislation Project.

Regional Body	Description	Biodiversity-relevant Regional Projects, Policies and Frameworks (emphasizing initiatives in the last 5 years)
United Nations Economic Commission for Latin America and the Caribbean/ Caribbean Development and Cooperation Committee (UNECLAC CDCC)	The CDCC was established in 1975 to promote and strengthen economic and social cooperation and integration among the countries of the Caribbean and to promote cooperation between them and the countries and integration processes of Latin America and the Caribbean.	While UNECLAC has not been involved in implementing biodiversity projects, per se, it has been providing support for implementing the 2030 Agenda for Sustainable Development in Latin America and the Caribbean, which will assist the countries of the region as they integrate the Sustainable Development Goals (SDGs) into their national strategies and development plans, including those related to biodiversity conservation.
UNEP Caribbean Environment Programme (CEP)	The Caribbean Environment Programme (CEP) was established in 1986. It is administered by a Regional Coordinating Unit (CAR/RCU). The CEP is geared towards regional cooperation within the Caribbean Sea towards sustainable development of the region.	UNEP CAR/RCU administers the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention). This is the umbrella agreement protecting the Caribbean marine environment. The Cartegena Convention protocols are also important for biodiversity protection. These protocols are the Protocol Concerning Pollution from Land-Based Sources and Activities (LBS); the SPAW Protocol; and the Protocol Concerning Co-operation and Development in Combating Oil Spills in the Wider Caribbean Region. Of most relevance to biodiversity is the SPAW Protocol, which works to increase the number of protected and managed natural areas in the Caribbean as well as improve their management. SPAW also supports national and regional conservation initiatives. UNEP CAR/RCU, through SPAW, also coordinates activities and develops synergies with work under international conventions like the CBD and CITES. UNEP/GEF in conjunction with the Centre for Agriculture and Biosciences International (CABI)-Caribbean Office executed the project on “Mitigating the Threats of Invasive Alien Species in the Insular Caribbean”, which developed a regional invasive alien species strategy and piloted national projects and strategies. The project ended in 2013 but components are still active, for example, the Caribbean Alien Species Network.
CARICOM Institutions		
Caribbean Community Climate Change Centre (CCCCC)	The CCCCC is the technical institute of CARICOM responsible for coordinating the region’s response to climate change. The agency is accredited to the GCF.	The CCCCC has developed a Regional Framework for Achieving Development Resilient to Climate Change as well as an associated Implementation Plan that charts the region’s response to climate change. However, neither the framework nor implementation plan addresses biodiversity in detail. A recent CCCCC biodiversity-related undertaking is the “Coastal Protection for Climate Change Adaptation in the Small Island States Project”. It is funded by the German Ministry for Economic Cooperation and Development (BMZ) and ends in 2018. The project seeks to use the ecosystem services of coral reefs and mangroves to help reduce the negative impact of climate change on coastal communities and build climate resilience.

Regional Body	Description	Biodiversity-relevant Regional Projects, Policies and Frameworks (emphasizing initiatives in the last 5 years)
Caribbean Public Health Agency (CARPHA)	CARPHA's Environmental Health and Sustainable Development Department focuses on environmental health and environmental management including aspects of land and watershed management.	CARPHA along with UNEP-CAR/RCU are the co-executing agencies for the GEF-funded "Integrating Water, Land and Ecosystem Management in Caribbean Small Island Developing States – (GEF IWECo)" project. The project began in 2017 and includes work in all the CEPF-eligible countries, excluding Haiti. The project addresses biodiversity, thus, there are options for synergy with CEPF's work. A key output, for example, is expected to be National land-use plans which protect biodiversity. The sources of project funding include GEF STAR allocations under Land Degradation and Biodiversity portfolios. CARPHA and the German development agency the Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) are co-executing the Caribbean Aqua Terrestrial Solutions Programme (CATS). This program is funded by the German Federal Ministry of Economic Cooperation and Development (BMZ) and included projects in Dominica, Jamaica, Saint Kitts and Nevis, Saint Lucia, and St. Vincent and the Grenadines. The program is slated to end in 2017 but has, to date, executed a number of activities for sustainable management of marine management areas. CATS is a platform upon which CEPF activities can build.
Caribbean Regional Fisheries Mechanism (CRFM)	Supports regional coordination and policy development for sustainable fisheries management	Projects include the development of species specific management plans, for example, the 2014 Sub-Regional Fisheries Management Plan for Flying fish in the eastern Caribbean. Along with the CCCCC, CRFM is also responsible for a Coral Reef Plan of Action (2014-2018) which is a roadmap for protecting coral reef biodiversity against a backdrop of climate change impacts

Sources: ACS (2017); CARICOM Secretariat (pers. comm.); CRFM (2017); The Nature Conservancy (2016); OECS Secretariat (pers. comm.); UNEP (2014).

Caribbean Biological Corridor (CBC). The 1,600-kilometer CBC was established by Cuba, the Dominican Republic and Haiti in 2007 as a framework for reducing biodiversity loss through cooperation through ecosystem connectivity across countries and beyond political boundaries. It is an instrument of regional cooperation that promotes sustainable development in the three countries and has been called "one of the most concrete and ambitious efforts to achieve conservation objectives in the Caribbean Islands Hotspot" (Renard and Borobia 2015, p5). The CBC contains several protected areas and offers important linkages among landscapes, ecosystems, habitats and cultures. Jamaica is a Permanent Observer to the CBC and Puerto Rico and the French departments of Martinique and Guadeloupe have expressed interest in participating (UNEP/ROLAC 2012).

There have been two implementation initiatives related to the CBC to date. The first phase from 2010-2014 was intended to establish and demarcate the CBC and begin framework collaboration for biodiversity conservation, environmental rehabilitation and development of livelihood options in Haiti, the Dominican Republic and Cuba. The transition phase between January 2015-June 2016 focused on the Dominican Republic. A second CBC phase, 2017-2020, is underway with support from the EU and UNEP. The CEPF conservation corridors in the Dominican Republic and Haiti fall within the boundaries of the CBC (see Section 5.3).

The Caribbean Challenge Initiative (CCI). The CCI was set up in 2008 by a group of Caribbean governments, with support from TNC, to enhance the conservation of their marine and coastal resources. CCI Governments and territories[47] signed a CCI Leaders Declaration in May 2013 committing them to protect and conserve 20 percent of their marine and coastal resources by 2020 (20-by-20 goal). CCI membership has since grown to include the private sector and has received more than $75 million in funding commitments. By 2017, four of the 11 CCI countries and territories had already met or exceeded their 20-by-20 goal: the Dominican Republic; Puerto Rico; Saint Kitts and Nevis; and the US Virgin Islands (The Nature Conservancy n.d.). The Caribbean Biodiversity Fund (CBF) was established to support implementation of the CCI (see Section 11.7.1).

La Selle - Jaragua-Bahoruco-Enriquillo Transboundary Biosphere Reserve. In mid-2017, this transboundary reserve was added to the UNESCO global network of biosphere reserves. It brings together two previously designated biosphere reserves: La Selle Biosphere Reserve in Haiti (designated in 2012); and Jaragua-Bahoruca-Enriquillo Biosphere Reserve in the Dominican Republic (designated in 2002). These two reserves represent ecological corridors divided by a political and administrative frontier. The transboundary reserve is expected to provide a framework for enhanced environmental management and conservation cooperation. The CEPF Massif de la Selle - Sierra de Bahoruco - Hoya de Enriquillo Basin Binational Conservation Corridor overlaps with the transboundary reserve.

8.3 National Policies, Strategies, Plans and Institutional Frameworks

The policy and institutional context for protected area management in the hotspot is changing, but there remain challenges that impede efforts. All CEPF-eligible countries have institutional frameworks in place, with legal underpinnings, for protected area management (Table 8.5). The institutional landscape can be complex, with many agencies having authority over protected areas, and few overarching coordinating mechanisms, particularly at the operational level. Countries typically have in place a range of legislation, policies, and plans that are relevant to biodiversity management. These are summarized in the country tables in Appendix 5, along with summary descriptions of relevant institutional and monitoring frameworks, NBSAPs, and threats and opportunities for biodiversity conservation.

Countries have established different categories, norms, and nomenclatures for their protected areas but many have sought to use the protected area categories established by IUCN. National protected area systems in the hotspot include UNESCO World Heritage Sites and Biosphere Reserves, as well as Wetlands of International Importance designated under the Ramsar Convention.

Most hotspot countries now have defined protected area systems and some have supporting master plans in place, for example, The Bahamas, the British Virgin Islands, Cuba, Grenada, and Jamaica. Antigua and Barbuda's protected area master plan is under development and stakeholder consultations were held on Saint Lucia's draft plan in 2017 (Table 8.5). The process of developing

[47] Participating countries and territories: The Bahamas; British Virgin Islands; Dominican Republic; Grenada; Haiti; Jamaica; Puerto Rico; Saint Kitts and Nevis; Saint Lucia; St. Vincent and the Grenadines; and the US Virgin Islands

master plans has been protracted in some instances. Active management does not always accompany protection under national frameworks, and implementation of protected area master plans (and site-level management plans) has been impeded by a combination of lack of resources, capacity and political will (Brown *et al.* 2007).

National parks and other protected areas are well established in many overseas countries and territories and outermost regions (Brown *et al.* 2007), for example those of the Netherlands (Bonaire and Saba Marine Parks, etc.), France (Parc National de la Guadeloupe, Parc National de la Guyane, Parc Naturel Régional de la Martinique, etc.), and the USA (a comprehensive system of state forests in Puerto Rico, as well as the federally managed Caribbean National Forest).

Table 8.5 Institutions and Governance of Protected Areas

Country	Description of National System	Governmental Institutions Involved	Observations on Protected Areas Governance
Antigua and Barbuda	The System of Protected Areas for Antigua and Barbuda, which is in development, aims to include both marine and terrestrial national parks but also co-managed protected areas, private protected areas, community conserved areas (Government of Antigua and Barbuda 2014).	National Parks Authority, Barbuda Council, Fisheries Division constitute legal authorities managing operational protected areas. The Forestry Unit and Development Control Authority are also legal authorities able to manage protected areas.	Existing protected areas generally have management plans. However, due to limited financial resources, little active management takes place, although in some cases, historical and cultural sites are actively managed. Civil society groups, such as the Environmental Awareness Group, are involved in protected area management. The National Coordinating Mechanism on Environmental Conventions (NCM) coordinates the management and implementation of international environmental agreements.
The Bahamas	The Bahamas National Protected Areas System includes all terrestrial and marine reserves and managed areas. The Master Plan for the Bahamas Protected Area System provides a comprehensive blueprint for action to achieve an effective national system of protected areas in The Bahamas.	The Bahamas National Trust oversees the Bahamas National Park System. The Department of Marine Resources is the governmental agency in charge of the Marine Reserve Network.	Both government and non-governmental organizations are key players in the management of protected areas in The Bahamas with a large part given to CSOs, with the Bahamas National Trust responsible for the management of the national parks.

Country	Description of National System	Governmental Institutions Involved	Observations on Protected Areas Governance
Barbados	The Barbados System of Parks and Open Space includes marine and terrestrial existing parks and open spaces dedicated to preservation, conservation improving the overall landscape of Barbados. These areas are declared in one of seven categories: National Parks, Natural Heritage Conservation Areas, Coastal Landscape Protection Zone, Public Parks and Open Spaces, National Attractions, Barbados National Forest Candidate Sites and Shore Access Points.	The Ministry of Housing, Lands and Environment with Natural Heritage Department, National Conservation Commission, oversees the management of protected areas. The Coastal Zone Management Unit is responsible for the management of the coastal zone.	Involvement of non-governmental bodies, citizen groups, private sector and individuals does exist.
Cuba	Cuba's national protected area system includes 211 terrestrial and marine protected areas that account for 20.2 percent of total territorial area.	Centro Nacional de Áreas Protegidas, within the Ministerio de Ciencia Tecnología y Medio Ambiente, is responsible for protected areas.	A multistakeholder board coordinates the management of protected areas and pulls together relevant government bodies: Centro Nacional de Áreas Protegidas (CNAP), Cuerpo de Guardabosques, Dirección Nacional Forestal, Oficina Nacional de Inspección Pesquera, Empresa Nacional para la Protección de la Flora y la Fauna, Dirección de Medio Ambiente, Oficina de Regulación Ambiental y Seguridad Nuclear, Dirección de Ingeniería, Instituto de Planificación Física, and Oficina de Regulaciones Pesqueras. Non-governmental groups, for example, the Fundación Antonio Núñez Jiménez para la Naturaleza y el Hombre, are also involved in local management.

Country	Description of National System	Governmental Institutions Involved	Observations on Protected Areas Governance
Dominica	Protected areas are managed under the National Parks and Protected Areas Act No. 16 of 1975	The National Park Unit remains the largest Section within the Forestry, Wildlife and Parks Division. This Unit is responsible for the maintenance and upkeep of the Botanic Gardens and other public areas in the greater Roseau area, and National sites within the island's National Parks System, including the Morne Diablotin National, Morne Trois Pitons National Park and the Cabrits National Park. Several other nature sites that are not within the established national parks, e.g., the Soufriere Sulphur Springs area, Indian River, Trafalgar Falls, also fall under the jurisdiction of the division.	The Soufriere-Scott's Head Marine Reserve is managed by the Local Management Authority, which includes such stakeholders as fishermen, village councilors, the hospitality industry, Dominica Watersports Association, Dominica Coast Guard and the Fisheries Division. Active management is being operationalized in the Morne Trois Pitons National Park and a buffer zone established under the GEF-funded project, *Supporting Sustainable Ecosystems by Strengthening the Effectiveness of Dominica's Protected Areas System*.
Dominican Republic	A national system of protected areas is in place and includes terrestrial and marine areas. The system includes 128 protected areas covering a terrestrial area of 12,442 km^2 and a marine area of 45,904 km^2. Law 176-07 on National District and Municipalities, city councils were given greater authority for environmental management, including the power to declare areas for conservation within their territorial jurisdiction.	The Dirección de Áreas Protegidas (Protected Areas Department) of the Secretaría de Estado de Medio Ambiente y Recursos Naturales (Ministry of Environment and Natural Resources) is the principal authority in charge of the management of protected areas.	The revision of the Sectoral Law on Protected Areas of 2004 aims to include more co management and involvement of civil society. NGOs, ecological groups, associations, private sector and public can participate in the governance of protected areas under various modalities: co-management / shared management, delegation of administration, technical cooperation or assistance on specific issues, co-management advices.

Country	Description of National System	Governmental Institutions Involved	Observations on Protected Areas Governance
Grenada	Grenada's Protected Areas System includes terrestrial and marine protected areas (national park, marine protected area, forest reserve, heritage conservation area, etc.) The Grenada Protected Area System Master Plan (2010) identifies sites that should be prioritized for designation as protected areas and outlines institutional arrangements and mechanisms for administering designated sites.	Both the Forestry and National Parks Department and the Fisheries Department, within the Ministry of Agriculture have responsibility for the management of protected areas, the latter more specifically for marine protected areas. The Ministry of Tourism has responsibility for managing some tourism and heritage sites. The Grenada Board of Tourism is also involved in management of sites.	Non-governmental agencies like educational institutions, the tourism sector, communities and the public have supported the establishment and management of protected areas, though participation in management is restricted.
Haiti	UNDP conducted a project from 2011 to 2015 to make Haiti's National System of Protected Areas financially viable. Haiti has 26 declared protected areas, of which 15 are marine protected areas.	L'Agence Nationale des Aires Protégées d'Haïti (ANAP) is the government agency with responsibility for protected area management. In 2017, its status was elevated from a department within the Ministry of the Environment to an executive agency.	CSOs are part of Haiti's Protected Areas Working Group. Non-governmental bodies (international and national NGOs, local communities) are participating in the development of management plan for marine protected areas, for example, for the Three Bays National Park, but active management on site is limited.
Jamaica	The 2016 Protected Areas System Master Plan (PASMP) includes all the terrestrial and marine protected areas, buffer zones and corridors. As of 2010, there were 244 protected areas under the jurisdiction of four government agencies.	Natural Resources Conservation Authority / National Environment and Planning Agency (NEPA), Fisheries Division, Forestry Department and Jamaica National Heritage Trust are the agencies in charge of the management of protected areas.	A Protected Areas Committee, comprising the head of government agencies with responsibility for protected area management, was established to oversee the preparation and implementation of PASMP. PASMP's objectives include the participation of non-governmental groups in protected area planning and management through local co-management, memoranda of understanding and delegation of authority. Sites that are managed collaboratively under these various instruments include Portland Bight Protected Area, the Blue and John Crow Mountains Protected National Heritage and Special Fishery Conservation Areas Management plans are in place for some protected areas.

Country	Description of National System	Governmental Institutions Involved	Observations on Protected Areas Governance
Saint Kitts and Nevis	The relatively small protected areas system of Saint Kitts and Nevis is being expanded under the GEF-funded project *Conserving biodiversity and reducing habitat degradation in protected areas and their areas of influence* currently being implemented by UNDP. The GEF investment will enable the legal establishment of five new protected areas (two terrestrial and three marine) and the operationalization of these sites as well as the two existing terrestrial PAs that currently have no management. In so doing, the project will expand the protected areas system from two terrestrial sites totaling 5,260 hectares without any effective management, to four terrestrial sites totaling 8,810 hectares and three marine sites totaling 11,693 hectares, all of which will be actively managed. A Protected Areas Systems Plan (2010) is in place.	The Department of Physical Planning and the Environment within the Ministry of Sustainable Development is the lead agency for environmental management, although other governmental agencies are also involved. The Department of Marine Resources of Saint Kitts and the Department of Fisheries in Nevis oversee marine areas. A protected area agency is being established within the Ministry of Sustainable Development under the GEF-funded project.	The extent of areas under protection is relatively small and active management has been limited due to financial resources and the small number of designated areas. The GEF project is helping to strengthen the legal and regulatory framework for protected areas by revising and updating key laws and regulations to support management; establishing inter-institutional and multi-stakeholder coordination and information sharing mechanisms; and creating sustainable financing mechanisms and business planning strategies that will ensure sufficient long-term funding support for management of the protected area system. The new protected area agency will be responsible for managing all protected areas, except Brimstone Hill Fortress National Park, which will remain under the authority of the St. Christopher National Trust. The private sector and NGOs are involved in the management of protected areas. For example, under the aforementioned GEF project, the Saint Kitts National Trust and Brimstone Hill Fortress National Part Society are involved in public awareness activities and in the execution of eco-tourism activities. Private sector is involved in training activities and natural resource base livelihood aspects of the project.

Country	Description of National System	Governmental Institutions Involved	Observations on Protected Areas Governance
Saint Lucia	A draft Systems Plan for Protected Areas in Saint Lucia has been prepared and was revised by a multi-stakeholder group in 2017. The plan is yet to be approved, however. The system includes marine and terrestrial sites.	Forest Reserves and Protected Forests fall under the responsibility of the Department of Forestry; and Nature Reserves are under the authority of the Saint Lucia National Trust. National parks, protected landscapes and historic sites are slated to be managed by a new National Parks and Protected Landscapes Section within the Ministry responsible for Physical Development (except Historic Sites owned under the authority of the Saint Lucia National Trust). Marine Management Areas and Marine Reserves are under the responsibility of the Fisheries Department.	Non-governmental bodies and communities are involved in the management of protected areas. The Saint Lucia National Trust, for example, has oversight of local associations and communities (like for the Soufriere Marine Managed Area). Management plans are not in place for all sites.
St. Vincent and the Grenadines	The St. Vincent and the Grenadines National Park and Protected Areas System Plan includes terrestrial and marine designated protected areas such as national parks, forest reserves, wildlife reserves, marine reserves. Protected areas are established under various legislation including the Forest Resources Conservation Act (1992), the Wildlife Protection Act (1987), and the Fisheries Act (1986).	The National Parks Rivers and Beaches Authority is the lead coordinator for protected areas management and works in partnership with several governmental organizations (such as the Forestry Department, Fisheries Department, St. Vincent and the Grenadines National Trust, etc.).	The GEF-funded project, *Conserving biodiversity and reducing land degradation using a Ridge-to-Reef approach* is strengthening institutional frameworks and human resource capacities for the operationalization of the Forest Policy, Protected Areas Policy and Protected Areas System Plan, as well as for the implementation of related laws and regulations. Local NGOs and CBOs are involved in co-management arrangements for heritage sites and selected cultural or natural landmarks. Private sector involvement is also encouraged.

8.3.1 Gains in Formal Protection

The extent of marine and terrestrial areas under formal protection in CEPF-eligible countries in the Caribbean has increased by approximately 6,979,672 hectares since 2009, based on World Database of Protected Areas data and information received from in-country stakeholders during the consultation process. Of this, the initial phase of CEPF investment contributed to bringing 111,496 hectares (1.6 percent) under new or expanded protection. No doubt the CCI, with its 20-by-20 goal, has been a catalyst for the increased declaration of marine and coastal sites but there have also been increases in terrestrial protection.

Expanded protected area systems in CEPF-eligible countries include the following:

- In 2015 alone, The Bahamas declared 23 new marine protected areas, totaling just under 4.5 million hectares.
- In August 2009, the Dominican Republic declared 31 new protected areas, covering approximately 1.3 million hectares. Between 2011 and 2014, three sites, totaling 115,097 hectares, were declared as Ramsar sites.
- In 2017, Grenada established Grand Anse Marine Protected Area, which includes almost 2,023 hectares of nearshore marine area, protecting important tourist attractions and sources of sustainable tourism income for local communities. The marine protected area was officially launched at the start of 2018 and new regulations are to be developed (Now Grenada 2017, 2018).
- Between March 2013 and March 2017, Haiti declared 22 new protected areas and formalized protection of four pre-existing ones,[48] bringing a total of 415,874 hectares under protection.
- Saint Kitts and Nevis declared its first marine management area in 2016, encompassing a two-mile radius around its entire coastline. This is an important development for the country. The Saint Kitts and Nevis Marine Management Area will zoned for different uses, such as conservation, recreation, and fishing. The zoning has been submitted to cabinet for gazettal under the Fisheries Aquaculture and Marine Resources Act.

Most protected areas in CEPF-eligible countries are public, having been declared at the national level. However, the initial phase of CEPF investment helped demonstrate proof of concept of policy framework provisions for decentralizing protected areas through support for the declaration of the Dominican Republic's first private protected area and Haiti's first municipal reserve.

El Zorzal Private Reserve in the Dominican Republic is a model for private landowner participation in landscape-level conservation (see Section 7.2.6). It was the first such area created under the 2011 regulations for private protected areas (see Section 8.4.2). Parc Cacique Henri Municipal Protected Area in the Massif de la Selle was created by the municipal government in Anse-a-Pitres, Haiti to protect 3,000 hectares of dry forest for the conservation of a small population of Ricord's iguana.

The initial phase of CEPF investment also supported the establishment of an additional municipal protected area in the Dominican Republic: the 100,000-hectare Área de Conservación Municipal Rio Las Damas in the Sierra de Bahoruco KBA. While not a first for the Dominican Republic, the declaration of this municipal protected area increased that subset of protected areas in the country.

[48] Four protected areas in Haiti were previously established: Parc National Naturel Forest des Pins 1 et 2 (1937); Parc National Historique Citadelle Sans-Souci Ramiers (1974); Parc National Naturel La Visite (1983); and Parc National Naturel Macaya (1983). However, the decrees that formally establishd them were not issued until 2017 (for Forêt des Pins 1 et 2), 2013 (for La Visite and Macaya) and 2010 (for Citadelle Sans-Souci Rami.

8.3.2 Legislative and Institutional Advances

There have also been legislative and institutional advances in several CEPF-eligible countries since 2009. Antigua and Barbuda, for example, passed a comprehensive Environmental Protection and Management Act in 2015, as part of efforts to establish an enabling environment through legislation. Funding for implementation continues to be challenging, and economic development continues to threaten environmental management and conservation outcomes. A planned special economic zone, for example, contravenes laws prohibiting development in the North East Marine Management Area, a protected stretch of coastline, which is home to fragile mangrove ecosystems.

The 2010 constitution of the Dominican Republic recognizes natural and water resources as part of national heritage (Gobierno de la República Dominicana 2010). The country adopted regulations in 2011 and 2015 that allow for the creation of private protected areas within the national system and co-management of protected areas, respectively. The 2011 private protected area regulations, *Reglamento para la Declaración de Áreas Protegidas Privadas o Conservación Voluntaria*, allow for the declaration sites under two conservation categories: strict conservation and sustainable management (Ministerio de Medio Ambiente y Recursos Naturales 2011a). Under the new regulations for co-management, public sector agencies, nonprofit organizations, and academic institutions are among the groups that are eligible for consideration as co-managers (Ministerio de Medio Ambiente y Recursos Naturales 2015). In 2018, a new buffer zone policy, Resolution 10-2018, was introduced, making it possible to increase the 300 m limit of buffer zones, if justified for improving the integrity of proteted ecosystems and their ecological services (Gobierno de la República Dominicana 2018).

In Haiti, not only has the government made strides in increasing formal protection of marine and terrestrial sites, in July 2017, the status of the national protected areas agency, ANAP, was upgraded from a department of the Ministry of the Environment to an executive agency. ANAP is slated to identify additional areas for protection, from 2018 onwards.

Jamaica's Protected Areas System Master Plan was approved in 2016. In that same year, the government of Jamaica announced it would not go ahead with plans to develop a trans-shipment port and industrial park on the Goat Islands in Portland Bight Protected Area. The initial phase of CEPF investment supported CSO awareness raising and advocacy on this issue, which is widely believed to have influenced the final outcome. In 2017, the Jamaican government announced its intention to establish a wildlife sanctuary on the Goat Islands and identified a boundary for Cockpit Country. It also closed Cockpit Country to bauxite mining and indicated the site would be declared a protected area, thereby expanding and strengthening existing protection. The decisions on the Goat Islands and Cockpit Country boundary represent important gains for conservation in Jamaica, even though the area to be protected in Cockpit Country is smaller than desired by civil society stakeholders and members of the scientific community. The CEPF initial investment also supported activities to counter the threat of bauxite mining in Catadupa and Litchfield Mountain-Matheson's Run KBAs, including the preparation of a community conservation action plan in the former.

Saint Kitts and Nevis, and Saint Lucia are establishing new agencies with responsibility for protected area management. Saint Kitts and Nevis is establishing a protected area agency, the first

government unit dedicated to the management of protected areas, with support from the GEF-funded project *Conserving Biodiversity and Reducing Habitat Degradation in Protected Areas and their Areas of Influence*. National parks, protected landscapes, and historic sites are slated to be managed by a new National Parks and Protected Landscapes Section within the ministry responsible for physical development in Saint Lucia. The Saint Lucia National Trust will, however, continue to manage historic sites currently under its authority.

The GEF has been instrumental in supporting the development of policy and institutional frameworks in hotspot countries. Current investments in Dominica, Saint Kitts and Nevis, and St. Vincent and the Grenadines are helping to expand protection, strengthen management and address legal and regulatory gaps (Table 8.5). A GEF project to establish a financially sustainable national protected areas system in Haiti, which ended in 2014, helped to operationalize ANAP and build its technical capacity (Lefebvre 2017). Investment by the GEF in Jamaica for the *Strengthening the Operational and Financial Sustainability of the National Protected Area System* project resulted in a draft overarching policy for protected areas and the preparation of drafting instructions for overarching protected area legislation (i.e., Protected Areas Act) for Jamaica (Onestini 2017).

There have also been legislative and institutional developments in the overseas countries and territories and outermost regions. For example, the Cayman Islands passed the National Conservation Law in 2013, which established the National Conservation Council. In 2014, Montserrat passed the Conservation and Environmental Management Act.

8.3.3 Legislative and Institutional Gaps

There are several laws addressing natural resource management in most national contexts but this multiplicity of policies, laws, and jurisdictions can result in disjointed actions, rather than a more holistic approach that the interconnected ecosystems of small island states require. Improved land-use planning is essential for the rationalization of resources given competing interests. Other shortcomings include gaps in regulatory frameworks, for example, for environmental impact assessments (EIAs), strategic environmental assessments, financing mechanisms, and hunting, as well as a lack of enforcement of existing legislation. In jurisdictions where regulations for planning breaches are outdated, fines are no longer effective deterrents.

Slow legislative processes mean that laws, policies and plans sometimes languish in their draft stage. Stakeholders in the consultations to develop the ecosystem profile suggested that policy failures can be attributed, at least in part, to obsolescence of policies and plans when finally approved. Another challenge noted was the use of outdated or inadequate data and information to formulate policy.

Where laws are in place, they are not always implemented. The absence of accompanying regulations is one impediment to the implementation of laws. For example, lack of clarity on definitions of protected areas hinders effective regulation in Jamaica.

Although CSOs have been engaging more in national and regional policy and decision-making processes and are increasingly recognized as important actors in those spheres (see Section 9.2.2), stakeholders who participated in the consultations identified lack of transparency and public

participation in policy-making processes as challenges in the policy context. Civil society stakeholders also noted that there is a real cost associated with their participation in policy processes and their organizations often do not have the resources to cover these costs.

Institutional capacities, including technical capacities, are inadequate for comprehensive and appropriate site and system level protected area management. The financial base cannot properly support implementation of the polices that are in place and the proactive administration of protected areas.

Many of the biodiversity initiatives in the hotspot are funded, in whole or part, through internationally funded projects. This means that a gap between externally funded initiatives or the withdrawal of external funding can interrupt or completely halt activities. For instance, according to the terminal evaluation of the GEF-supported *Establishing a Financially Sustainable National Protected Areas System* project in Haiti, implemented by UNDP, ANAP's operating budget did allow it to effectively carry out its work without external support (Lefebvre 2017). External support can sometimes facilitate inappropriate technical assistance that does not advance national agendas, however. For example, overseas-based business development consultants brought in under the GEF-funded *Strengthening the Operational and Financial Sustainability of the National Protected Area System* project in Jamaica had neither a knowledge of business planning for protected areas nor an understanding of the Jamaican context (Onestini 2017).

Ecosystem profile consultation stakeholders also noted that policy implementation and site-based actions are impeded by a poor understanding of biodiversity and ecosystems among various stakeholder groups, including policy-makers and the general population.

8.4 National and Sectoral Development Strategies and Biodiversity Conservation

8.4.1 National Development Planning

National development planning in hotspot countries typically takes place against the backdrop of overarching frameworks and sectoral strategies. Some countries, including Aruba, Cuba, Curaçao, Dominican Republic, Jamaica, Montserrat, Saint Lucia, and St. Vincent and the Grenadines have long-range visions and development plans that are implemented through short to medium-term strategies. The Bahamas has reached an advanced stage in formulating and validating its Vision 2040 plan and Grenada's new Strategic Development Plan 2030 has been drafted. Anguilla is embarking on a process to develop a 20-year plan (up to and beyond 2038). Other countries, like Antigua and Barbuda, and Barbados are guided by current three to seven-year medium-term strategies. The development frameworks of Dominica, and Saint Kitts and Nevis include medium-term strategies to lower public sector debt and increase fiscal planning capacity. These are complemented by other medium-term frameworks and sectoral strategies.

The Action Plan for National Recovery and Development of Haiti that was developed following the 2010 earthquake, the Poverty Reduction Strategy Paper, and the Three-year Investment Program, 2014-2016, have been used as tools towards the development of a strategic development plan to make Haiti an emerging country by 2030 (IMF 2014). Biodiversity considerations have

been included in the national anti-poverty strategy. Countries like the Cayman Islands and the Turks and Caicos Islands previously had long-term development plans but are now guided by short- to medium-term strategies.

National development priorities in hotspot counties include economic growth, improved quality of life and poverty reduction, increased resilience, and climate change adaptation. The environment features in the long-range and medium-term plans, sometimes at both the level of a strategic pillar/overarching goal and a specific objective. The fourth strategic axis of the Dominican Republic's national development strategy, Estrategia Nacional de Desarrollo 2030, for example, includes protection of the environment and natural resources and climate change adaptation, which are supported by objectives and lines of action (Ministerio de Economía, Planificación y Desarollo 2012). Jamaica's national development plan, Vision 2030, includes a healthy environment among its goals, and environmental management and biodiversity conservation are reflected in national outcomes (Planning Insitute of Jamaica 2009). The environment is one of four pillars of Vision 2040, the (draft) national development plan of The Bahamas and a sustainable and resilient environment is one of six national priorities (NDP Secretariat 2017). One of the four goals of Barbados's Medium-Term Growth and Development Strategy 2013-2020 is to enhance environmental sustainability in the context of the green economy. The plan includes strategies for transitioning to a green economy and recognizes the importance of biodiversity and conservation strategies to productive sectors and water resources and water quality (Ministry of Finance and Economic Affairs 2013).

8.4.2 Sectoral Planning and Infrastructure Development

The Caribbean relies largely on the exploitation of natural resources for the main economic sectors: tourism, mining, fishing, agriculture, and forestry. The sectoral strategies within the overarching national development plans and discrete sectoral development plans acknowledge the importance of biodiversity and ecosystems. Nevertheless, although environmental and biodiversity conservation concerns are reflected in national and sectoral planning frameworks, in practice they are not fully integrated into the development agenda, which prioritizes infrastructure development and foreign direct investment (FDI) as engines of economic growth.

FDI has been an important element of the Latin America and Caribbean region's model of integration into the global economy, with investments in natural resources, exports and modern services, including tourism (UNECLAC 2016). FDI flows to the Caribbean equaled $6.0 billion in 2015. The Dominican Republic received 39 percent of total inflows (the largest share) to the region, Jamaica 13 percent and the countries of the OECS together received 9 percent (UNECLAC 2016). Antigua, Dominica, Grenada, Saint Kitts and Nevis, and Saint Lucia all have citizenship-by-investment programs to raise revenues.

Tourism is the primary economic driver in most Caribbean economies (see Section 7.3.1). Despite an overall decline in FDI flows to Latin America and the Caribbean, several countries in the Caribbean subregion have been experiencing an investment boom in the tourism sector (UNECLAC 2016). Hotspot countries have a number of sustainable tourism policies, legislation, strategic or master plans in place. These relate to overall sustainable tourism development, and policies and strategies in areas such as protected areas, climate change, agriculture, cultural

heritage, health and sustainable rural development (Andrews *et al.* 2012). At the regional level, the Caribbean Tourism Organisation has prepared the Regional Sustainable Tourism Policy Framework (2008) and the OECS has its Common Tourism Policy (2011). The OECS's policy recognises that community-based tourism can generate socio-economic and environmental benefits for communities through the development of small and microbusiness. It further acknowledges that, for this to happen, enabling regulatory and support mechanisms are needed (OECS 2011). Climate change is a recognised barrier to the sustainability of the sector, and the importance of the natural resource base to the tourism product is reflected in policy frameworks. Nonetheless, in practice, few initiatives in the areas of energy and water conservation, coastal management and marine protection, preservation of natural and cultural resources are incentivised. Tourism sector stakeholders have suggested that contributory local factors include a lack of finances and human capacity (Andrews *et al*. 2012).

Notwithstanding economic gains, investments in tourism, mining and other infrastructure developments can potentially put a strain on natural resources, endanger environmentally sensitive areas, and undermine national policy frameworks for biodiversity conservation. Participants in the ecosystem profile consultations highlighted the need to harmonize tourism and environmental policies and their implementation. They also flagged the need for mining, agricultural, and agro-fisheries policies to be consistent with environmental frameworks. Since 2009, several large-scale investments were planned that threatened KBAs.

In addition to the previously described large-scale trans-shipment port development by a Chinese firm in Jamaica's Portland Bight Protected Area that was abandoned in 2016 following a public outcry, there are a number of other examples. For instance, a special economic zone and large-scale commercial, tourism and residential complex being developed by Chinese investors on Guiana Island in Antigua and Barbuda's North East Marine Management Area and Fitches Creek Bay KBA requires legal overrides to facilitate beach creation on Guiana Island (The Daily Observer 2017). A planned resort development in Saint Lucia, which aims to attract Chinese investors under the citizenship-by-investment program, could threaten the world's rarest snake, the endemic Saint Lucia racer, which is found only on the Maria Islands in Pointe Sable KBA. The project includes the construction of a causeway linking the islands to the mainland, increasing the risk of introducing invasive alien species (Connor 2017; Dart 2017). During its initial investment phase, CEPF supported civil-society-led efforts to remove invasive species from the islands and prepare a biosecurity strategy and protocols to safeguard them from recolonization by rodents and other invasive alien species.

8.4.3 Policy and Planning Framework Challenges, Constraints and Gaps

While gains have been made in increasing formal protection of ecologically important sites and in the legislative and institutional landscapes for conservation, hotspot countries face challenges in the policy and planning contexts. There continues to be a gap between governments' aspirations and the instruments used for policy implementation. This gap is a result, in part, of pressures from different directions, including the need to stimulate economic growth, reduce high levels of indebtedness and address social development concerns (for example, law and order, health care, and education). Environmental legislation and regulations can be enforced partially or not at all when confronted by large-scale development. Expenditure on the environment, including the development or harmonization of policy, legislation and strategic plans, is seen as a lower priority

for national expenditure than other areas. The gap between aspiration and implementation is also a result of an incomplete understanding of environmental imperatives by policy and decision makers.

The integration (mainstreaming) of biodiversity conservation and sustainable environmental management objectives into non-environment sector policy and legislation is weak, with sectoral imperatives sometimes overriding environmental considerations in implementation. There are also gaps that result in policy inconsistencies, for example the weak regulatory framework governing use of pesticides and fertilizers.

Lack of financial resources is a perennial challenge for hotspot countries, given the competing interests described above. Moreover, the region's vulnerability to natural disasters puts governments in a vicious circle of having to spend on recovering from the aftermath of such events, which reduces the availability of funds to invest in mitigating the impact of future events. For example, one early estimate of the cost of the 2017 hurricane season for Dominica put it at 200 percent of GDP (ALBA 2017). On the other hand, green infrastructure is likely to become an increasingly important element of hotspot countries' resilience strategies in the face of the anticipated impacts of climate change.

Given the challenge of inadequate funds, many national biodiversity projects and protected area plans have tried to include sustainable financing mechanisms, such as user fees. There have also been a few instances of payment for ecosystem services schemes in CEPF-eligible countries and, where they have been tried, it has been on a small scale. An impediment to financing schemes, however, has been a poor understanding of the economic value of protected areas and ecosystems in the hotspot. Few economic valuation studies have been carried out for the hotspot's protected areas (see Section 5.4) and, where they have been done, they have not always been used to inform policy and planning (National Environment and Planning Agency 2016). An improved understanding of environmental values can support better assessment and collection of rents and strengthen EIA processes.

Resources to develop appropriate legislative frameworks and climate adaptation measures are often funded through regional and international projects and grants, as opportunities arise. When funding runs out or is withdrawn, the process comes to a standstill. Even when adequate legislation and policies are in place, the human resources to implement or enforce legislation are often lacking. This includes lack of resources to hire staff or rapid staff turnover due to low remuneration.

Primary stakeholders (i.e. communities, natural resource users, etc.) outside of technical CSOs show apathy towards policy development and policy shifts, mostly due to their lack of capacity to understand and absorb what is being put forward. Public education is key but the approach to public education must be altered; policy makers can no longer depend on written documents to communicate their policies, in part because many primary stakeholders have low levels of literacy.

8.5 Strengthening the Policy Context for Conservation

Some of the ways in which the policy context in the hotspot could be strengthened through CEPF investment include:

i. *Improving the information base for policy and decision-making* to address the challenge of data and information deficiencies and ensure that policy is evidence-based.
ii. *Supporting civil society participation in policy-making and policy oversight processes* to improve accountability and transparency and ensure that policies are responsive to the needs of local communities.
iii. *Continuing to support proof of concept for mechanisms that decentralize the establishment and management of protected areas* as part of strategies to address financial constraints and ensure that protected area management takes into account the social and economic needs of local communities.
iv. *Supporting civil society efforts to address information gaps among key constituents for conservation* to strengthen compliance with, and support for, policies and regulations.
v. *Building capacity to develop and implement sustainable financing mechanisms* as a contribution towards addressing funding gaps for the management of protected areas.

9 CIVIL SOCIETY CONTEXT

A central tenet of CEPF is that effective and sustainable conservation is better achieved with the engagement of civil society. CEPF defines civil society as the set of institutions, organizations and individuals located between the family, the state and the market, in which people associate voluntarily to advance common interests. It includes the following groups: local, regional and international conservation NGOs; economic and community development NGOs; scientific research and academic institutions; professional organizations; producer and sales associations; media; education and outreach groups; and the parts of the private sector concerned with the sustainable use of natural resources. Many CSOs are also non-profit organizations, that do not aim to generate a profit and distribute no part of the organization's income to its members, directors, or officers.

CEPF considers these actors to be critical players in the conservation of biodiversity, given their multiple roles in natural resource management, protection, and governance, including the following:

- Creating awareness of environmental issues and advocating for solutions.
- Applied research on biodiversity.
- Monitoring environmental quality.
- Managing or supporting the management of sites and species.
- Supporting communities in the sustainable use of natural resources as part of their livelihood strategies.
- Facilitating the participation of stakeholders in decision-making about the use and management of natural resources and biodiversity.
- Ensuring the equitable distribution of benefits of ecosystems and natural resources, particularly to communities and resource user groups.
- Advising policy and decision-makers on the needs and priorities of local people.
- Influencing policy frameworks and providing inputs to policy development processes.

As with global civil society, Caribbean civil society is heterogenous: organizations have a wide range of interests and mandates, multiple agendas, and varying levels of capacity. There is little coherence across the sector and relatively few fora in which CSOs, particularly NGOs, engage among themselves across thematic issues and countries, particularly at the regional level and across language groups. It is difficult to obtain precise information and data or even reasonable estimates about the size and scope of Caribbean civil society (Webson 2010, Bowen 2015). Several organizations are unregistered or operate informally, and among registered groups, there are those that are inactive or waver between activity and inactivity, depending levels of funding and need. Little is known or has been extrapolated about the financial contribution of Caribbean CSOs over any period (Webson 2010).

This chapter provides an overview of Caribbean civil society and the enabling conditions for CSOs in the hotspot. It broadly explores how selected segments of civil society play a role in environmental management and biodiversity conservation, and reviews the capacity and capacity development needs of environmental NGOs.

9.1 Civil Society Activity in the Environmental Sphere

A rapid exercise to map CSOs in the hotspot identified 379 local, national, regional and international non-profit, non-governmental, and academic organizations working on environment and conservation issues (including in the productive sectors of fisheries, agriculture and ecotourism) in CEPF-eligible countries. The distribution of these organizations by country is shown in Figure 9.1. The mapping exercise was not exhaustive; these numbers should, therefore, be considered indicative rather than definitive. What the exercise does do is show trends in the distribution of CSOs involved in environmental management and conservation in the Caribbean.

Although the primary mandate of all these organizations may not be natural resource management or biodiversity conservation, they are all involved in activities that support or overlap with those areas. For example, several organizations work on socioeconomic development in rural communities and, in that context, promote livelihood strategies aligned with sustainable natural resource use. These strategies include agroforestry and apiculture in protected area buffer zones and countering unsustainable mangrove harvesting.

The main types of organizations identified in the mapping exercise that are active in natural resource management in CEPF-eligible countries are shown in Figure 9.2. Although NGOs are the most represented, there are many active CBOs and resource user (producer) associations (for example, fisherfolk, farmers, beekeepers, tour and dive operators) in the hotspot. It is important to note, however, that only a subset of these organizations is active at the sites prioritized for the new phase of CEPF investment (see Chapter 13). It is also important to note that some of those groups move in and out of activity, depending on availability of funding and institutional capacity at any given time.

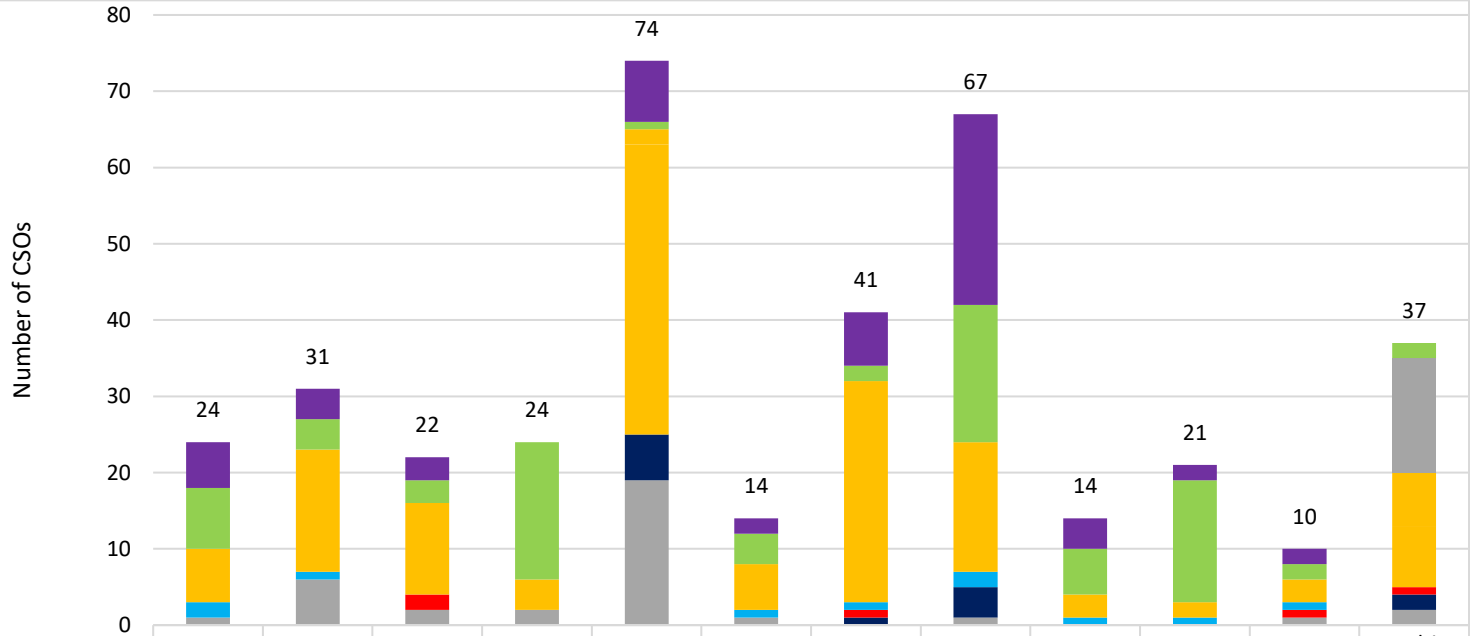
9.1.1 Non-governmental Organizations (NGOs)

People's organizations have traditionally played an important role in social, economic and cultural development in Caribbean society. Civic activity in the region goes as far back as the pre-emancipation period and continues to be important in the modern era (James 2014). The sector has gone from being primarily welfare oriented and volunteer-led to include technical and policy-focused non-profit organizations staffed by full-time professionals that manage large, multi-year projects (Munro-Knight 2013). Caribbean NGOs continue to play an essential role in the delivery of social services. This role becomes even more important during periods of economic stagnation or crisis, in the face of reduced government spending on social and other services and increased unemployment. NGOs also engage in research, capacity building, awareness raising and advocacy. There are emerging models of non-profits as social enterprises.

National Environmental NGOs and Networks

All hotspot countries have least one NGO with a mission that includes biodiversity conservation or related issues, and many have co-management responsibilities for protected areas. The mapping exercise identified 145 national and regional NGOs, of which 137 are national and work at national or site level in CEPF-eligible countries (see Figure 9.1 for their distribution by country and Appendix 6 for a list of these groups). As noted earlier, the results of the mapping exercise should be considered indicative rather than exhaustive.

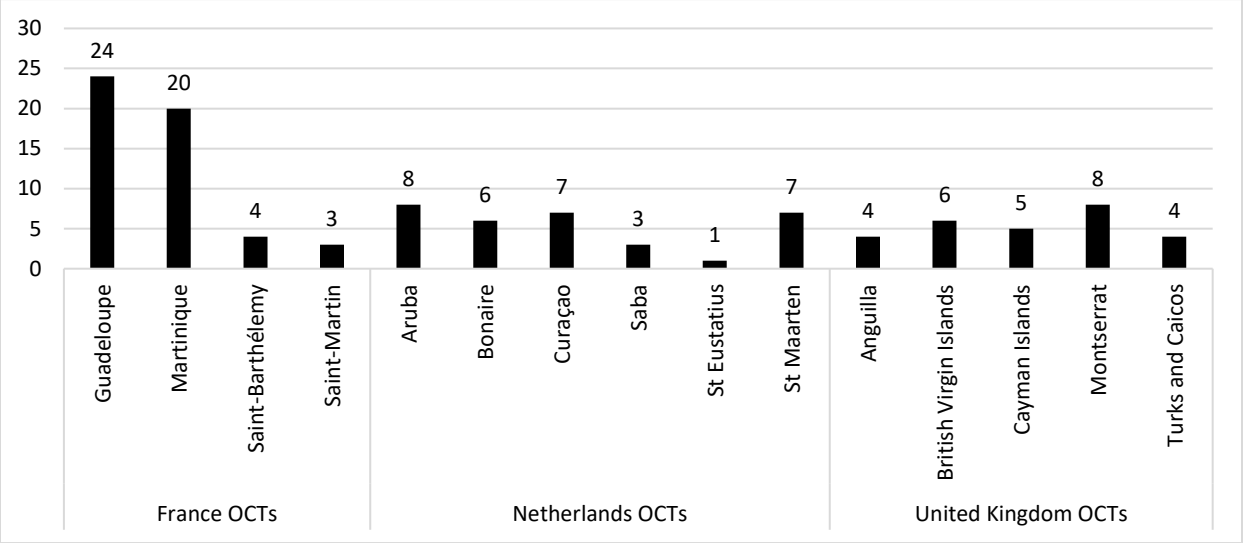
Figure 9.1 Distribution of Mapped CSOs in CEPF-Eligible Countries (n=379)



	Antigua & Barbuda	Bahamas	Barbados	Dominica	Dominican Republic	Grenada	Haiti	Jamaica	St. Kitts & Nevis	Saint Lucia	St. Vincent & the Grens	Multi-country/regional orgs
CBO (63)	6	4	3		8	2	7	25	4	2	2	
Fisherfolk/Farmer org./Coop. (84)	8	4	3	18	1	4	2	18	6	16	2	2
International NGO (15)												15
Network (9)					2							7
NGO (145)	7	16	12	4	38	6	29	17	3	2	3	8
National non-profit foundation (10)	2	1				1	1	2	1	1	1	
Private sector (5)			2				1				1	1
Private sector foundation (13)					6		1	4				2
Research institution (35)	1	6	2	2	19	1		1			1	2
Total	24	31	22	24	74	14	41	67	14	21	10	37

The regional ecosystem profile prepared under the EU BEST initiative identified 110 environmental NGOs in the EU overseas countries and territories and outermost regions (Figure 9.2). Each of the EU overseas countries and territories and outermost regions has at least one local institution with an environmental mandate, including 20 such groups with responsibility for managing protected areas (Vaslet and Renoux 2016).

Figure 9.2 Number of Environmental NGOs Working in the European Overseas Countries and Territories and Outermost Regions (n = 110)



Source: Vaslet and Renoux (2016).

As in other hotspot countries, national CSOs in EU overseas countries and territories and outermost regions are involved in a range of critical actions and functions related to environmental management and conservation, including inventories and ecological monitoring, the creation and management of protected areas, enforcement, research, capacity building, and education and awareness raising (Vaslet and Renoux 2016).

Almost every English-speaking Caribbean island, whether an independent state or an overseas country or territory, has a national trust organization with a heritage preservation mandate.[49] Established by acts of parliament, these organizations have close links to national governments, which reserve membership on the board of directors. Several also receive an annual subvention from the government. The national trusts play a crucial role in preserving the islands' natural and cultural heritage, including the management of state-owned properties and sites. On some islands, the national trust is a leading environmental actor and some have significant biodiversity conservation programs, for example, the Bahamas National Trust, the National Trust for the Cayman Islands, and the Saint Lucia National Trust. National trusts and preservation societies have begun to meet at the regional level to discuss issues of common interest. The first Caribbean Conference of National Trusts and Preservation Societies took place in 2014, with subsequent regional meetings in 2016 and 2017.

[49] Anguilla, The Bahamas, Barbados, the Cayman Islands, Saint Kitts and Nevis, Saint Lucia, St. Vincent, and the Turks and Caicos Islands.

Other NGOs with an environmental or conservation mandate have evolved in different ways, sometimes through an interest in an important site (for example, Grupo Jaragua has a focus on Parque Nacional Jaragua in the Dominican Republic, while the C-CAM Foundation focuses on Portland Bight Protected Area in Jamaica), or a particular resource (for example, birds in the case of Société Audubon de Haiti, or parrots in the case of AMAZONA in Guadeloupe).

Relatively new entrants to the environmental NGO landscape across the CEPF-eligible countries are the conservation trust funds, which are being set up as to provide long-term funding for biodiversity conservation under the auspices of the CBF (see Section 11.7.1).

The economic crisis in Cuba in the 1990s gave rise to a revival and growth of civil society in that country. Although heavily regulated, Cuban civil society has become an increasingly important part of the institutional landscape. There are active environmental NGOs in Cuba, such as Fundación Antonio Núñez Jiménez de la Naturaleza y el Hombre, Sociedad Cubana para la Protección del Medio Ambiente (Pro-Naturaleza), and Asociación Nacional Ornitológica de Cuba. There are also several government-related institutions with active involvement in biodiversity conservation. In addition to the agencies directly responsible for conservation (such as the Centro Nacional de Áreas Protegidas, CNAP, Universidad de Habana, and Centro Oriental de Ecosistemas y Biodiversidad) and which fulfill a similar function to the trusts in other islands.

The results of the rapid mapping exercise suggest that the work of most environmental NGOs is weighted towards an operational orientation (i.e., a focus on the design and implementation of activities related to management of sites and/or species, sustainable livelihoods, community development, environmental education, etc.) rather than advocacy (i.e., a focus on influencing the policies and practices of governments or institutions), even though many groups appear to be engaged in a combination of operational and advocacy initiatives. This was borne out in the results of an anonymous online survey of environmental CSOs in CEPF-eligible countries and Cuba that was carried out in September 2017, as part of the ecosystem profiling process (see Box 8.1). Among 41 respondent organizations, 17 indicated that they would characterize their work as exclusively operational (16) or advocacy-oriented (1). Just under 60 percent said they would describe their organizations as “combination operational and advocacy-oriented”, with the majority (19) weighted towards operational initiatives (see Figure 9.3).

The operational work of NGOs includes site-based management, with some organizations working at a very large scale. The Bahamas National Trust, for example, manages the entire national parks system of The Bahamas (33 national parks, covering over 800,000 hectares). The Jamaica Conservation and Development Trust manages the 49,520-hectare Blue and John Crow Mountains National Park Heritage site. On a somewhat smaller scale, but no less important, the Conservation Trust of Puerto Rico owns and manages 20 natural and historic properties covering more than 7,000 hectares. NGOs are also involved in research, environmental education, promoting sustainable livelihoods, and improving protected area governance through stakeholder-engagement processes.

Box 9.1 Profile of the Respondents to the Online Survey

As part of the profiling process, CANARI carried out an anonymous online survey of non-profit CSOs that work on issues related to environmental management and biodiversity conservation in CEPF-eligible countries of the hotspot and Cuba, focusing on the capacity and networking themes that are featured in the CEPF Collective Civil Society Tracking Tool. One hundred and seventy-eight surveys were administered and 41 returned for a 23 percent response rate.

Where were the respondent organizations from? Almost three-quarters of the respondents (29) were from the CEPF-eligible Greater Antilles countries: the Dominican Republic (14); Haiti (9); and Jamaica (6). Answers were also received from the eastern Caribbean: Saint Kitts and Nevis (1); Saint Lucia (5); St. Vincent and the Grenadines (3); and The Bahamas (3). Responses were received from a balanced cross-section of CEPF grantees and non-grantees from the initial investment phase, with 54 percent (22) coming from the former and 46 percent from the latter.

Who were the respondent organizations? Almost two-thirds of the respondents were national NGOs (Figure 1a). Seventy percent (29) of the respondents were small organizations with 15 or fewer staff members (Figure 1b). CSOs with between 16 and 30 staff members accounted for 17 percent of the total, and those with more than 30 staff members were the least represented (12 percent) among respondents.

Figure 1a Types of CSOs

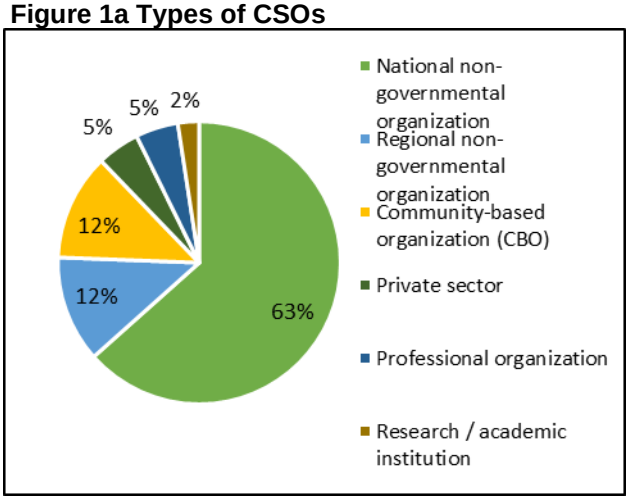
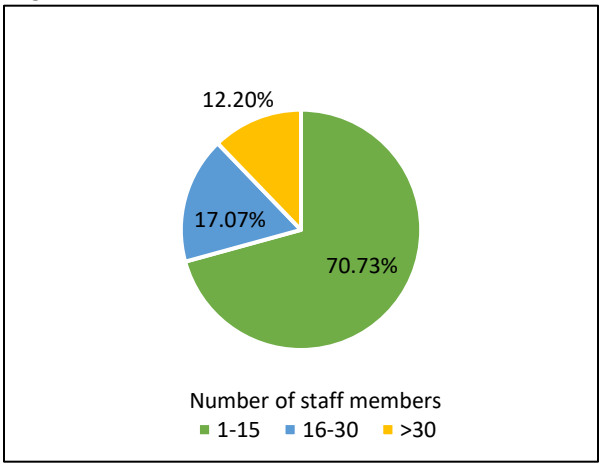


Figure 1b Number of staff members



Almost 60 percent of the respondent CSOs had annual budgets of between $50,000 and $500,000 (Figure 1c). CSOs with small budgets (less than $10,000) accounted for 20 percent (8) of all respondents but represented 80 percent of CBO respondents.

Figure 1c Annual Budget

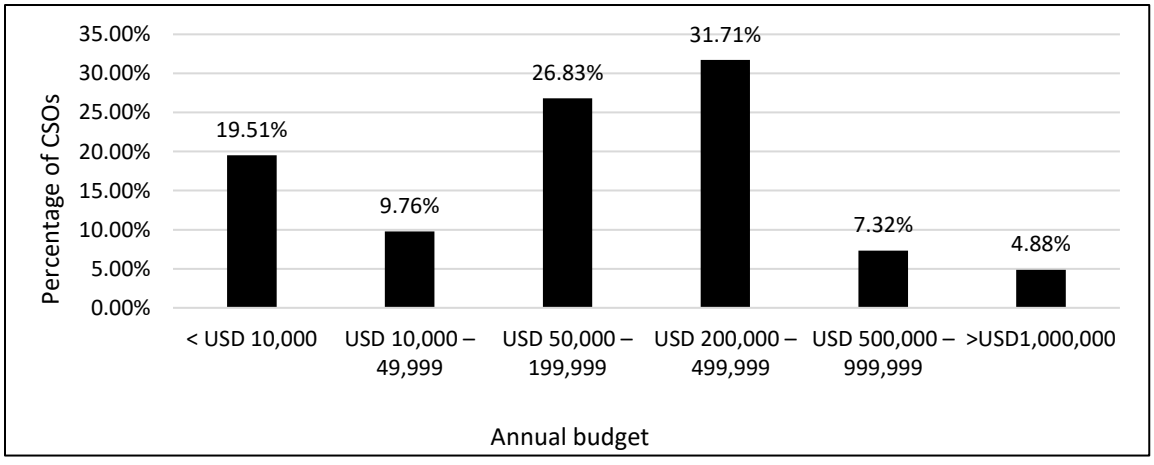
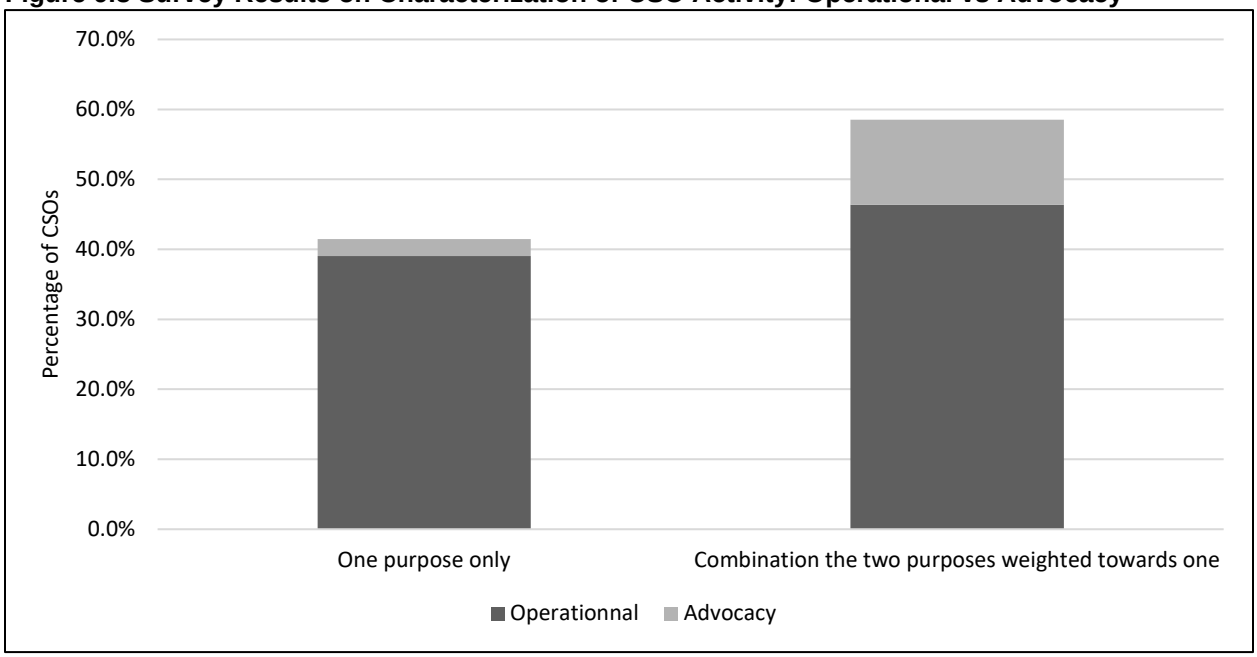


Figure 9.3 Survey Results on Characterization of CSO Activity: Operational vs Advocacy



The scope of work of environmental NGOs in CEPF-eligible countries is shown in Table 9.1. The table shows the primary area of focus of these organizations but it should be noted that many of them work across environmental and socio-economic themes, reflecting the interconnected nature of environmental, social and economic issues, and the strong link between human well-being and positive environmental outcomes.

Table 9.1 Primary Area of Focus of Mapped National Environmental CSOs in CEPF-Eligible Countries

Country	Main Scope of Work					Focus on marine resources
	Sustainable management of natural resources, conservation and climate change	Food security, agriculture and fisheries	Social economic and development	Education	Total	
Antigua and Barbuda	5	2			7	1
Bahamas	15		1		16	4
Barbados	9	1	2		12	1
Dominica	4				4	2
Dominican Republic	32		6		38	1
Grenada	5		1		6	1
Haiti	16	5	5	3	29	1
Jamaica	14	2	1		17	2
Saint Kitts and Nevis	3				3	1
Saint Lucia	2				2	1
St. Vincent and the Grenadines	3				3	1
Total	**108**	**10**	**16**	**3**	**137**	**16**

Regional Environmental NGOs and Networks

More NGOs operate at the national level than at the regional level across the hotspot. Table 9.2 lists selected regional organizations and networks that focus on natural resource management and biodiversity conservation across the hotspot and are active in CEPF-eligible countries. During the initial phase of CEPF investment in the hotspot, a new regional environmental network, Nature Caribé, was formed out of a project to strengthen networking among the CSO members of the IUCN Caribbean Regional Committee, with the intention of filling a gap in collaborative policy influencing and action.

Table 9.2 Selected Regional Environmental NGOs and Networks

Organization	Description
BirdsCaribbean*^	BirdsCaribbean is the largest regional organization committed to the conservation of wild birds and their habitats in the insular Caribbean (including Bermuda, The Bahamas and all islands within the Caribbean basin). It is a non-profit membership organization with more than 5,000 members and supporters from throughout the islands and around the world. BirdsCaribbean promotes on-the-ground conservation action by empowering local partners, raising awareness, and promoting sound science. Its flagship programs include the Caribbean Endemic Bird Festival, West Indian Whistling-Duck, and Wetlands Conservation Project, Caribbean Waterbird Census, BirdSleuth Caribbean, International Migratory Bird Festival, and the Caribbean Birding Trail. http://www.birdscaribbean.org
Caribbean Marine Protected Areas Management Network and Forum (CaMPAM)^	CaMPAM is a network for enhancing the effectiveness of marine protected areas (MPAs) in the wider Caribbean by building the capacity of marine protected area managers, practitioners and fishers in the wider Caribbean and promoting the application of best marine management practices for the transboundary coordination of ecologically-connected areas. It provides a platform for capacity building through training activities, communication tools and grant awarding to expedite transfer of knowledge and lessons learned as well as financial resources across the wider Caribbean region. CaMPAM is guided by UNEP-CEP's SPAW subprogram and in cooperation with its Regional Activity Center. Between 2014 and 2017, CaMPAM coordinated a medium-sized grant program for the six islands associated with the *Eastern Caribbean Marine Managed Area Network* (ECMMAN) project: Antigua and Barbuda; Dominica; Grenada; Saint Kitts and Nevis; Saint Lucia; and St. Vincent and the Grenadines. http://campam.gcfi.org/
Caribbean Natural Resources Institute (CANARI)* ^	CANARI is a regional technical institute with more than 30 years' experience of research, policy influence and capacity building for participatory natural resource governance in the Caribbean. CANARI facilitates and promotes participatory approaches to natural resource governance to conserve biodiversity, enhance ecosystem goods and services, and enhance livelihood benefits and wellbeing of the poor in the Caribbean. CANARI places a strong emphasis on multidisciplinary research, capacity building, partnerships and communication to build awareness and influence policy. Thematic areas of focus include: climate change and disaster risk reduction; strengthening rural community micro enterprises for sustainable livelihoods and poverty reduction through sustainable use and conservation of biodiversity; terrestrial and marine protected areas management; coastal and marine management, including strengthening small-scale fisheries; strengthening civil society and local communities; promoting and strengthening mechanisms for inclusive and participatory governance; strengthening policy, and advocacy on regional and global policies including the 2030 Sustainable Development Agenda and the Sustainable Development Goals. CANARI served as the RIT during the initial phase of CEPF investment in the hotspot. https://www.canari.org

Organization	Description
Caribbean Network of Fisherfolk Organisations (CNFO)	CNFO is a network of national and primary fisherfolk organizations and fisherfolk leaders, operating in CARICOM. Its mission is to improve the quality of life for fisherfolk and develop a sustainable and profitable industry through networking, representation and capacity building. Between 2007 and mid-2016, when it became a registered NGO in Belize, CNFO operated as an informal network of 17 organizations from 10 hotspot countries plus Belize, Guyana, Suriname, and Trinidad and Tobago. CNFO has been involved in policy influencing at the national, regional and global levels. Through networking and partnerships, it has helped mobilise resources for capacity building, information exchange and policy influence, including through the following projects: *Strengthening Caribbean Fisherfolk to Participate in Governance* (CANARI); the ECMMAN project (TNC); and *Climate Change Adaptation in the Eastern Caribbean Fisheries Sector* project (CANARI). http://www.cirp.org.tt/cnfo
Caribbean Network of Rural Women Producers (CANROP)	CANROP aims to improve the standard of living of the region's rural female producers through training, cultural exchange, networking, and trade promotion. Groups of women work together at national level in the participating countries within the scope of CANROP's mission. There are national chapters in Antigua, The Bahamas, Grenada, Guyana, Jamaica, Saint Lucia, and Trinidad and Tobago. https://canrop.com/about/
Caribbean Youth Environmental Network (CYEN)^	CYEN focuses on empowering young people and their communities to develop programs/actions to address socio-economic and environmental issues. These include poverty alleviation and youth employment; health and HIV/AIDS; climate change and global warming; disaster risk reduction; improvement in potable water; conservation and waste management and other natural resource management issues. Its membership comprises youth groups and individual youth in 16 Caribbean countries and territories. http://www.cyen.org
Centre for Livelihoods, Ecosystems, Energy, Adaptation and Resilience in the Caribbean Limited ^	The Centre for Livelihoods, Ecosystem, Energy, Adaptation and Resilience in the Caribbean Ltd. is a not-for-profit company registered in the UK and Barbados, whose mission is to promote, support and implement integrated approaches towards sustainable development and climate change adaptation in the Caribbean. Their approach integrates livelihoods, ecosystem, energy and market access with the aim to provide sustainable solutions to cope with the vulnerability of Caribbean communities. http://www.clearcaribbean.org
Eastern Caribbean Coalition for Environmental Awareness (ECCA)^	ECCA was founded in 1995 to coordinate and implement conservation programs at the sub-regional and regional levels through education, awareness, and research. ECCA's advocacy and awareness-raising activities are focused on the protection of marine mammals, including addressing welfare issues associated with commercial marine mammal parks. http://www.eccea.com
Global Coral Reef Monitoring Network (GCRMN)^	The GCRMN works as the global network of stakeholders, coordinated by regional "nodes", for the management and conservation of coral reefs. The GCRMN-Caribbean mission is to "revitalize and strengthen coral reef monitoring to ensure the collection of useful, comparable and accessible data that can effectively reveal the status and trends of the coral reefs in the region, for regular, robust and strategic reporting to influence coastal management decision-making at the regional level." The GCRMN-Caribbean is coordinated by the UN Environment - Caribbean Environment Programme and is a platform for experts from across the region.

Organization	Description
IUCN Caribbean Regional Committee (CRD)*^	The CRC is a platform and forum for 20 civic and governmental IUCN members in the insular Caribbean. It is a vehicle for knowledge sharing, peer support, collaboration among members and for promoting their active participation and representation in regional and global initiatives, as well as advocating implementation of the IUCN Caribbean Programme and energizing participation in the IUCN One Program. The CRC facilitates the engagement of all members in thematic priorities, such as Red List species, protected areas, watershed management, critical ecosystems, and livelihoods as well as ecosystem-based approaches to climate change adaptation and resilience. Seven CRC members were involved in the initial phase of CEPF investment in the Caribbean and achieved excellent results in biodiversity conservation and related topics. https://www.facebook.com/IUCNCaribbean/
Nature Caribé* ++^	Nature Caribé was formed in 2013 as a vehicle for practical actions, research, knowledge sharing, capacity building, advocacy, education and outreach among Caribbean organizations addressing environmental governance, biodiversity conservation, and sustainable livelihoods. Founding members were mostly part of the IUCN Caribbean Regional Committee grouping who felt it was strategic to network across a wider platform than the IUCN membership in the region to catalyze regional cooperation, influence policy and take collaborative action for the conservation and sustainable use of the region's natural resources. The members are: the Bahamas National Trust; CANARI, Trinidad and Tobago; Caribbean Research and Management of Biodiversity (CARMABI), Curaçao; Centro para la Conservación y Ecodesarrollo de la Bahía de Samaná y su Entorno (CEBSE), Dominican Republic; Environmental Foundation of Jamaica; Fondation pour la Protection de la Biodiversité Marine, Haiti; Grupo Jaragua, Dominican Republic; Jamaica Conservation and Development Trust; Jamaica Environment Trust (JET); and Para La Naturaleza/The Conservation Trust of Puerto Rico. http://www.naturecaribe.org/
Panos Caribbean*	Panos Caribbean is a regional organization that helps journalists to cover sustainable development issues that are overlooked and misunderstood. It works to amplify the voices of the poor and the marginalized through the media and ensure their inclusion in public and policy debate, in order to enable Caribbean communities and countries to articulate and communicate their own development agenda. Panos focuses on themes which transcend national boundaries, such as child rights, HIV/AIDS, environmental degradation, gender and community solutions to development challenges. Panos has been playing a lead role in articulating the Caribbean's climate justice agenda and the "1.5 to stay alive" campaign (see Section 10.4.4). http://panoscaribbean.org/
Wider Caribbean Sea Turtle Conservation Network (WIDECAST)^	WIDECAST is an international scientific network comprised of volunteer country coordinators (mainly sea turtle experts, natural resource professionals, and community-based conservationists), an international board of scientific advisors, and partner organizations in more than 40 Caribbean nations and territories. The network has been closely affiliated with the UNEP Caribbean Environment Programme since its inception. To facilitate and strengthen local involvement, WIDECAST develops pilot projects, provides technical assistance, and supports a variety of initiatives that build capacity within and among range States. http://www.widecast.org/

Notes: *** =** grantee or beneficiary of CEPF investment; **++** = result of CEPF grant; ^ = active in European overseas countries and territories.

International Environmental NGOs

International NGOs (INGOs) play an important role in channeling resources to national and local groups: just over three-quarters of the CSOs surveyed said they had been funded by and through INGOs in the past three years. Indeed, INGOs were the principal source of funding for a quarter of them (see Section 9.4.1). The type of support provided by INGOs varies but typically goes

towards project implementation. There are, however, instances of INGOs supporting institutional capacity development. For example, the American Bird Conservancy's Latin American Reserve Stewardship Initiative, launched 2015, helps organizations managing reserves in the Latin American Bird Reserve Network to improve their financial systems and business practices.[50]

Some indigenous Caribbean organizations, however, are concerned about what they perceive to be predatory behavior and competition for donor resources from some external NGOs. Resource competition is reinforced by the donor practice of channeling investments through external organizations rather than through Caribbean intermediaries. In some instances, the international conservation agenda and the agenda of INGOs is at odds with that of indigenous NGOs and local communities in the Caribbean. The policies and practices of INGOs may impact negatively on indigenous NGOs by disrupting operations, draining capacity and distracting or re-directing focus. Partnerships are not always equitable.

The INGOs listed in Table 9.3 have longstanding programs in the Caribbean, particularly in CEPF-eligible countries. This list is not exhaustive, however, as there are other international groups that are active in CEPF-eligible countries and the wider hotspot. CI (not listed in Table 9.3) has primarily been active in the region since 2010 through CEPF, for which it is both a donor and host of the Secretariat. Other international NGOs that have programs in at least one CEPF-eligible country include the American Bird Conservancy, Global Wildlife Conservation, International Fund for Animal Welfare (IFAW), Sea Turtle Conservancy, TNC and WWF. International organizations that are active in EU overseas countries and territories and outermost regions include the Royal Botanic Gardens Kew, the Royal Society for the Protection of Birds (RSPB), and WWF-Netherlands, in addition to those organizations marked with a "^" in Table 9.3.

Table 9.3 Selected International Environmental NGOs Active in CEPF-eligible Caribbean Countries

Organization	Description
BirdLife International^	BirdLife International is a global partnership of 120 conservation NGOs that strives to conserve birds, their habitats, and global biodiversity, working with people towards sustainability in the use of natural resources. In the Caribbean, BirdLife is formally represented by and working with the Bahamas National Trust, Centro Nacional de Áreas Protegidas (Cuba), Grupo Jaragua (Dominican Republic), Sociedad Ornitológica Puertorriqueña (Puerto Rico), Royal Society for the Protection of Birds (UK Overseas Territories), Vogelbescherming Nederland (Netherlands Antilles), Ligue pour la Protection des Oiseaux (French Overseas Territories), and National Audubon Society (US Territories). BirdLife is also working with organizations in other Caribbean countries (including Barbados and the Overseas Territories). BirdLife's approach in the Caribbean, as elsewhere in the world, is based on partnership and is characterized by an emphasis on strengthening, empowering and coordinating civil society actors at grassroots, national and regional levels to enable and achieve biodiversity conservation. The BirdLife Partnership's work in the Caribbean is supported by the Americas Regional Secretariat (in Quito, Ecuador). http://www.birdlife.org

[50] See https://abcbirds.org/program/sustainability/

Organization	Description
Durrell Wildlife Conservation Trust^	Based on Jersey in the Channel Islands, the Durrell Wildlife Conservation Trust carries out species-led conservation projects around the world. With an emphasis on rare and endemic species, Durrell focuses on conservation of islands and isolated highland regions that harbor a unique and often fragile biodiversity. Durrell has worked with in-country partners in the eastern Caribbean since the 1970s and established a permanent presence on Saint Lucia in 2002. Durrell has long-standing conservation projects on Saint Lucia for endemic species, such as Saint Lucia amazon (*Amazona versicolor*) and Saint Lucian whiptail (*Cnemidophorus vanzoi*). On Antigua, Durrell was a founding a member of the *Antiguan Racer Conservation Project* and is currently studying the population genetics of the species. On Montserrat, Durrell led a biodiversity assessment of the Centre Hills region and the highly threatened mountain chicken. In the Greater Antilles, Durrell has focused on iguanas; they have been a long-term member of the Blue Iguana Recovery Programme on Grand Cayman and has studied Little Cayman rock iguana. On Hispaniola, Durrell has supported conservation of endemic mammals, such as Hispaniolan solenodon, and many amphibian species. https://www.durrell.org
Fauna and Flora International (FFI)*^	FFI is a global conservation non-profit organization based in the UK, which has been active in the Caribbean since the early 1990s, including running or supporting biodiversity projects in Anguilla, Antigua and Barbuda, The Bahamas, Barbados, the British Virgin Islands, Cuba, Dominica, Montserrat, Saba, St. Eustatius, Saint Kitts and Nevis, Saint Lucia, and St. Vincent and the Grenadines. FFI works by invitation only, and all projects are developed in response to needs identified by local NGOs, universities and government agencies. It specializes in building capacity, sustainable use of natural resources, invasive alien species control, biodiversity inventories, protected area management, and monitoring and evaluation. Noteworthy achievements since 1995 include removing harmful invasive alien fauna from 24 islands in five countries, reversing the decline of more than a dozen critically endangered species (such as Antiguan racer), and training and mentoring more than 350 conservationists across the region. FFI currently employs a small contingent of personnel in Antigua and Saint Lucia. http://www.fauna-flora.org
Island Conservation*	Island Conservation's mission is to prevent extinctions by removing invasive species from islands. Island Conservation works together with local communities, government management agencies, and conservation organizations on islands to prevent the extinction of globally threatened species, develop comprehensive and humane plans for the removal of invasive species, implement the removal of invasive species, and conduct research to understand ecosystem changes and benefits to inform future conservation action. Island Conservation is working in partnership with local management organizations in The Bahamas on a comprehensive restoration program for protected areas throughout the country. Island Conservation has an office in The Bahamas and has worked on invasive species management projects in The Bahamas, Dominican Republic, and Puerto Rico. https://www.islandconservation.org

Organization	Description
International Union for Conservation of Nature (IUCN)	IUCN's mission is to advocate, encourage and support societies towards the conservation of nature and the sustainable and equitable use of natural resources. It implemented its 2009–2012 Program of Work for the Caribbean region under its IUCN Caribbean Initiative. IUCN is preparing to implement a second phase of the Biodiversity and Protected Areas Management Programme in the region, starting in 2018.
The Nature Conservancy (TNC)*^	TNC works in 17 hotspot countries and territories and maintains offices in The Bahamas, the Dominican Republic, Grenada, Jamaica, and St. Croix, US Virgin Islands. TNC Caribbean staff work with in-country organizations in many on-the-ground activities with direct biodiversity benefits, including control of invasive species and fire, land securement, and protected area management. TNC was instrumental in organizing the Caribbean Challenge Initiative, a landmark initiative in which Caribbean governments have pledged to expand their marine protected areas systems to include at least 20 percent of their nearshore area by 2020, to develop sustainable financing for these systems (see Chapter 11), and to develop climate change adaptation projects. https://www.nature.org
World Resources Institute (WRI)	WRI is a global research organization that spans more than 50 countries, headquartered in Washington D.C. WRI develops research-based solutions that create real change on the ground, focusing on six critical issues: climate, energy, food, forests, water, and cities and transport. WRI has conducted research to inform environmental management in the Caribbean, for example through its Reefs at Risk project and piloting the Adaptation: Rapid Institutional Analysis tool in partnership with CANARI. Through its Access Initiative, it is currently supporting Caribbean NGOs to engage in the development of a regional agreement to implement Principle 10 of the Rio agreement on participation, access to information and access to justice in environmental matters.

Notes: * = grantee during initial CEPF investment phase; ^ = active in European overseas countries and territories.

9.1.2 Community-based Organizations (CBOs)

CBOs have been playing an increasingly important role in biodiversity conservation in the Caribbean, along with producer organizations and cooperatives. These groups may be organized around a business or productive activity like agriculture or fisheries and may directly or indirectly benefit conservation (for example, sustainable farming in a KBA buffer zone or ecotourism in a protected area). The scope of these organizations is generally more narrowly focused than that of their NGO counterparts and their capacity to plan, implement and evaluate programs tends to be lower. Many require accompaniment from NGOs or government agencies. They are, however, an essential component of national and local efforts to implement socio-culturally relevant and sustainable conservation and resource management initiatives. The mapping exercise carried out for the ecosystem profile identified 63 environmentally focused CBOs and 84 producer organizations in CEPF-eligible countries.

The trend towards fisheries co-management to enhance the sustainable use of resources has led to initiatives that target engagement of resource user groups and fisherfolk organizations in governance, for example through CANARI's *Strengthening Caribbean Fisherfolk to Participate in Governance* project (2013-2016).[51] CANARI is also targeting fisherfolk organizations under its

[51] See https://canari.org/coastal-marine-governance-and-livelihoods/strengthening-caribbean-fisherfolk-to-participate-in-governance/

Engaging Civil Society in CLME+ (Caribbean and North Brazil Shelf Large Marine Ecosystems) Strategic Action Programme Implementation project (2017-2019).[52] Another effort is the *Climate Change Adaptation in the Eastern Caribbean Fisheries Sector* project (2015 – 2019), which is being implemented in six CEPF-eligible countries (Antigua and Barbuda, Dominica, Grenada, Saint Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines) and Trinidad and Tobago. Sixty-two active fisherfolk organizations have been identified under the project (FAO/GEF n.d.).

CBOs have also been engaged in management of terrestrial areas. Starting in 2000, the Jamaican Forestry Department began establishing Local Forest Management Committees (LFMCs) to enable local communities to participate in the planning, management, protection, and sustainable use of local forests. Today, there are 18 LFMCs, including groups at Cockpit Country and Dolphin Head KBAs, but their capacity varies, as does their level of activity. In the Dominican Republic, three CBOs have developed in Jaragua-Bahoruco-Enriquillo Biosphere Reserve. One of these is centered on the Fondo Paradí region of the Reserve's buffer zone and promotes ecotourism and sustainable use for the area's surrounding communities. In Dominica, the Wammae Letang group had a formal agreement from the government to co-manage a freshwater mountain lake and surroundings CANARI (2012).

9.1.3 Academia

The hotspot's tertiary education and research institutions play an important role in supporting biodiversity conservation and environmental management through their research and outreach. This engagement occurs at different levels, such as:

- *Partnering with local communities and NGOs to carry out tailored research in support of project implementation*
  Climate change research and biodiversity inventories are conducted by the Centro de Investigaciones de Biología Marina of the Universidad Autónoma de Santo Domingo, the Instituto Tecnológico de Santo Domingo (INTEC) and UNPHU in the Dominican Republic. Climate change assessments are carried out by the Climate Studies Group in the Department of Physics at the University of the West Indies (UWI), Mona Campus, Jamaica.

- *Collaborating with government institutions and agencies*
  UNPHU is a registered environmental consultant with the Ministry of the Environment and Natural Resources of the Dominican Republic. It carries out applied research in support of government projects, supports the Ministry in revising environmental regulations and policies, provides training for Ministry personnel. UNPHU also has a strategic alliance with the National Council for Climate Change and the Clean Development Mechanism (*Consejo Nacional para el Cambio Climático y Mecanismo de Desarrollo Limpio*) and provides support in the areas of climate change research, conferences, consultancies and drafting bills.
  In Jamaica, UWI (Mona) and National Environment and Planning Agency (NEPA) signed a memorandum of understanding (MOU) in 2011 to formally support NEPA's needs with

[52] See https://canari.org/engaging-civil-society-in-clme-strategic-action-programme-implementation-january-2017-august-2019/

the UWI's resources and knowledge, particularly in the areas of management of natural resources, biodiversity, ecosystems, protected areas, environmental models and simulations, ecological assessments, pollution assessment and hazard mapping, and geographic information systems (GIS) and data management.

- *Implementing multi-partner national and regional programs*
  The Centre for Resource Management and Environmental Studies (CERMES) at the UWI (Cave Hill Campus, Barbados) is a partner in the following efforts: Socio-economic Monitoring for Coastal Management global initiative of the IUCN World Commission on Protected Areas; the GCRMN; and the EU Biodiversity and Protected Areas Management (BIOPAMA) program. As part of its work with BIOPAMA, CERMES hosts and operates the Caribbean Protected Areas Gateway (Caribbean Gateway).

Ten universities in the Dominican Republic formed the Red Ambiental de Universidades Dominicanas (RAUDO) in 2012, to support the sustainable development of the country by bringing together the capacities of these higher education institutions to generate and disseminate environmental knowledge within the academic community and society at large, through education, research, and extension. The network has been growing since 2012 and now includes 17 universities. Tables 9.4 and 9.5 list some of the universities and research institutions that are engaged in biodiversity conservation-related research and outreach.

Table 9.4 Universities and Research Centers in CEPF-eligible Countries

Country	Research and Academic Institutions
Antigua and Barbuda	Barbuda Research Complex
Bahamas	Bahamas Marine Mammal Research Organisation; Bimini Biological Field Station Foundation; Gerace Research Centre; the Island School
Barbados	UWI Cave Hill, Centre for Resource Management and Environmental Studies including the Barbados Sea Turtle Project; Caribbean Permaculture Research Institute of Barbados
Dominica	Archbold Tropical Research and Education Center (ATREC); Institute for Tropical Marine Ecology (ITME)
Dominican Republic	+INTEC; +Universidad Autónoma de Santo Domingo including the Comisión Ambiental, the Centro de Investigaciones de Biología Marina and the Instituto de Investigaciones Zoológicas y Botánicas; +UNPHU; +Instituto Superior de Agricultura (ISA); +Pontificia Universidad Católica Madre y Maestra (PUCMM); +Universidad Iberoamericana (UNIBE); +Universidad Tecnológica del Cibao Oriental (UTCB); Universidad Nacional Evangélica (UNEV); Universidad Católica Tecnológica de Barahona (UCATEBA); +Universidad Católica Tecnológica del Cibao (UCATECI); +Universidad Católica Santo Domingo (UCSD); +Universidad Católica Nordestana (UCNE); +Universidad Agroforestal Fernando Arturo de Meriño (UAFAM); +Universidad Abierta para Adultos (UAPA) including the Sociedad Ecológica Department; +Universidad Central del Este (UCE); +Universidad Tecnológica de Santiago (UTESA); +Universidad APEC (UNAPEC); Museo Nacional de Historia Nacional (departamento de Investigación y Conservación); Instituto Dominicano de Investigaciones Agropecuarias y Forestales (IDIAF); Fundación Dominicana de Estudios Marinos, Inc.
Grenada	St. George's University
Jamaica	UWI Mona campus including the Departments of Life Sciences, the Departments of Physics, the Department of Geography and Geology and the Discovery Bay Marine Laboratory (DBML); UWI Institute for Sustainable Development; Natural History Museum of Jamaica; Windsor Research Centre
St. Vincent and the Grenadines	Richmond Vale Academy

Note: + = member of RAUDO.

Table 9.5 Universities and Research Centers in Non CEPF-eligible Countries

Dutch OCTs	NIOZ Royal Netherlands Institute of Sea research; Institute for Marine Resources and Ecosystem Studies (IMARES); Naturalis - National Museum of Natural History of the Netherlands; Zoological Museum of the University of Amsterdam; University of Aruba, University of Curaçao*, University of St.Maarten*; CIEE (Council of International Education and Exchange) Research Station in Bonaire*; CARMABI in Curacao*; Caribbean Netherlands Science Institute (CNSI) in St. Eustatius*
French ORs and OTs	National Center for Scientific Research (CNRS); Institut de recherche pour le développement (IRD); French Research Institute for Exploitation of the Sea (IFREMER); Institut National de la Recherche Agronomique (INRA); Centre de Coopération Internationale en Recherche Agronomique pour le Développement; Museum National d'Histoire Naturelle (MNHN); Institut Pasteur: biological analyses; Université des Antilles: based in Guadeloupe and Martinique*; Observatory of the Marine Environment in Martinique (OMMM)*
UK OTs	University College of the Cayman Islands*; University College of the Caribbean (Turks and Caicos)*; Central Caribbean Marine Institute (CCMI) in Cayman Islands*; School of Field Studies in Turks and Caicos Islands*

Source: adapted from Vaslet and Renoux (2016).

9.1.4 Media

No formal assessments or content analyses of media coverage of the environment in the hotspot were identified for this report, but anecdotal evidence points to an increase in reporting on environmental and biodiversity conservation issues over the past decade. These topics continue to take a back seat to coverage of the economy and crime but there is some regular programming and coverage of the environment in the larger, more populous CEPF-eligible hotspot countries, as shown in Table 9.6.

Table 9.6 Regular Environmental Media Programs and Features in Selected Hotspot Countries

Country	Print	Radio	Magazines
Dominican Republic	El Día: weekly section dedicated to the environment Diario Libre: weekly section dedicated to the environment Digital newspaper www.Acento.com.do has an ecology section that is updated regularly	91.3 FM, Program 12 and 2: daily program that features a weekly environmental segment Fidelity FM (95.7) Factor Verde (Green Factor) has a weekly program on the environment	RD Verde (online and print editions) http://www.rdverde.com Revista Moscosa - The Botanical Garden's Scientific Journal
Haiti		Radio Vision 2000 (99.3 FM) Haiti Verte (Green Haiti): radio magazine that is broadcast twice weekly	
Jamaica	The Daily Gleaner, Earth Today: weekly section dedicated to the environment The Jamaica Observer, Earth Watch: weekly section dedicated to the environment		

9.2 Operating Environment

9.2.1 Legal and Regulatory Framework

Legal and regulatory frameworks govern the establishment and legal status of CSOs in the Caribbean Islands Hotspot, in particular, charities, NGOs and non-profit organizations. In most countries, there is typically a range of statutes that facilitate registration (Table 9.7). There is not always a coherent approach to the legal and regulatory framework governing NGOs, so that in any one country there may be multiple legal options that can be used. The British Virgin Islands is a notable exception: in 2012 the Non-Profit Act was passed to provide a single legal framework for registering nonprofits and ensure a more unified process for recognizing and monitoring such organizations (Towle 2017).

In the anglophone CEPF-eligible countries, registration has traditionally been facilitated through such statutes as Friendly Societies Acts, Cooperative Societies Acts and Companies Acts, with the first two laws being more accessible to CBOs. More recent legislative developments have seen the promulgation of Charities Acts and NGO Acts. A Civil Society Encouragement Bill has been tabled in The Bahamas, and, once it comes into force, all Bahamian organizations registered under the NGO Act will be required to re-register.

In the Dominican Republic, community organizations often register as Mutual Assistance Societies (*Sociedades de Socorro Mutuo*) under the provisions of the Non-Profit Act (*Ley No. 520 sobre Asociaciones sin fines de lucro*) but are subject to special legal regimes (Quiñones Rosado 2002). At least two water funds there are registered as Charitable Trusts (*Fideicomisos Filantrópicos*). Many producer (fisher and farmer) organizations are registered under the 1964 Cooperative Societies Act (*Ley De Asociaciones Cooperativas*).

Some of the laws governing civil society are outdated and do not reflect modern Caribbean societies and international governance standards. The legislative norm for many CARICOM Caribbean countries is either the (repealed) 1960 England and Wales Charities Act or provisions under a given country's Companies Act. Both models need to be examined to determine how effectively their provisions strengthen civil society beyond procedures for establishment, registration, and taxation (Towle *et al.* 2010). There have been some changes to the legal framework governing CSOs, particularly in CARICOM member states, but these have focused on regulating non-profit organizations and have been "less expansive" about protecting the sector. Additionally, several laws do not proactively create an enabling environment that permits non-profit organizations and NGOs to freely engage in activities for the benefit of their members and the public (Towle *et al.* 2010). Notwithstanding the British Virgin Islands' relatively new law, for example, the legislation does little to enhance or expand civil society in the territory and does not create enabling conditions for philanthropy (Towle 2017).

Legal registration, reporting and accountability requirements in some states are onerous and expensive. Some groups, particularly smaller CSOs and community organizations, have difficulty finding the financial resources to remain in compliance (for example, for paying required annual government and auditor's fees), particularly when grant funding is restricted.

The level of regulation of CSOs by government varies. In January 2017, the government of the Dominican Republic announced plans to introduce measures to regulate the operations and finances of the more than 7,000 non-governmental organizations in the country, and ensure compliance with the provisions governing the sector, contained in Law 122-05 (El Día 2017).

In September 2017, the government of Haiti revoked the operating licenses of 257 national and international NGOs operating in Haiti on the grounds that they "were disconnected from the priorities and needs of the Haitian people" (Le Nouvelliste 2017).

In Cuba, the legal framework for national nonprofit entities comprises the Cuban Constitution, the Civil Code (Código Civil), the Law of Associations (*Ley 54/85 de Asociaciones*) and the 1986 Regulation of the Law of Associations (*Reglamento de la Ley de Asociaciones*; Brundige *et al.* 2017). Under the Civil Code, Cubans can engage in non-profit activity through civil partnerships and foundations. The numbers of these two types of groups are low. The civil partnerships that exist have strong ties to the state and considered organizations that benefit or strengthen public institutions (Penalver *et al.* 2016). Foundations often "operate as quasi-state programs and associations" and are "ensembles of goods donated by their former owners to non-profit activities allowed by the law" (Suarez 2016 cited in Penalver *et al.* 2016, pp6-7). Under the Law on Associations, associations can only be established to "serve certain specified interests: science and technology, art and culture, athletics, friendship and solidarity and other [goals] that [promote the] social interest." Although non-profit, associations may carry out specific income-generating activities within their area of work (Suarez 2016 cited in Penalver *et al.* 2016). Non-profits are highly regulated; the state must approve their plans, and a state representative has the right to sit in on any meeting held by a recognized NGO. Although this right is seldom exercised, its mere existence creates apprehension among NGOs (Spalding n.d.).

9.2.2 Civic Space

The space for civil society in the Caribbean hotspot is more open than in many regions of the world, but a trend of narrowing of this space has been observed in some countries in the region (CIVICUS 2017a). This is occurring within a global context in which civil society is under pressure, and civic space is shrinking (Aho 2017, CIVICUS 2017b, Kiai 2017). Civic space is one of the enabling conditions for a thriving civil society sector, though not the only one. When citizens and their organizations can exercise their fundamental rights of information, expression, assembly, association, and participation and contribute to processes of public deliberation and decision-making, it helps ensure that government decisions reflect the priorities and needs of the population at large. Restricted civic space compromises the relevance and responsiveness of government decisions, policies and programs (Malena 2015).

The World Alliance for Citizen Participation (CIVICUS) uses a spectrum of ratings to describe the level of respect for civic space as follows: open; narrowed; obstructed; repressed; and closed. The CIVICUS Monitor (June 2016 - March 2017) of trends in civic space in countries of the hotspot, reported "narrowed" civic space in 10 of the 11 CEPF-eligible countries. Only one country in the region, Barbados, is currently rated "open" on the CIVICUS Monitor (CIVICUS 2017a).

Table 9.7 Legal and Regulatory Framework for CSOs in Selected Hotspot Countries

Country	Establishment and Legal Status									Good Governance					Financial Sustainability		Accountability and Transparency		
	Establishment by Companies Act	Establishment by Charities/ Nonprofit Act	Establishment by Friendly Societies Act	Establishment by Cooperative Societies Act	Establishment by NGO Act	Establishment by CSO Act	Provisions for Voluntary and Involuntary Termination	Provisions for Freedom of Activity by NGOs	Registration Process to Determine Non-Profit/Charitable Status	Minimum Provisions for CSO/ NGO Governance Specified in the Law	NGO Articles of Association or Incorporation Required for Registration	Provision for Non-Distribution of Profits/Benefits to NGO-Affiliated Persons?	NGO Standards of Conduct Provided?	NGOs Permitted to Engage in all Legal Fundraising Activities?	NGO Exempt from Income Taxation?	NGOs Permitted to Engage In Profit-Making Activities?	Supervisory Body to Monitor NGOs Called for in Legislation?	Provision for Periodic Reporting by the NGO to Government or a Supervisory Organ?	Financial/Operational Information Available to the Public?
Antigua and Barbuda	X		X	X					X										
Bahamas	X			X	X	X*^	X		X	X	X	X	X		X	X		X	X
Barbados	X	X		X			X		X		X				X		X	X	
British Virgin Islands		X							X		X						X	X	X
Cayman Islands	X	X*							X	X	X	X		X*			X*	X*	X*
Dominican Republic			X	X	X		X	X	X	X	X	X		X	X				
Haiti					X	X			X	X	X	X	X	X	X	X	X	X	X
Jamaica	X	X	X	X			X		X	X	X	X	X*		X	X	X	X	X
Saint Kitts and Nevis				X	X								X				X		
Saint Lucia	X			X					X		X			X	X				
St. Vincent and the Grenadines	X			X		X	X		X	X	X	X	X		X		X	X	X

Sources: adapted from Towle *et al.* (2010) and Towle (2017).
Notes: * = proposed action; ^ = civil-society-encouragement act pending; once it comes into force, all Bahamian organizations registered under the NGO act will be required to re-register.

The narrowing of civic space observed in the hotspot often relates to subtle and not so subtle attempts to stifle those who speak out on particularly sensitive issues. In 2017, for example, the Jamaican state used the Cybercrimes Act (2015) to lay charges of malicious publication against a sexual violence activist. The charges were later dropped but the action of the state was seen by some as a threat to freedom of speech in the broader context of shrinking democratic spaces in the region (AWID 2017). After the Saint Lucia National Trust spoke out in March 2017 against a marine mammal park project slated for the country's only national landmark site and broached the possibility of legal action, its $260,000 subvention from the government for the 2017/2018 financial year was cut. While the government cited budget constraints (Brown 2017), some observers believed that the move was retaliation for speaking out against a potential investment.

9.2.3 Participation in Governance and Policy Influencing

Notwithstanding concerns about narrowing civic space, CSO participation in governance processes is growing, although this is not always adequately supported by mechanisms that facilitate meaningful participation or consider the conditions under which CSOs operate. Caribbean CSOs have been engaging more in national and regional policy and decision-making processes and are increasingly recognized as important actors in those spheres. In Jamaica, for example, the four boards with the national land-use and planning decision-making authority include members drawn from civil society. The chairperson of Jamaica's Environmental Working Group of the National Partnership Council (a social partnership initiative) is a civil society representative. CSOs are part of Haiti's Protected Areas Working Group (*Groupe de Travail sur les Aires Protégées*), which was set up by the protected areas management agency, ANAP, in 2014 to contribute to the establishment of a physical, regulatory and administrative framework to make Haiti's protected areas functional.

The process to develop the Dominican Republic's National Development Strategy 2030 (*Estrategia Nacional de Desarrollo de la República Dominicana 2030*) was one of broad civic participation. In total, 1,425 organizations and 7,679 people were consulted through more than 58 meetings held throughout the country. The strategy includes actions towards sustainable management of the environment and adaptation to climate change. In 2008, the Ministry of Environment and Natural Resources (MARENA) consulted extensively with stakeholders in a participatory process to develop the country's protected area policy.

Regional and international organizations also engage with CSOs in programmatic and policy advisory capacities. The IDB, for example, hosts Civil Society Consultative Groups (ConSoCs) in 26 countries across Latin America and the Caribbean, including the CEPF-eligible countries of The Bahamas, Barbados, Dominican Republic, Haiti, and Jamaica. ConSoCs are a platform for collaboration and consultation through which the IDB seeks an exchange of information and technical expertise based on the work of each member CSO.

CARICOM has long recognized that civil society can play "a vital role" in regional development, including policy formulation and implementation (CARICOM Secretariat 2002 cited in Bowen 2015). CARICOM's Charter of Civil Society[53] sets out wide-ranging rights and responsibilities

[53] See https://caricom.org/images/publications/12504/12060-charter_of_civil_society.pdf

for citizens of member countries, including the right to take part in national and regional governance. Notwithstanding recognition of the importance of social partners, the charter has not been incorporated into the judicial structure of CARICOM or national laws, and there is no formal CARICOM structure for regional consultation with civil society groups (Bowen 2015). In its Strategic Plan for the Caribbean Community 2015-2019,[54] CARICOM articulated an intention to develop mechanisms for participatory governance arrangements, including a permanent mechanism for engaging and consulting with regional representatives of the private sector and civil society (NGOs, labor, youth, media etc.) at council meetings (CARICOM 2014).

Some observers have suggested that CSOs are "over consulted and under involved" (Bowen 2015), and have expressed skepticism about governments or the public sector genuinely considering the views of civil society or helping such groups develop (Jessop 2016). While this viewpoint is not necessarily misguided and there are countless examples from across the region of CSOs being engaged for form rather than substance, there are also examples of civil society perspectives influencing government actions and decisions and CSOs feeling that they have been genuinely heard. A human rights CSO in Jamaica, for example, worked with drafters in the Office of the Prime Minister to significantly revise legislation for a national identification system, after strong objections, including from civil society, resulted in the bill being withdrawn from Parliament. The bill that was re-tabled in Parliament in June 2017 was very different from the original submission. This is the first time that a CSO has played such an integral role in drafting legislation (C. Narcisse pers. comm. 2017).

Another issue is that, while CSOs are encouraged to be part of consultative processes, the time they spend engaging in them is often uncompensated and unprogrammed. This is a real cost to organizations that face funding gaps and demands from donors to keep management support costs to a minimum.

9.2.4 Access to Information

Right-to-information legislation is a demonstration of a country's commitment to transparency and accountability. However, not all of the countries in the hotspot have such laws in place. Antigua and Barbuda, Aruba, the Cayman Islands, Curaçao, the Dominican Republic, Jamaica, St. Vincent and the Grenadines, and Sint Maarten all have access-to-information statues; Jamaica also has supporting whistle-blower legislation. The Bahamas, Barbados, Grenada, Saint Kitts and Nevis, and Saint Lucia have drafted bills, and in January 2017, the Governor of Puerto Rico signed an executive order initiating the process of preparing freedom of information legislation (Associated Press 2017). Anguilla, the British Virgin Islands, Dominica, Montserrat, Haiti, and the Turks and Caicos Islands do not have freedom-of-information laws.

The Jamaica Environment Trust (JET), an environmental CSO with a robust advocacy program, has been successful in using Jamaica's Access to Information Act to improve environmental governance processes. It has been using the act since 2005 to request information relating to environmental and planning issues from various public authorities. Between 22 January 2014 and 31 July 2017, JET made 146 requests to public authorities under the Access to Information Act.

[54] See https://caricom.org/documents/11265-executive_plan_vol_1_-_final.pdf

9.2.5 Press Freedom

The mass media is an important public platform for national development debates on a range of issues, including poverty, youth, gender, and the environment. Press freedom and good governance are mutually supportive: good governance takes hold when journalists are free to monitor, investigate and criticize a society's policies and actions (UNESCO n.d.).

Except for Cuba, press freedom is constitutionally guaranteed in all countries of the hotspot and private ownership is a feature of all media landscapes. Notwithstanding constitutional guarantees, press freedom is not fully respected in every CEPF-eligible country. Antigua and Barbuda, the Dominican Republic and Haiti are among the weaker performers in the region on the 2017 Freedom of the Press ranking prepared by the US-based Freedom House, while the situations in Barbados and Jamaica are the most favorable (Freedom House 2017a).

The annual Freedom of the Press report on media independence around the world assesses the degree of print, broadcast, and digital media freedom in 199 countries and territories. It uses a scale from 0 (best) to 100 (worst) based on 23 questions divided into three subcategories. The total score determines the status designation of Free, Partly Free, or Not Free (Freedom House 2017b). See Table 9.8 for the ratings of the Caribbean countries included in the 2017 report.

Cuba remains one of the most closed media environments in the world. All traditional media are state-owned and have no editorial independence (CIVICUS 2017a). Despite restrictions, several news websites emerged in 2016, and the more established outlets expanded their reach (Freedom House 2017c).

Table 9.8 Freedom of the Press Ranking of Caribbean Countries

Country	Press Freedom (0 – 100)	Status
Antigua and Barbuda	34	Partly Free
Bahamas	23	Free
Barbados	19	Free
Cuba	91	Not Free
Dominica	25	Free
Dominican Republic	42	Partly Free
Grenada	26	Free
Haiti	52	Partly Free
Jamaica	19	Free
Saint Kitts and Nevis	21	Free
Saint Lucia	17	Free
St. Vincent and the Grenadines	21	Free

Source: Freedom House (2017a).

Notwithstanding the picture of relative press freedom in the hotspot painted by the Freedom House report, the Association of Caribbean Media Workers has suggested that international indices such as the Freedom of the Press report and the World Press Freedom Index (prepared by the NGO Reporters Without Frontiers) do not adequately capture the nuances of the Caribbean situation. If

different parameters were used, the situation in the region might appear less rosy. With the exception of Cuba, attacks on Caribbean journalists are more subtle than in other parts of the world where journalists are kidnapped, killed, assaulted or arrested, as there are other means of intimidating reporters to achieve the end of suppressing stories or limiting coverage on issues (Singh 2017).

9.3 Civil Society Capacity Needs

The capacity of the hotspots' CSOs varies. Although there are some stronger non-profits that have advanced existing governance and management systems to contribute to their effectiveness and sustainability, the overall picture is of a sector that could benefit from further strengthening in targeted areas to support sustainability of the CEPF investment. Many of the region's conservation groups are small and under-capacitated, and some are quite isolated, especially on the smaller islands of the Lesser Antilles and in Haiti. Although some organizations are stronger in 2017 than they were in 2010 at the start of the initial phase of CEPF investment, many continue to face limitations in their administrative, managerial, financial and technical capacity. Many have a small number of staff, and insufficient funds to hire the staff complement needed to maintain a fully functional organization.

The initial CEPF investment contributed to the organizational and technical capacity development of 58 CSOs in such areas as strategic planning, business planning, financial management, social and mass media communication, and basic marine and conservation science. However, it is rare to find a CSO that is strong across all of the key areas related to institutional capacity, including: governance; fundraising (including project development and proposal writing) and financial sustainability; management systems (finance, human, etc.); strategic, operational and project planning, monitoring, evaluation and learning; partnerships; and communication and information management.[55] As discussed in Chapter 3, there was high demand for capacity building support during the first CEPF investment in the hotspot.

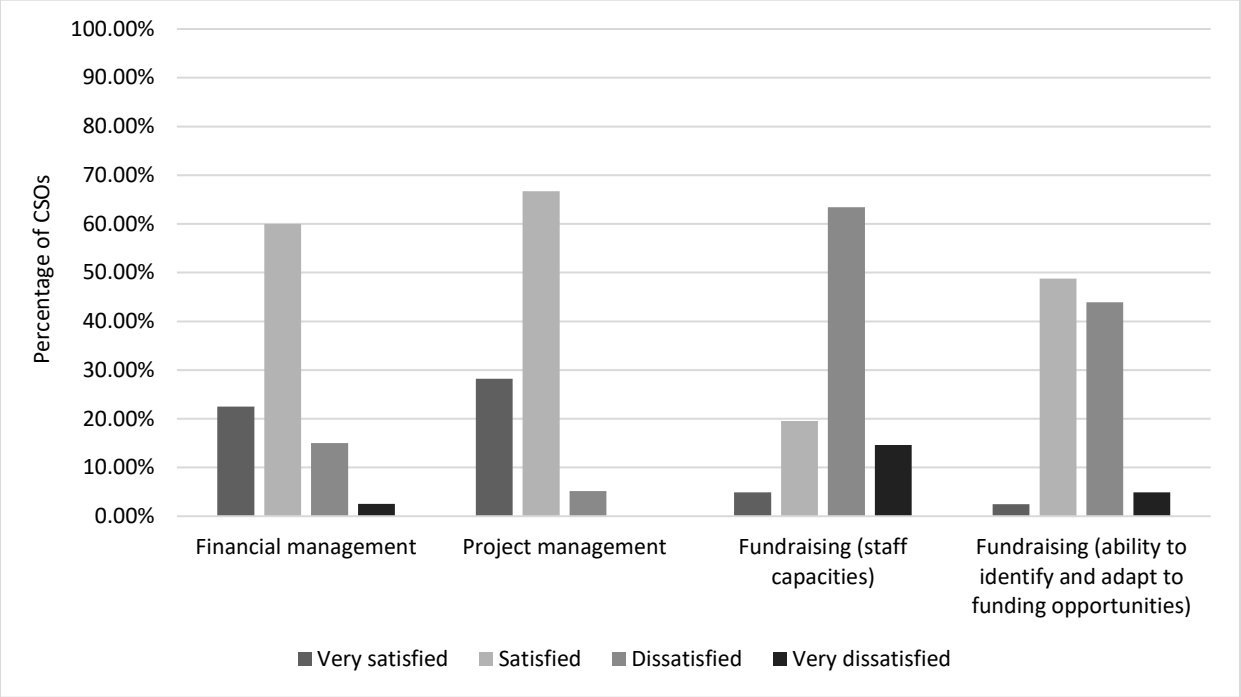
Notwithstanding capacity development support provided by CEPF during its initial phase of investment, stakeholders in the consultation process confirmed that the environmental and conservation civil society sector continues to have both technical and organizational capacity needs. Some of the technical needs identified relate to addressing weakness or constraints in the enabling environment for conservation (as discussed in Section 9.4.2). Building both organizational and technical capacity is, therefore, key, as organizational capacity positively affects, and is a prerequisite for, effective implementation of technical programs and projects (CANARI 2017b).

9.3.1 Organizational Capacity

The primary organizational capacity need identified during the consultation process was financial sustainability, although the need for support for project design and implementation, particularly among CBOs, was also highlighted.

[55] CANARI has developed an organizational assessment tool tailored for Caribbean non-profit organizations that identifies these as core competencies.

Figure 9.4 Level of Satisfaction with Organizational Capacity Reported by CSOs



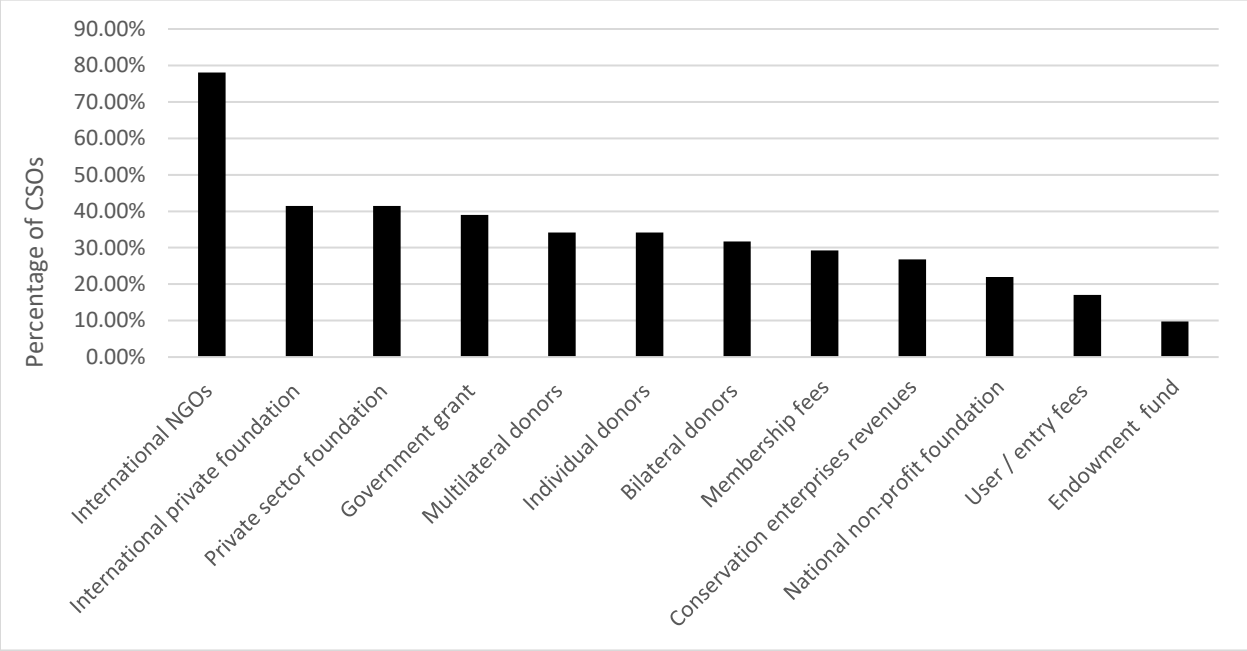
Source: Survey of CSOs conducted during preparation of ecosystem profile.

Funding and financial sustainability have been long-standing concerns for the hotspot's CSOs. External assistance facilitated the expansion of the NGO sector in the 1970s and 1980s, but geopolitical changes in the 1990s resulted in the diversion of program funding away from the Caribbean to Eastern Europe, Africa, and the Middle East. Many organizations were unprepared for this change and did not have systems and staffing in place to recover from the shock. The "graduation" of some Caribbean states to middle, and even upper, income status (for example, The Bahamas) also resulted in donor focus and dollars being shifted away from the region.

The results of the CSO survey show higher levels of satisfaction among respondents with their financial and project management capacity than with staff fundraising capacity (see Figure 9.4). Sixty-three percent (26) of the organizations surveyed were dissatisfied with their staff fundraising capacity, and 44 percent (18) were dissatisfied with their ability to identify sources of funding and adapt to funding opportunities. A minority of organizations was "very satisfied" with all areas of their organizational capacity explored in the survey.

One of the indicators of financial sustainability is having a diversified funding base. All of the surveyed CSOs reported having more than one source of funding during the three previous years, but the level of reliance on grant funding is high. The four primary sources of funding are INGOs (76 percent), international private foundations (42 percent), private sector foundations (39 percent) and government subventions (39 percent) (see Figure 9.5). Very few organizations listed user or entry fees (17 percent) and endowment funds (10 percent) among their income sources. National conservation and environmental trust funds are not yet a significant source of funding across the region but, as these mechanisms come on stream, it is expected that they will become a more important source of financing for biodiversity conservation (see Section 11.7.2).

Figure 9.5 All Sources of Funding Reported by CSOs (Past Three Years)



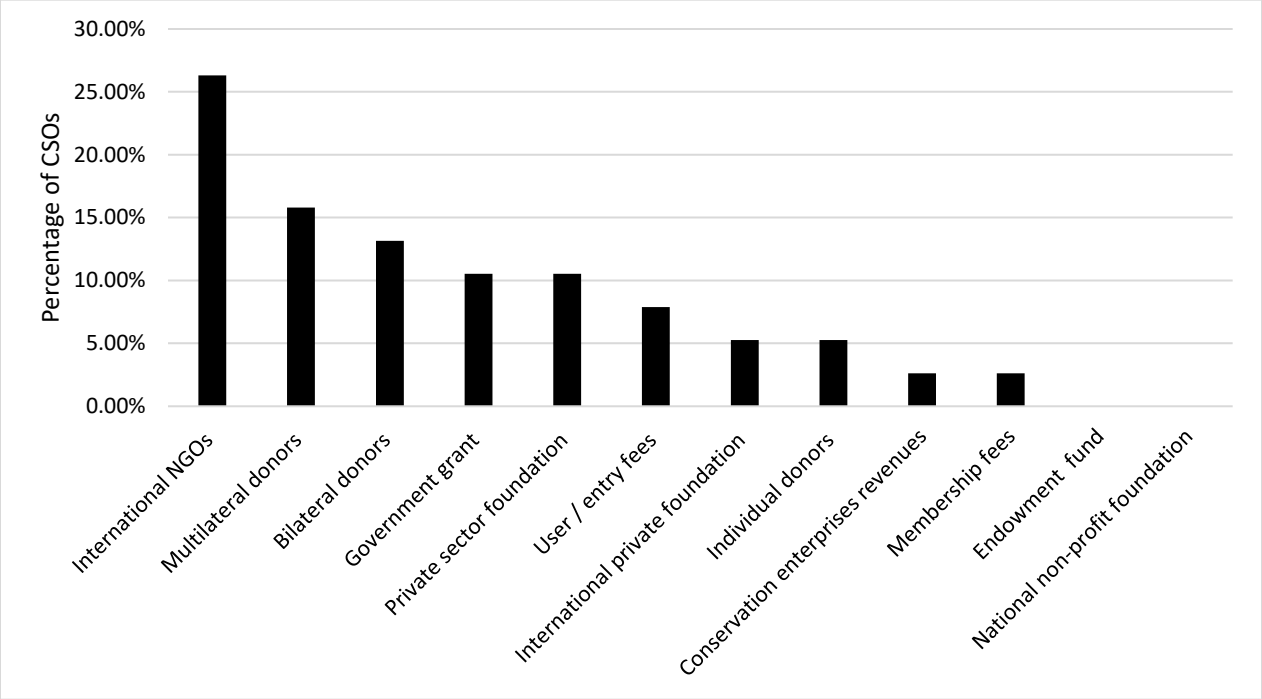
Source: Survey of CSOs conducted during preparation of ecosystem profile.

A higher proportion of CEPF grantees receive government subventions than non-grantees: 59 percent compared to 16 percent, which is likely correlated with their role in protected area management. A notably higher proportion of CEPF grantees also receive grants from international private foundations (59 percent) and generate revenue from conservation enterprises (32 percent) than non-grantees (21 and 11 percent, respectively). Eighty percent of the CSOs with more than 30 staff members generate funding from the private sector, and these larger organizations, predictably, have higher incomes and more diversified funding portfolios.

Dependence on donor funding (whether international, national, bi- or multilateral) is high among the hotspot's CSOs. When survey respondents were asked to identify their main source of funding over the past three years, a quarter of them listed INGOs. Between 11 and 16 percent of respondents listed private sector foundations, government subventions, and bi- and multi-lateral donors as their primary source of revenue. Endowment funds are not a primary source of funding for any of the respondents and conservation enterprise revenues, and membership fees are the main source of support for only 3 percent of respondents (see Figure 9.6).

The high level of dependence on donor funding presents an organizational sustainability challenge to the hotspot's CSOs. Some organizations report being unable to maintain a full staff complement outside of project funding cycles. Some smaller community groups go dormant in between grants. Stakeholders in the consultations also highlighted the challenge that CSOs face in covering their core or central administration costs in the face of donor policies that cap how much they will contribute to core costs or preclude funding for overheads.

Figure 9.6 Principal Source of Funding Reported by CSOs (Past Three Years)



Source: Survey of CSOs conducted during preparation of ecosystem profile.

9.3.2 Technical Skills

The main capacity needs identified by the participants in the ecosystem profiling consultations fell into the categories of: (i) technical skills needed to carry out conservation actions; and (ii) capacities needed to address some of the contextual barriers to conservation.

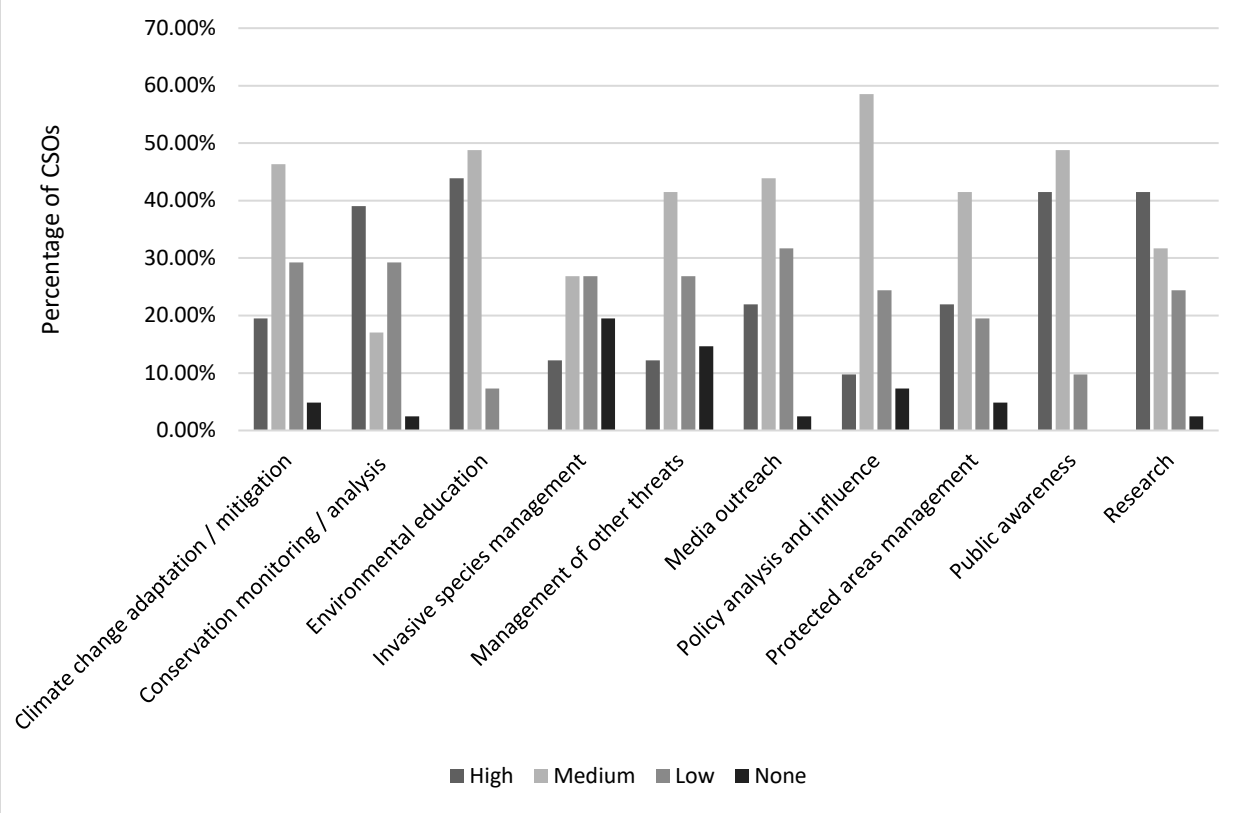
Areas in which stakeholders said that additional technical capacity was needed include conservation planning, data collection and management, invasive species management, and co-management. While capacity exists within organizations, there is scope for further development and strengthening across the sector. Consultation participants noted, however, that long-term sustainability of conservation efforts will be elusive unless critical barriers to conservation are addressed, including gaps in national policy frameworks, and weaknesses in governance processes. They also emphasized the importance of engendering knowledge and awareness among communities and other stakeholders, given the linkages between community/stakeholder benefit, buy-in, and effective management outcomes. Strong CSOs alone will not deliver conservation results.

Participants in the mid-term evaluation of the initial phase of CEPF investment also highlighted the need to address the contextual threats and challenges to biodiversity conservation and called for the strengthening of civil society capacity to take such action. Areas highlighted by stakeholders included legislative and policy analysis, and advocacy (CANARI 2013).

The technical competency assessment results of the CSO survey are consistent with reprofiling consultations. A greater proportion of survey respondents reported low to medium capacity in all technical areas explored, save conservation monitoring and research (see Figure 9.7). While

reported levels of capacity are not abjectly low across the board, the picture that emerges from the survey and the consultation discussions is that there is both scope and desire for improvement, particularly in technical competencies (along with financial sustainability).

Figure 9.7 Level of Technical Competency Reported by CSOs



Source: Survey of CSOs conducted during preparation of ecosystem profile.

9.3.3 Networking and Partnerships

Formal and informal networks and partnerships are important strategies for increasing access to technical skills, knowledge and resources. Participants in the ecosystem profile national consultations acknowledged the usefulness of networking and partnerships but, in assessing the weaknesses of the sector in some countries, it was noted that at the national level there is dispersion, poor communication, competition and a lack of harmony within the environmental NGO sector.

Environmental groups and organizations have come together at various junctures in CEPF-eligible countries in formal or informal coalitions to share information or advance a cause through strength in numbers. Over the years, some networks and alliances have gone defunct or non-operational, such as the National Environment Societies Trust in Jamaica and Reso Ekolo in Haiti. Active networks range from established institutions with ongoing programs, like the Dominican Republic's Consorcio Ambiental Dominicana (CAD), to cause-specific alliances like the Cockpit Country Stakeholder Group (CCSG) in Jamaica.

During the initial phase of CEPF investment, grantees in the Dominican Republic formed the Biodiversity Conservation Network of the Dominican Republic (*Red de Conservación de la*

Biodiversidad en la República Dominicana) to build communication capacity and improve information sharing. This and selected other formal and informal national NGO networks are described in Table 9.9. A total of 23 stakeholder networks and partnerships in The Bahamas, the Dominican Republic, Haiti, Jamaica, or St. Vincent and the Grenadines or at the regional level were created or strengthened during the initial investment phase.

Table 9.9 Selected National Environmental/Conservation NGO Networks

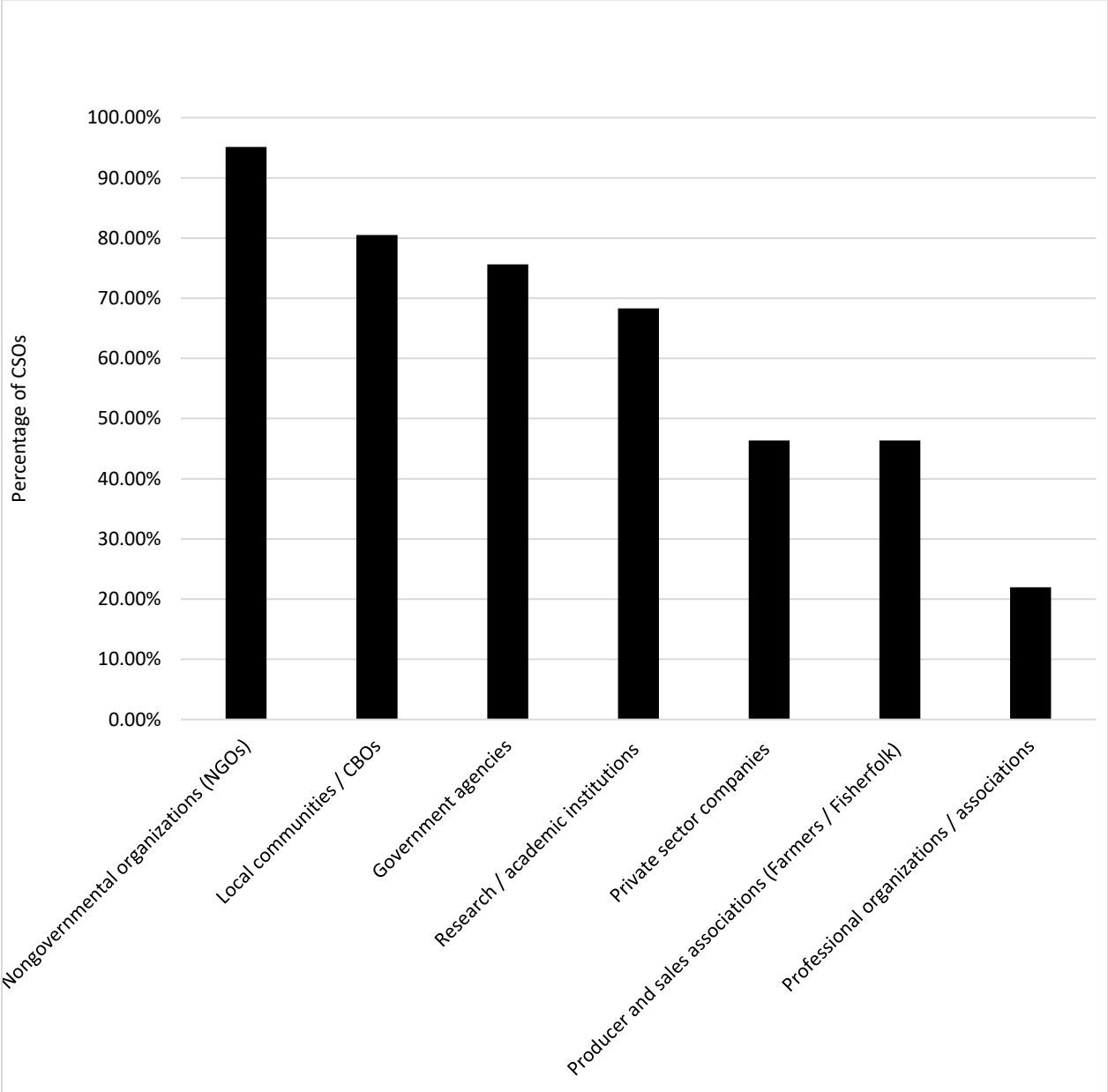
Country	Network	Description
Dominican Republic	Consorcio Ambiental Dominicano (CAD)	CAD is an alliance of two government agencies and eight local and national environmental NGOs that is registered as a non-profit organization in its own right. It is an interlocutor between key actors, including public and private institutions and communities, that aims to strengthen the resource governance and promote sustainable use, within the framework of national policy. CAD focuses on the management of the Dominican Republic's ecosystems and biological corridors. Its activities are primarily carried out in protected areas and their buffer zones but its work is not limited to these spaces. CAD is active in the border zone, particularly in the Sierra de Bahoruco, Montecristi, and Dajabón, in addition to Samaná, Nagua, San Francisco de Macorís, Jarabacoa and Constanza, Villa Altagracia, Baní, San José de Ocoa, Oviedo, Barahona, and Santiago Rodriguez. See https://www.facebook.com/CADominicano/ https://www.facebook.com/foroap/http://www.cad.org.do
	Red Arrecifal Dominicana (RAD)	A national network of organizations involved in reef conservation, formed in 2016 by Fundación Propagas, TNC, and Reef Check. RAD has signed a co-management with Reef Check and the Ministry of the Environment for La Caleta Underwater National Park (*Parque Nacional Submarino La Caleta*).
	Red de Conservación de la Biodiversidad en la República Dominicana	In 2014, 12 CEPF grantees in the Dominican Republic formed the Biodiversity Conservation Network of the Dominican Republic (*Red de Conservación de la Biodiversidad en la República Dominicana*) to strengthen members' communication capacities and increase their visibility via the internet, as well as to use social media to raise awareness among the general public of the importance of conserving biodiversity. During the CEPF program, the network provided a useful platform for showcasing the member organizations and raising awareness. Since the end of the investment in 2016, however, the group has mainly been active at the level of sharing information on biodiversity conservation and climate change via its Facebook page. https://es-la.facebook.com/biodiversidadrepublicadominicana/
	Red Nacional de Apoyo Empresarial a la Protección Ambiental (EcoRed)	EcoRed is an alliance of private sector companies that promotes environmental, social and economic sustainability and corporate social responsibility. It collaborates closely with the Ministry of Environment and Natural Resources, encouraging private sector involvement in the management and conservation of natural resources and protected areas. It also helps ensure compliance with environmental legislation environmental. More than 90 companies in the Dominican Republic have partnered with EcoRed. http://www.ecored.org.do

Jamaica	Cockpit Country Stakeholders' Group (CCSG)	The CCSG is a coalition of 93 individuals and organizations that was formed in 2006 out of an advocacy effort by the (now defunct) Jamaica Environmental Advocacy Network to prevent bauxite mining in Cockpit Country KBA. The group carries out specific actions in support of the KBA (Jamaica Environment Trust 2013). In 2009, the group defined a boundary for Cockpit Country using geological and cultural criteria, which has been used in advocacy for the formal protection of the area. The CCSG is less active now than it formerly was and primarily plays an information-sharing role. In August 2017, the CCSG lent its support to a major campaign organized by the Jamaica Environment Trust, Windsor Research Centre, and activist filmmaker Dr. Esther Figueroa that called on the Government of Jamaica to: (i) make and announce a decision about the area's boundary, (ii) declare it as a protected area, and (iii) safeguard it from mining. As a result of this campaign, the government declared a boundary in November 2017 and announced that the 74,726 hectare site will be designated a protected area and closed to mining.
	Fish Sanctuaries Network	The Fish Sanctuaries Network includes all entities involved in managing Jamaica's special fisheries conservation areas (fish sanctuaries), including the Fisheries Division. The network facilitates information sharing among managers about successes, challenges, best practices and monitoring methodologies. It allows for joint training and programming, including fundraising and proposal development. It is a forum for addressing uniformity in approaches and management infrastructure. It also allows for unified approaches in advocating for government funding and enforcement capacity.

The scope of the rapid mapping exercise undertaken did not include a review of partnerships but the online survey sought to understand from respondents what kinds of partnerships they cultivated. All the respondent CSOs had partnered with at least one organization in the past three years. Most reported partnering with NGOs, CBOs and local communities with many also working with government agencies and research institutions (Figure 9.8). Collaboration among these four groups is higher than with private organizations (i.e., private sector companies, producer and sales associations, and professional organizations).

When the survey data are disaggregated by CEPF grantees and non-grantees, trends in partnerships emerge. All CEPF grantees reported partnering with other NGOs, compared to 89 percent of non-grantees. CEPF grantees also reported partnering more with government and academic institutions than non-grantees: 82 percent with government and 86 percent with academic institutions, compared to 63 and 47 percent of non-grantees, respectively. The trend of partnering with government is consistent with the higher proportion of CEPF grantees that receive funding from government sources, compared to non-grantees (see Section 9.4.1). The higher incidence of partnerships with government and academic institutions among the CEPF grantees surveyed is correlated to their greater involvement in management activities at KBAs.

Figure 9.8 Partnerships with National Organizational Reported by CSOs

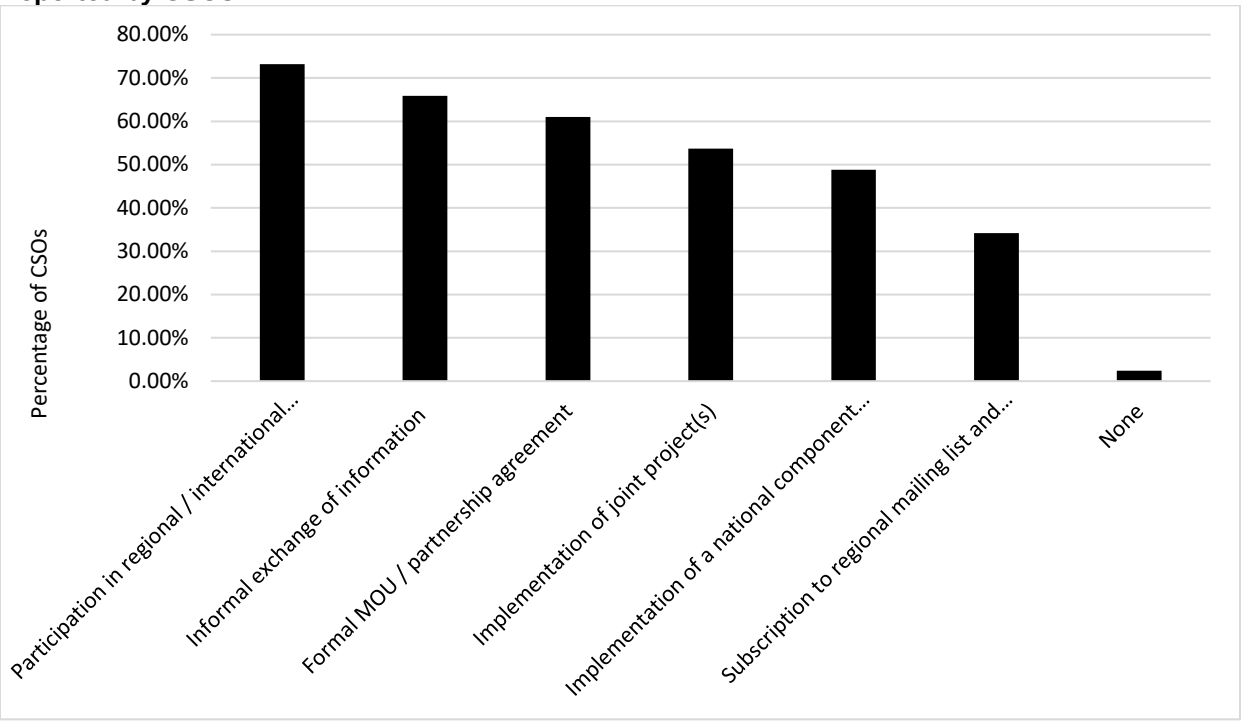


Source: Survey of CSOs conducted during preparation of ecosystem profile.

9.3.4 Transboundary Cooperation

Regional networking was also explored through the online survey of CSOs. Among the 41 respondents, 29 (71 percent) indicated that they participated in sub-regional, regional, or international meetings as a form of networking and information exchange, making this the most popular mechanism used for regional networking (Figure 9.9). The second most frequently used mechanism (66 percent or 27 groups) was informal regional or multi-country information exchanges with other organizations across the hotspot. Only 14 respondents (34 percent) indicated that they subscribed to regional listservs, such as CaMPAM, the Gulf and Caribbean Fisheries Institute (GCFI), BIOPAMA, Caribbean Biodiversity Group and CaribIAS.

Figure 9.9 Involvement in Multi-country, Regional and International Collaboration Mechanisms Reported by CSOs



Source: Survey of CSOs conducted during preparation of ecosystem profile.

Disaggregation of results between CEPF grantees from the initial investment phase and non-grantees reveals that a greater proportion of the former is involved in regional networking, including implementation of joint projects, than the latter (Table 9.10). Disaggregation of the data by number of staff and annual budget shows that organizations with more of both staff and larger budgets tend to network and collaborate more.

Table 9.10 Mechanisms for Regional Networking and Collaboration Reported by CSOs

Mechanism Used for Multi-country, Regional and International Collaboration and Information Exchange during the Past Three Years	CEPF Grantees	Non-Grantees	Total Respondents
Participation in regional / sub-regional / international conference and meetings	77 percent (17)	63 percent (12)	29
Informal exchange of information	73 percent (16)	58 percent (11)	27
Formal MOU/partnership agreement for ongoing collaboration	68 percent (15)	53 percent (10)	25
Implementation of joint project(s) initiated by you or the partner	64 percent (14)	42 percent (8)	22
Implementation of a national component of a regional or multi-country donor-funded project	64 percent (14)	32 percent (6)	20
Subscription to regional mailing list and network (CAM-PAM; GCFI; BIOPAMA; Caribbean Biodiversity Group; Carib IAS; etc.)	50 percent (11)	16 percent (3)	14
None	0	5 percent (1)	1
Other – International scientific network and conference	5 percent (1)	0	1

Source: Survey of CSOs conducted during preparation of ecosystem profile.

9.4 Strengthening Caribbean Civil Society for Conservation Action

The results of the consultations and surveys suggest that Caribbean civil society could be strengthened for conservation action by focusing on the following areas:

i. *Improved technical skills and competencies* to implement conservation actions, including conservation planning, climate change impact assessment and response formulation, data collection and management, invasive species management and co-management of sites.
ii. *Increased organizational competencies* to engage in actions that address contextual barriers to conservation, with a particular emphasis on policy analysis, advocacy, media communication and public outreach.
iii. *Strengthened organizational capacity*, particularly in the areas of fundraising and sustainable financing.
iv. *Increased peer sharing and learning*, particularly through face-to-face meetings and exchanges of grantees and the conservation community at national and regional level. The strategic use of regional meetings can afford opportunities for such interactions.

The initial phase of CEPF investment demonstrated the utility of integrating capacity building into project implementation, so that newly-acquired skills and knowledge are applied immediately and directly by the grantee. This approach has been confirmed by the experience of CEPF investments in other hotspots.

10 CLIMATE CHANGE ASSESSMENT

10.1 Caribbean Climate Trends

The Caribbean's high levels of endemism and biological diversity are linked to its climatic history. Cool, dry conditions and lower sea levels during the Pleistocene Epoch allowed for movement and dispersal of flora and fauna, which then became isolated during the subsequent rise in sea levels during the early Holocene (Woods and Sergile 2001). Although there is some country to country variation in climatic conditions, because of topography and land area, there are some general Caribbean features worth noting. For instance, the region has distinct dry and wet seasons, with the wet season lasting from May/June to November/December; the dry season extends for the rest of the year. There is greater heat stress during the wet season due to the high humidity. The Caribbean has an average air surface temperature of 27˚C, and overall, a 2 to 5˚C temperature range (CIMH n.d., Stephenson *et al*. 2014).

General climatic conditions and the hotspot's climate history notwithstanding, there is evidence of rapid climate change in the Caribbean, and further change is expected. Climate change refers to any change in climatic conditions over time, whether due to natural causes or human activity. Although climate change can occur naturally, the Intergovernmental Panel on Climate Change (IPCC) emphasizes that the current, rapid, global climatic change is linked to greenhouse gas emissions resulting from human activity. Climate variability, which refers to shorter-term variations in the mean climate state, is compounded by climate change (IPCC 2014).

The number of days during which maximum temperatures exceed 35˚C have increased in the Caribbean, as have the number of nights above 25˚C. There has been an overall warming rate of 0.19°C per decade. Warming has been greater during the middle of the year and in the northwestern Caribbean. Regional climate modeling tools, such as the Providing Regional Climates for Impact Studies (PRECIS) tool, suggest that a 1 to 4˚C increase is likely over the next hundred years (Cashman *et al.* 2010, IPCC 2014, Stephenson *et al*. 2014, Cap-Net 2015).

Average rainfall records for the Caribbean over the past 100 years have shown a consistent reduction in precipitation; this trend is predicted to continue. Some variation of this pattern is expected, however, with possible wetter conditions in the northern Caribbean, while the main Caribbean basin is expected to be drier. Overall, dry seasons are expected to be drier and more protracted, and drought frequency is expected to increase. The number of days of consecutive rainfall will increase. When rain does fall, it will be characterized by heavy downpours rather than light drizzles, thereby triggering more frequent landslides and flooding.

Sea level rise has been occurring in the Caribbean at a rate of 20 to 40 mm every decade, and is likely to increase by 5 to 10 mm per year into the future (Cashman *et al.* 2010, IPCC 2014, Stephenson *et al*. 2014, Cap-Net 2015).

While it cannot yet be scientifically determined that hurricanes and storms are increasing in frequency, it is accepted that the intensity of these events is (Cashman *et al.* 2010, IPCC 2014, Stephenson *et al*. 2014, Cap-Net 2015). As recently as September 2017, Barbuda, Dominica, and Puerto Rico were devastated by Hurricane Maria, a Category 5 storm on the Saffir–Simpson

hurricane wind scale. Barbuda was rendered uninhabitable, and all 1,400 of its residents were evacuated, marking the single largest displacement of people due to a climate event in the hotspot to date. The Caribbean Disaster Emergency Management Agency (CDEMA), in its fifth situation report following Hurricane Maria, documented 27 fatalities on Dominica, as well as the destruction of 100 percent of the island's agriculture, and significant damage to the country's electricity, water mains, and road infrastructure (CDEMA 2017a). One early estimate of the cost of the disaster put it at 200 percent of Dominica's GDP (ALBA 2017). Hurricane Irma, a Category 5 hurricane that preceded Hurricane Maria, also caused numerous deaths and extensive damage to infrastructure on the islands of Anguilla, Cuba, Sint Maarten and the British and US Virgin Islands (CDEMA 2017b). The 2017 Atlantic hurricane season was one of the most active on record, with 13 named storms, including eight hurricanes. Five of those hurricanes were considered major, with a rating of Category 3 or stronger.

Long-term climate change is not the only concern for the hotspot. The Caribbean is also affected by phenomena related to shorter-term climate variability, such as the El Niño Southern Oscillation. The warm (El Niño), cold (La Niña), and neutral phases of this phenomenon occur every three to five years because of conditions in the Pacific. El Niño is linked to drier weather in the Caribbean, including drier rainy seasons, while La Niña phases are characterized by wetter conditions and higher storm frequency (IRI 2014).

10.2 General Impacts of Climate Change and Climate Variability

Climate change is ushering the hotspot into an era marked by unfamiliarity and uncertainty. Life in the hotspot, including economic activity, is patterned around familiarity with the climate system, and climate change is taking that away (Taylor 2017). Both climate change and climate variability have profound implications for the Caribbean, including direct and indirect impacts on the region's people and biodiversity. These main manifestations of climate change in the hotspot include higher land and sea surface temperatures, changing rainfall patterns, sea level rise, decreased precipitation, more extreme events, and ocean acidification.

The effects of the phenomena listed above are exacerbated by Caribbean countries' limited land area. In coralline islands, such as The Bahamas, Bonaire, Curaçao, and the Turks and Caicos Islands, low elevation presents another dimension of vulnerability. The region's vulnerability is further increased by the concentration of human settlements and infrastructure (including government offices, roads, and airports) in the coastal zone. Sea level rise, therefore, places Caribbean people and infrastructure at risk. One projection estimates that more than 110,000 people in Caribbean countries will have to move under a 1 m sea level rise scenario (Simpson *et al*. 2014). Countries most likely to be affected include The Bahamas (5 percent of the country's population) and Antigua and Barbuda (3 percent of the population). Under a 1 m sea level rise scenario, 30 percent of all Caribbean airports will be flooded (Simpson *et al.* 2014).

Two of the hotspot's key economic sectors (tourism and agriculture) are climate sensitive. The tourism sector is vulnerable to sea level rise, as most of its infrastructure and assets are in the coastal zone. Of 673 hotel facilities surveyed in the Caribbean, Simpson *et al.* (2010) suggested that coastal erosion and flooding will affect 149 of them. Cascading effects could include fewer employment opportunities within the industry, and reduced destination attractiveness. Climate-related coral bleaching and ocean acidification are also likely to affect tourism and other marine-

based livelihoods, given impacts on coral reefs and fisheries resources (Simpson *et al.* 2010). Vital components of the agro-ecosystem, includin water, soil and pests, are being affected by climate change, threatening the agriculture sector and food security in the hotspot. Climate change is lowering yields and contributing to a higher incidence of disease among local crops (CARDI n.d.).

10.3 Impacts of Climate Change and Climate Variability on Biodiversity

The net impact of climate change on biodiversity is expected to be negative. Climate change and climate variability are already having varied and complex effects on species and ecosystems globally (Stein *et al.* 2013). Climate-related biodiversity impacts will not be uniform across the region: they will likely vary depending on local geographic conditions and *in situ* stressors, such as pollution loading. However, climate impacts on keystone species or other functionally critical species, such as pollinators, may be worrying, given likely cascading effects on food sources (Ferro *et al.* 2014, Blackman *et al.* 2015, UNEP-WCMC 2016).

Climate change and climate variability are expected to increase rates of species loss and provide opportunities for the establishment of IAS, resulting in changes in the dominant species in ecosystems. In some cases, while direct climate impacts may push biodiversity in one direction, the effects may be counteracted by human adaptation attempts. There is an interplay between the two, however, as biodiversity loss reduces the mitigative properties of associated ecosystems, such as their carbon sequestration functions (Ferro *et al*. 2014, Blackman *et al*. 2015, UNEP-WCMC 2016). Fluctuations in water regimes due to climate change are expected to be among the greatest impacts of climate change on Caribbean terrestrial biodiversity (Suárez *et al.* 2008). Some of the ways in which climate change affects the hotspots' biodiversity are explored below.

Coral bleaching. The most visible impact of climate change on biodiversity in the Caribbean has been coral bleaching (Petit and Prudent 2010). Almost all of the hotspot's coral reefs have been affected, with the most recent widespread impacts resulting from the third global coral bleaching event, which began in 2015. Reef locations in The Bahamas, Cuba, the Dominican Republic, Haiti, the Turks and Caicos, and the US Virgin Islands, as well as the Leeward and Windward islands to the south, were affected in 2015 (NOAA n.d., NOAA 2015). In early November 2016, high levels of bleaching and heat stress affected reefs in the eastern and southern Caribbean basin (NOAA n.d.). Coral bleaching is one example of how impacts of climate change on biodiversity can differ across the region. During the second global coral bleaching event in 2005, the corals around the northern Netherlands Antilles islands of St. Maarten, Saba, and St. Eustatius went through extensive bleaching (80 percent). In contrast, the corals around the southern islands of Bonaire and Curaçao experienced minimal bleaching and mortality (Wilkinson and Souter 2008).

Invasive pathways. Climate change may also facilitate invasive pathways (Masters *et al.* 2010). Warmer temperatures are implicated in the spread of fungi, such as chytridiomycosis (chytrid), which decimated mountain chicken populations in Dominica and Montserrat in 2002 and 2009 respectively (Hudson *et al.* 2016). Within two years the mountain chicken population in Dominica was reduced by 85 percent, and, within 18 months, populations on Montserrat were on the brink of extinction, marking one of the fastest observed collapses of any species ever recorded (Hudson 2016). Conservationists are using multiple conservation tools, including *ex situ* breeding and an anti-fungal drug in the field, to save one of the world's largest frog species from extinction (see Hudson 2016).

Inundation and saltwater intrusion. Sea level rise is likely to result in inundation of breeding and nesting sites, and seawater intrusion into fresh groundwater sources, causing problems for coastal plants, animals and ecosystems. Mangroves are especially vulnerable to the impacts of sea-level rise, since they often have limited space to move landward due to seawalls and other types of coastal development. Also, coastal forests, which used to be associated with Caribbean beaches, have been largely destroyed or reduced to narrow strips of vegetation, and are likely to be further diminished, due to stronger hurricanes and accelerated sea-level rise. The loss of low-lying nesting sites on offshore cays is also likely to impact seabird populations, which only have a limited number of predator-free islands remaining. More generally, the loss of beaches will impact traditional turtle nesting sites across the region.

Changes in species range, richness, and diversity. Terrestrial species ranges are likely to shift altitudinally and latitudinally due to air temperature increases. As temperatures increase, species that cannot tolerate heat, such as those found in Caribbean elfin forests, will (if they are able to) migrate to higher altitudes and latitudes in search of cooler conditions. The ranges of marine species are also likely to be affected by shifts in ocean currents, temperature, and chemistry (salinity, acidity, etc.). Marine scientists are already documenting how the movement of tropical fish towards the poles due to warming waters is leading to a decline in kelps and seagrasses due to fish overgrazing (Vergés *et al*. 2014).

Species movement may, in turn, reduce the utility of existing protected area boundaries and require research and legislative changes to adjust boundaries. Adjustments to protected area boundaries could prove to be extremely difficult, however, given existing land-use patterns and the limited land area of Caribbean countries. There is also the compounding scientific challenge of predicting fine-scale species range shifts, which makes it more difficult to specify and justify protected area boundary adjustments (Ferro *et al.* 2014).

Hurricanes can reduce both species richness and species diversity in terrestrial, marine and freshwater ecosystems. High-intensity hurricanes can forcibly move and disperse animals, especially, birds, bats and invertebrates. They can also cause the immediate and widespread deaths of plants and animals. While not yet documented in the scientific literature, regional and international news and social media have highlighted the plight of Caribbean flora and fauna due to Hurricanes Irma and Maria in 2017. One such example is the death of thousands of American flamingoes (*Phoenicopterus ruber*) in Cuba's Cayo Coco Cays (Birds Caribbean 2017).

Following Hurricane Ivan in 2004, native bird populations in the Cayman Islands were severely weakened due to loss of shelter and food sources (Petit and Prudent 2010). Studies have also documented negative impacts of hurricanes on bat populations in the hotspot. A study of the consequences of Hurricane Hugo on Montserrat's bat population concluded "that an intensification of extreme weather events will further endanger an already seriously endangered species" (Petit and Prudent 2010, p74). Species tend to return when food sources and habitat can support them. Following Hurricane Hugo in 1989, for example, Jamaican fruit bats (*Artibeus jamaicensis*) left experimental forest plots in Puerto Rico but populations returned to normal levels within two years (Gannon *et al.* 2005 cited in Lugo 2008).

Hurricanes can cause structural damage to forest ecosystems. There can be immediate tree mortality or delayed mortality months or years later due to structural damage, which creates weak

points that fungi or bacteria can attack. Hurricane-related tree damage alters microclimatic conditions, such as understorey temperatures and light levels. Increased light levels may accelerate the flowering of some species and promote the growth of fast-growing pioneer species. Alteration in microclimate conditions and food sources may lead to the migration of animal species to less affected forest areas.

After hurricanes, there is an overall increase in ecosystem heterogeneity and succession can be redirected. Studies have suggested that hurricane-affected forests demonstrate a net carbon sink effect. This occurs when woody debris becomes buried or transported to streams and oceans where decomposition rates are slower (Lugo 2008).

To a certain extent, Caribbean ecosystems are adapted to these extreme storms, and they have been a driving force for evolutionary change. Consequently, in one sense, these natural phenomena are only a threat because the loss of resilience of ecosystems due to reduction in population sizes and fragmentation from human activities increases their impacts. Many species of montane forest trees depend on the gaps and landslides created by hurricanes for regeneration, which is reflected in the growth characteristics of the trees and the ecology of climax forest in these islands (Lugo 2008). However, the loss, fragmentation and degradation of natural habitats in the Caribbean islands, especially in the last 50 years, has reduced the resilience of the region's remaining biodiversity to survive hurricanes and tropical storms, with many globally threatened species persisting only in small, often isolated populations and specialist groups, such as montane nectar-feeding and fruit-/seed-eating birds (which may lose virtually all of their food sources from the storm), particularly at risk (Wunderle *et al.* 1992, Wiley and Wunderle 1993).

Disease and pests. Increased demand for water during periods of drought and the upsurge in mosquito populations following sustained heavy rainfall contribute to the spread of mosquito-borne diseases that threaten public health, like dengue fever and zika virus (GWP-C 2014, Cap-Net 2015). This can be further compounded by the mosquitoes' physiological responses to higher temperatures, such as increased feeding rates (Kristie and Nealon 2016). Mosquito abatement programs to safeguard public health can have detrimental effects on populations of non-target species, such as bees and other pollinators. Repeated chemical spraying may lead to the accumulation of pesticide residues and amplify effects up the food chain, leading to long-term biodiversity and human health impacts (Abeyasuriya *et al.* 2017).

Cycle of biodiversity impacts and human responses. Climate change can also create a cycle of biodiversity impacts and human responses, with subsequent further biodiversity impacts. This cycle can occur with slow-onset climate change impacts, like sea level rise, as well as with sudden-onset events, like hurricanes. One example of a gradual impact loop is the human response to higher temperatures: as people try to adapt to heat stress, greater quantities of water may be taken from rivers for drinking and bathing. Over time, abstraction will reduce riverine species richness and species diversity as the resulting lower river flow reduces aquatic species habitat and food source.

Table 10.1: Key Issues, Direct and Indirect Impacts of Climate Change on Biodiversity

Issue	Ecosystems / species	Demonstrated or expected direct and indirect impacts
Higher Temperatures	Aquatic: Coastal	• Changes in turtle sex ratios: more females than males in response to higher temperatures. This has been observed in leatherback (VU) and hawksbill turtle (CR) populations (Laloë *et al.* 2016)
	Aquatic: Coral Reefs/ Marine	• Coral bleaching/death • Lower productivity/diversity of fish species that directly or indirectly depend on coral reefs • Changes in fish reproduction and migration patterns
	Aquatic: Fresh-water	• Loss of species sensitive to temperature increases • Increased river abstraction and lower riverine flows as humans abstract more water; results include loss of habitat, connectivity, and food for aquatic organisms
	Aquatic: Wetland	• Phenological changes in key species, e.g., mangroves
	Forest: Dry	• Increased incidence of invasive species
	Forest: General	• Change in species composition, e.g., more invasive species tha are better adapted to higher temperatures or at wider range of temperatures. This may, in turn, reduce wildlife food sources and habitat • Changes in plant phenology and thus the timing of wildlife food sources • Temperature-induced changes in the behavior of insect pollinators • Terrestrial ecosystem fragmentation as people move inland, reducing habitat connectivity and limiting species migration in response to climate change
	Forest: Montane	• Tree ranges may shift as trees that require lower temperatures move uphill. Local extinctions may result if the affected trees are already located at mountaintops. Areas likely to be impacted include high-elevation elfin forests, e.g., the Blue Mountains in Jamaica, Parque Nacional Armando Bermudez in the Dominican Republic, Pic Macaya and the Forêts des Pins in Haiti, and the Elfin Forest in Saba • With sea level rise, agriculture and settlement will move further inland and uphill, thus putting pressure on montane ecosystems
	Aquatic: Fresh-water	• Reduced habitat, clustering of animals and spread of diseases, e.g., chytridiomycosis in amphibian populations • Low water levels, high sedimentation, and mixing of sediment with water, release of nutrients and toxins from the bottom of ponds, dams, and rivers may directly harm aquatic fauna or lead to algal blooms, lower oxygen levels with subsequent deleterious impacts on fauna • Increased river water abstraction to compensate for lower rainfall • Dam construction for water storage reduces habitat connectivity • Flooded landscapes upstream of dams, altering ecosystems
	Aquatic: Wetland	• Species death due to dry conditions
	Cold-blooded organisms, pests, and diseases	• Reptiles, amphibians, and insects which do not regulate heat may die or shift ranges in response to low-temperature tolerance ranges • Possible increase in voltinism, i.e., broods or generations per year (more broods of insects per year in response to higher temperatures) • Higher temperatures may increase the incidence of plant and animal diseases reducing biodiversity • Humans may regulate insect pests using chemicals which affect non-pest species
Hight Intensity Rainfall	Aquatic: Coastal	• Higher surface runoff low infiltration, and more pollutants in coastal water, or vice versa depending on the amount of surface pollutants
	Aquatic: Fresh-water	• Higher surface runoff, low infiltration results in the entry of pollutant and nutrient-laden water in aquatic ecosystems • High flow may cause removal of riverine bottom-dwelling organisms and changes in habitat structure • Riverine and riparian biodiversity lost as rivers are channelized or dredged to reduce flooding
	Forest: General	• Flooding of nests of various species and death of young plants and animals • Landslides from heavy rainfall resulting in loss of tree species and death of animals

Issue	Ecosystems / species	Demonstrated or expected direct and indirect impacts
Drought	Forest: General	• Changes in flowering and fruiting phenology. Changes in the establishment and survival of seedlings may cause changes in species composition, distribution, abundance • Wildfires/forest fires
	Forest: Mangroves	• Change in extent of mangrove forests (contraction during droughts and expansion of salt flats) • Decreased productivity
Storms and Hurricanes	Aquatic: Coral Reefs/ Marine	• Direct damage to corals from wave activity • Scouring of nearshore environments and uprooting of seagrasses. High sedimentation levels compromise plant photosynthesis resulting in the slow recovery of seagrasses. Animals that depend on seagrass beds for food or habitat are negatively impacted, e.g., turtles and lobsters. • Coral polyp death and damage to coral reefs
	Aquatic: Wetland	• Uprooting of mangrove species • Saline intrusion further inland
	Forest: General	• Tree mortality • Animal death, loss of habitat and food sources and subsequent migration • Changes in forest microclimate, e.g., light and humidity levels with resultant animal species responses • Thinning forests due to heavy winds, loss of crowns and landslides. A well-documented example is the destruction of 90 percent of the forest in Grand Etang forest reserve in Grenada after Hurricane Ivan (2004)
Sea Level Rise	Aquatic: Coastal	• Loss of nesting areas due to beach erosion • Migration of human population inland, damaging inland biodiversity • Coastal protective barriers at the expense of sea turtle nesting sites
	Aquatic: Wetland	• Changes in community composition and geographic distribution and extent. Overall loss of wetland area • Inundation and wetland displacement • More severe storm surge flooding • Increased saltwater intrusion into estuaries and freshwater aquifers
Ocean Acidification	Coral reefs/ Marine	• Reduced availability to produce calcium carbonate skeletons and subsequent reduced coral reef and shellfish health • Increased stress on critically endangered staghorn (*Acropora cervicornis)* and elkhorn (*A. palmata)* corals

Sources: Lugo (2000, 2008); Seavy et al. (2009); FAO (2014); IPCC (2014); CAPNET (2015); UNEP-WCMC (2016); Vaslet and Renoux (2016); Le Quesne *et al.* (n.d.); USDA Caribbean Climate Hub (n.d.); ecosystem profile national consultations.

Ecosystems will have to contend with more than one climate impact. Mangroves, for example, are not only susceptible to the effects of sea level rise; long-term droughts may lead to the contraction of some mangrove forests and expansion of salt flats (Cintron *et al.* 1978 cited in PRCCC 2013). Decreased precipitation favors more salt tolerant species and can lead to changes in species composition in mangrove forests, due to lower mangrove productivity, growth, and seedling survival (Ellison 2000, 2004 cited in PRCCC 2013).

10.4 Overview of Climate Change Responses

Caribbean countries are among the lowest greenhouse gas emitters but paradoxically must cope with some of the most devastating impacts of climate change. This means that, although Caribbean states' climate change responses include mitigation, as articulated in their Nationally Determined Contributions (see Section 10.5.3), they must also focus heavily on adaptation to assure their very survival in the face of unprecedented change (Taylor 2017). Mitigation measures refer to human interventions to reduce the sources or enhance the sinks of greenhouse gases, while adaptation

measures refer to the process of adjustment to actual or expected climate and its effects (IPCC 2014).

Mitigation and adaptation measures can range from national level to site-specific interventions. They may include policy responses, such as legislation and strategies or the application of specific technologies or infrastructure. Increasingly, the climate science literature speaks of climate resilience in addition to adaptation and mitigation measures (GWP-C and CCCCC 2014). Resilient ecological systems need to be able to resist, absorb, accommodate and recover from the effects of a climate hazard in a timely and efficient manner, while retaining the same basic structure and ways of functioning (GWP-C and CCCCC 2014). For example, while adaptation measures for coral bleaching may include the propagation and transplanting of coral species resistant to higher temperatures, a complementary resilience measure would be to manage land-based sources of pollution to reduce the stressors on coral reefs so they are healthier and better able to withstand higher temperatures.

An assessment of climate funding for the SIDS between 2003 and 2016 found that the Caribbean received most of the approved climate finance from SIDS-targeted climate funds, with $469 million, or 43 percent (Watson *et al*. 2016). Some 43 percent of Caribbean funding went towards adaptation projects, most of which fell into the disaster prevention and preparedness category (Watson *et al*. 2016). Overall, the region has received more support for mitigation than adaptation but, at the country level, most states have been receiving more funds for adaptation. The regional profile is skewed by large mitigation inflows to Antigua and Barbuda, Cuba, the Dominican Republic, and Grenada (Atteridge *et al.* 2017). The Pilot Program for Climate Resilience (PPCR) is the biggest funder in Caribbean SIDS (funding 12 projects, totaling $136 million); approved PPCR-funded projects in Saint Lucia, Dominica, Jamaica and Grenada each exceed $21 million (Watson *et al*. 2016).

10.4.1 International Level

All CEPF-eligible countries have ratified the United Nations Framework Convention on Climate Change (UNFCCC) and associated Kyoto Protocol. The region's representation and actions in international fora are coordinated by the CARICOM Secretariat, the OECS Secretariat and the CCCCC. The CCCCC is the official repository and clearing house for regional climate change data for CARICOM member states. It provides climate-change-related policy advice and guidelines and plays a critical role in providing technical support and channeling climate funding to the region.

The region's discourse within international fora is increasingly being framed in terms of climate justice, highlighting the ethical and political dimensions of climate responses. Caribbean nations were instrumental in the efforts that resulted in Article 2.1 of the final text of the Paris Agreement at the UNFCCC Conference of Parties in 2015 (COP 21), committing to pursuing efforts to hold rising temperatures to the more ambitious limit of 1.5°C above pre-industrial levels. Temperature increases of greater than 1.5°C before the end of the century are expected to erode the viability of the Caribbean as a place for people to live and work (Taylor 2017).

In the close-out statement released by the CARICOM Secretariat after COP 22 in 2016, member states reiterated their commitment to the Paris Agreement but also focused on the Warsaw

International Mechanism for Loss and Damage associated with Climate Change Impacts as a key funding mechanism for the region's climate response (CARICOM 2016). While the closeout statement recognized the impact of climate on the water sector, storms and drought, it did not specifically address biodiversity.

10.4.2 Regional Level

There are several regional climate change initiatives, given the recognized need for regional cooperation based on similarities in climate change vulnerabilities across the region (Mercer 2012). While the early work of the CCCCC concentrated on capacity building, downscaled climate modeling, development of screening tools, climate adaptation demonstration projects, and climate change awareness, the CCCCC and other regional agencies are now building on this groundwork and have expanded the focus to include investment planning for climate change.

The Regional Framework for Achieving Development Resilient to Climate Change and subsequent Implementation Plan, which were approved by the CARICOM Heads of Government in 2009 and 2012, respectively, have guided the work of the CCCCC. Other regional agencies have also used the framework and implementation plan as the basis for their climate adaptation and climate resilience work. Strategic Element 2 of the regional framework focuses on strengthening the climate resilience of the most vulnerable sectors, including coastal and marine ecosystems, and Strategic Element 4 promotes the adoption of best practices for sustainable forest management (CCCCC 2009).

Regional/multi-country projects have tended to focus more on marine and coastal ecosystems than on terrestrial ecosystems (Mercer *at al*. 2014). The following are among the regional climate change projects that have had a biodiversity dimension since 2009:

- The GEF-funded *Special Program on Adaptation to Climate Change: Implementation of Adaptation Measures in Coastal Zones* was implemented by the CCCCC between 2007 and 2011 and supported efforts in Dominica, Saint Lucia, and St. Vincent and the Grenadines to implement pilot adaptation measures addressing the impacts of climate change on their natural resource base, with a focus on biodiversity and land degradation along coastal and near-coastal areas. Morne Trois Pitons and Morne Diablotin National Parks (both KBAs) in Dominica benefited from the preparation of management plans and the establishment of buffer zones under the project.
- Supported by the Climate Investment Fund, the regional PPCR aims to test and demonstrate ways in which climate risk and resilience may be integrated into core development planning and implementation. Approved in 2008, the first component of the project included regional capacity building, monitoring, and research. The significance of ecosystems and ecosystem management are highlighted throughout the PPCR but with coastal ecosystems taking precedence over other ecosystems, such as wetlands, forests and offshore marine ecosystems (Mercer 2012).
- Local adaptation measures for the sustainable improvement of coastal ecosystems relevant to climate change adaptation in Grenada, Jamaica, Saint Lucia, and St. Vincent and the Grenadines are being supported through the *Coastal Protection for Climate Change Adaptation in the Small Island States in the Caribbean Project* (2014 - 2018). The project is being implemented by the CCCCC, with support from KfW (the German Development

Bank). Component 1 of the project focuses on measures related to: protection and sustainable management of ecosystems relevant for adaptation; rehabilitation or substitution of ecosystems relevant for adaptation; and monitoring of coastal ecosystems.

- In 2016, the CCCCC, along with the Global Water Partnership-Caribbean, developed the *Caribbean Regional Framework for Investment in Water Security and Climate Resilient Development,* attempting to channel and direct GCF resources and other funds towards the region's water sector (GWP-C 2014, GWP-C 2016). It is noteworthy though that, while sectors like water are pushing for access to climate funding, there has not been a similar push for climate funding for biodiversity conservation.

Mitigation presents a value-added opportunity for counties in the hotspot to pursue economic growth strategies as they transition to net zero carbon emissions. Reducing dependence on fossil fuels for energy while increasing the use of renewables supports long-term economic and energy security objectives. In 2013, CARICOM approved its energy policy and the accompanying CARICOM Sustainable Energy Roadmap and Strategy, and in 2015, the Caribbean Centre for Renewable Energy and Energy Efficiency was established to promote renewable energy and energy efficiency investments, markets and industries in the Caribbean. The center operates within the decision and policy framework of CARICOM. Under the CARICOM energy policy, renewable energy sources are to contribute 20 percent to the total electricity generation mix in member states by 2017, 28 percent by 2022 and 47 percent by 2027 (CARICOM 2017).

Initiatives through the GCF (Sustainable Energy Facility for the Eastern Caribbean) and the Caribbean Development Bank (GeoSmart Initiative) are supporting geothermal development in Dominica, Grenada, Saint Kitts and Nevis, Saint Lucia, and St. Vincent and the Grenadines (Green Climate Fund 2016).

Aruba, the British Virgin Islands, Dominica, Saint Kitts and Nevis, Grenada, Saint Lucia, and the Turks and Caicos Islands have joined the Carbon War Room's "10 island challenge" to accelerate their transition from natural gas to fossil-free sources of energy, with technological help and funding from the Rocky Mountain Institute and other experts (Vidal 2014).

While renewable energy is an important part of countries' climate responses, the hydropower sector is vulnerable to a changing climate, with changes in rainfall and streamflow possibly having effects on generation capacity in Dominica, the Dominican Republic, Haiti, and St. Vincent and the Grenadines.

10.4.3 National Level

Table 10.2 provides an overview of the national climate change policy frameworks of hotspot countries. Several countries are in the process of preparing national adaptation plans but many CEPF-eligible countries already have in place approved or draft climate change policies or action plans. Some countries also have sectoral climate plans or strategies, for example for agriculture (Dominican Republic and Jamaica), water (Antigua and Barbuda), and tourism (Barbados). Additionally, Anguilla and Montserrat have ongoing initiatives to integrate climate change into fisheries governance and management, while Cuba has a plan for its water sector. Jamaica is carrying out a gender analysis of the climate change policy framework to create a comprehensive and gender-responsive national policy to guide the implementation of the sectoral plans called for

in the national policy framework. By doing this, Jamaica is working towards fulfilling gender commitments under the UNFCCC and advancing the 2014 Lima Work Programme on Gender.

Countries' energy policy frameworks are linked to their UNFCCC post-2020 commitment under the Paris Agreement to achieve net zero emissions in the second half of this century. Anguilla, Antigua and Barbuda, The Bahamas, Barbados, the Cayman Islands, Cuba, Jamaica, Grenada, Saint Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines, and Sint Maarten all have National Energy Policies and Action Plans. Dominica has a draft policy. Haiti has an energy sector development policy, and the Law on Renewable Sources of Energy Incentives and its Special Regimes in the Dominican Republic includes measures to stimulate renewable energy development in that country (National Renewable Energy Laboratory 2015). Twelve hotspot countries have submitted their first Nationally Determined Contributions to the UNFCCC (Table 10.2).

The energy policy framework in the hotspot has improved in the past decade but there is still a need for "governments to push the development, implementation, and enforcement of legislation to actively stimulate the growth of energy efficiency regionally" (McGuire 2016, p30). Policy barriers to the implementation of energy-efficiency strategies in the hotspot include voluntary rather than mandatory policy measures. There remains a need for policy reform across associated sectors to reflect energy efficiency, and a lack of incentives for the uptake of energy efficiency. Financial barriers include lack of access to start-up capital (McGuire 2016).

Increasingly, donor support for climate change action at the national level within the hotspot has been directed towards strategy implementation, as opposed to mainstreaming climate change into national development policy and plans or education and capacity building (Mercer *at al.* 2014). Hotspot countries have outlined national adaptation needs and measures within their national communications to the UNFCCC. All CEPF-eligible countries have submitted at least one national communication to the UNFCCC, as part of their reporting requirements on implementing the convention (Table 10.2). These documents reflect a strong focus on the importance of ecosystems for climate change adaptation but do not specifically discuss ecosystem-based adaptation. Hotspot countries have been using ecosystem-based approaches to slope stabilization, catchment-rehabilitation, coral reef restoration, and coastal management, with support from donors including the EU, the GEF, the governments of Canada, Germany and Japan, and UNDP. Like regional level action, however, national level action has been mainly on coastal ecosystems (Mercer *at al*. 2014).

Most national mitigation efforts have centered on implementing energy efficiency and renewable energy projects. This includes private sector efforts, such as the Collaboration of Business Sector Round Tables for Climate Action in the Dominican Republic, described in Section 7.3.8. Land-based mitigation opportunities have been used to a lesser extent in the hotspot. Among hotspot countries, only the Dominican Republic and Jamaica are partners of the United Nation's Reducing Emissions from Deforestation and Forest Degradation (REDD) program. The Dominican Republic has received support under the Warsaw Framework for REDD+ to strengthen the national forest monitoring systems and related institutions, in particular, the Greenhouse Gases Department. Although there are some carbon trading schemes in the region, the market for carbon credits is underdeveloped.

Table 10.2 National Climate Change Policy Frameworks

Country	National Climate Change Council/ Committee	National Policy/Strategy/Action Plan	Sector Policy/Strategy	UNFCCC National Communications	First Nationally Determined Contributions?
Anguilla	National Global Climate Change Alliance Committee	Anguilla Climate Change Policy (2012), with the establishment of a Climate Fund Draft Climate Change Strategy (2011)	The Anguilla National Energy Policy (2009): 2010-2020 Ongoing project of development of Climate Change Adaptation into fisheries governance and management, using an ecosystem approach to fisheries (Darwin Plus project).	-	-
Antigua and Barbuda	-	Policy framework for integrated (adaptation) planning and management in Antigua and Barbuda (2002) (Draft climate change policy)	National adaptation strategy and action plan to address climate change in water sector in Antigua and Barbuda (2014) Antigua and Barbuda National Energy Policy (2011) Development of the Sustainable Island Resource Framework Fund	Third National Communication (2016)	Yes (2016)
Aruba	-	-	-	-	Willing to be a part of the Kingdom of Netherlands Law
Bahamas, The	National Climate Change Committee (1996) - Public Education and Outreach Subcommittee of the National Climate Change Committee (2010)	National Policy for the Adaptation to Climate Change (2005)	National Energy Policy (2013)	Second National Communication (2015)	Yes (2016)
Barbados	National Climate Change Committee	Draft of a National Climate Change Policy Framework (National Climate Change Policy would have been approved in 2012 by the cabinet)	National Adaptation Strategy to Address Climate Change in the Tourism Sector in Barbados (2009) National Sustainable Energy Policy of Barbados (2009)	First National Communication (2001)	Yes (2016)
Bonaire	-	-	-	-	-

Country	National Climate Change Council/ Committee	National Policy/Strategy/Action Plan	Sector Policy/Strategy	UNFCCC National Communications	First Nationally Determined Contributions?
British Virgin Islands	National Climate Change Committee	The Virgin Islands Climate Change Adaptation Policy (2012)	Virgin Islands Climate Change Trust Fund (2015) Government of the British Virgin Islands Energy Policy (2016)	-	-
Cayman Islands	National Climate Change Committee	Cayman Islands' Climate Change Policy (2011)	National Energy Policy 2017-2037	-	-
Cuba	National Commission on Climate Change (1991) National Climate Change Group (1997)	Cuban Society Program to Face Climate Change (2007)	Action Plan for Water Resources Adaptation to Climate Change (2011) The National Environment Strategy 2007-2010 also includes climate change	Second National Communication (2015)	Yes (2016)
Curaçao	-	-	-	-	-
Dominica	National Climate Change Committee	Dominica's Climate Change Adaptation Policy and Action Plan (2002) Dominica Strategic Program for Climate Resilience 2012-2017 Dominica Low-Carbon Climate-Resilient Development Strategy 2012-2020	Draft National Energy Policy of the Commonwealth of Dominica (2014)	Second National Communication (2012)	Yes (2016)
Dominican Republic	National Council on Climate Change and Clean Development Mechanism (2008)	National Climate Change Adaptation Plan of Action (Plan de Acción Nacional de Adaptación al Cambio Climático en la Republica Dominicana) (2008) National Strategy to Strengthen Human Resources and Skills to Advance Green, Low Emissions, and Climate Resilient Development (2012)	National Strategy for Adaptation to Climate Change in the Agricultural Sector Dominican Republic (2014-2020) Law on Renewable Sources of Energy Incentives and Its Special Regimes	Second National Communication (2009)	Yes (2017)

Country	National Climate Change Council/ Committee	National Policy/Strategy/Action Plan	Sector Policy/Strategy	UNFCCC National Communications	First Nationally Determined Contributions?
Grenada	National Climate Change Committee	National Climate Change Policy and Action Plan (2007–2011) Final consultation for the development of the National Adaptation Plan was held in October 2016	Grenada National Energy Policy (2011)	First National Communication (2000)	Yes (2016)
Guadeloupe	-	-	-	-	-
Haiti	-	National Adaptation Plan being drafted (Oct 2017)	Haiti Energy Sector Development Plan 2007-2017	Second National Communication (2013)	Yes (2017)
Jamaica	-	Climate Change Policy Framework and Action Plan (2015)	Agriculture Climate Change Strategy and Plan National Energy Policy 2009-2030 National Renewable Energy Policy 2009-2030 (Draft)	Second National Communication (2011)	Yes (2017)
Martinique	-	-	-	-	-
Montserrat	-	Climate Change Policy and Action Plan (2011)	Ongoing project of development of Climate Change Adaptation into fisheries governance and management, using an ecosystem approach to fisheries (Darwin Plus project).	-	-
Puerto Rico	The Puerto Rico Climate Change Council (2011)	-	Act 82 (2010) requires the island's energy supply to be diversified with 20 percent of electricity sales from renewables by 2035	-	-
Saba	-	-	-	-	-
Saint Kitts and Nevis	-	National Climate Change Policy (awaiting Cabinet approval) National Climate Change Adaptation Strategy (under development)	National Energy Policy (2011)	Second National Communication (2016)	Yes (2016)
Saint-Barthélemy	-	-	-	-	-

Country	National Climate Change Council/ Committee	National Policy/Strategy/Action Plan	Sector Policy/Strategy	UNFCCC National Communications	First Nationally Determined Contributions?
Saint Lucia	National Climate Change Committee (re-established in 1999)	National Climate Change Policy and Adaptation Plan Strategy (2003)	National Energy Policy (2010)	Third National Communication (2017)	Yes (2016)
Saint-Martin	-	-	-	-	-
St. Vincent and the Grenadines	-	-	Sustainable Energy for St. Vincent and the Grenadines: the Government's National Energy Policy (2000)	Second National Communication (2016)	Yes (2016)
Sint Eustatius	-	-	-	-	-
Sint Maarten	-	-	-	-	-
Turks and Caicos	-	National Climate Change Adaptation Strategy and Action Plan (in preparation)	-	-	-
U.S. Virgin Islands	National Climate Change Committee (2008)	The Virgin Islands' Climate Change Policy Achieving Low-Carbon, Climate-Resilient Development (2011)	Act 7075 (2009) [Energy policy]	-	-

Sources: UNFCCC National Communication on Climate Change for the concerned territories; Medeiros *et al*. (2011).

10.4.4 Civil Society

Caribbean CSOs have been involved in formulating local, national, regional and even international responses to climate change in the hotspot. Climate advocacy and awareness-raising have been the main areas of focus for civil society to date but greater CSO involvement in policy, technical and management aspects is needed for improved climate resilience and ecosystem-based adaptation. Where local knowledge is combined with sustainable livelihoods, utilizing resources within the hotspot, biodiversity adaptation and resilience measures are likely to be more successful. CSOs can be particularly useful at implementing local responses by bringing to bear site-specific, local knowledge on climate adaptation and resilience measures.

CSOs have been playing an important role in building the climate resilience of communities in the hotspot. In some instances, this work has been linked to disaster-risk-reduction efforts in vulnerable communities. The work by the C-CAM Foundation to increase community adaptation and ecosystem resilience to climate change in the Portland Bight area of the Portland Bight Protected Area/KBA in south-central Jamaica is one such example. C-CAM sought to strengthen community resilience by acting on several fronts, including awareness raising in schools, climate workshops for land use planners, and targeted demonstration projects showcasing practical household-level adaptation measures like rainwater harvesting systems (CANARI 2017c).

In some national contexts, CSOs have come together to define their niche in the country's climate change response. In 2011, for example, CSOs in Saint Lucia developed a Civil Society Agenda to Address the Impact of Climate Change outlining their specific roles and responsibilities in the decision making and implementation of responses to the impacts of climate change.[56] More recently in 2017, civil society groups in Saint Kitts and Nevis, including farmers, fisherfolk, small businesses and other community-based organizations, Saint Kittshave been involved in the development of a National Climate Change Adaptation Strategy[57] to cope with the impacts of climate change and build resilience, particularly against the backdrop of damage due to Hurricanes Irma and Maria (2017).

Although climate change adaptation and mitigation is not always their first objective, many environmental projects take climate change into account, as it is an important threat to the conservation of biodiversity, including in the development of long-term strategies and monitoring programs. For example, in the Turks and Caicos Islands, a project funded by the BEST 2.0 Program (2017-2018) aims to build capacity and increase financing for long-term monitoring programs for coral reefs, which are adversely affected by climate change, due, in particular, to the increase of sea surface temperatures and direct hurricane impacts.

Communication and advocacy are important for climate change awareness. For example, Panos Caribbean, a regional NGO, has been leading the charge on the regional "1.5 to stay alive" campaign. When the campaign first started in 2015, it galvanized the region's poets, musicians, and other performers, who used online and traditional media to promulgate the regions' negotiating position at COP 21 on the need to limit temperature rise to less than 1.5^{o}C. This strong regional climate awareness and advocacy campaign supported the region's climate negotiators and amplified the region's key messages at UNFCCC COP21, where an important outcome was the inclusion of language in the Paris Agreement "to hold […] the increase in the global average temperature to well below 2^{o}C above pre-industrial levels

[56] See http://www.iapad.org/wp-content/uploads/2016/01/CANARISLUAgendadraft4.pdf
[57] This initiative is being implemented under the Organisation of Eastern Caribbean States (OECS) Global Climate Change Alliance Project, iLAND Resilience: Promoting a Climate for Change, funded by the EU.

and to pursue efforts to limit the temperature increase to 1.5ºC above pre-industrial levels, recognizing this would significantly reduce the risks and impacts of climate change" (CANARI 2017c). Panos continues to provide critical communication and messaging support to Caribbean climate negotiators at UNFCCC COPs and beyond.

Following the significant impacts of Hurricanes Irma and Maria in the Caribbean, some CSOs started assessing the damage to ecosystems and species. In Sint Maarten, for example, the Sint Maarten Nature Foundation assessed the terrestrial and marine impacts of the recent hurricanes to understand what had happened and develop countervailing strategies. BirdsCaribbean has conducted similar assessments on bird populations on Barbuda, while groups in Cuba have assessed the status of key taxa of the northern cays, like the local subspecies of Zapata sparrow (*Torreornis inexpectata* – EN) and regionally important populations of American flamingo and West Indian whistling-duck. IFAW carried out assessments of Dominica's two endemic parrots, imperial amazon (EN) and red-necked amazon (*Amazona arausiaca* - VU) and began rehabilitation efforts for them.

During its initial phase of investment in the Caribbean Islands Hotspot (2010-2016), CEPF supported six initiatives with an explicit climate change focus (Table 10.3). Four projects in the Dominican Republic and Jamaica focused on site-level interventions, while two projects had policy mainstreaming outcomes in Grenada, and St. Vincent and the Grenadines. Although the focus of these projects was to make KBA/corridor-level management more robust, in several instances CEPF's support facilitated the testing of new approaches in national contexts, and, in one case, it supported a Caribbean "first", with the establishment of a forest carbon offsets PES scheme.

Table 10.3 CEPF Investments with a Direct Focus on Climate Change (2010-2016)

Country	Project
Dominican Republic	Recognizing that climate change can have an impact on the catchment responsible for the capital city's water supply, PRONATURA included a climate change adaptation action plan in Parque Nacional La Humeadora's management plan. A specific tool was developed to track climate change impacts on threatened species in the Psittacidae (parrot) and Hylidae (tree frog) families. As part of an effort to strengthen the watershed's green infrastructure, the project also included an analog forestry initiative, through which 98.5 ha in the buffer zone were reforested, promoting the architectural structures and ecological functionality of the original climax forest. While vital to making the capital city's water source more resilient to climate change, the analog forest initiative was part of a larger multifaceted effort that included raising community awareness, capacity building, and outreach. The project also included a capacity-building action plan to access climate financing for ecosystem conservation. The Consorcio Ambiental Dominicano (CAD), Fundacion Loma Quita Espuela (FLQE) and Sociedad para el Desarrollo Integral del Nordeste took innovative steps to link chocolate companies from North America with landowners in the Dominican Republic to address climate change through reforestation activities and establish a sustainable financing mechanism for protected areas. By selling the Dominican Republic's first forest carbon credits under its carbon offsets strategy, the grantees were able to establish the country's first private protected area in 2012. The Plan Vivo carbon credits give landowners, especially small-scale farmers, an added incentive to restore the forest through planting a mix of cacao and native wood species. Local landowners receive payments from a revolving fund to cover the costs of planting and maintaining native species when agreeing to enter their land into the carbon offset program. The fund is then reimbursed through the sale of the carbon offsets. The scheme is expected to generate $250,000 in ten years for the conservation of El Zorzal Private Reserve, which improves connectivity of Loma Guaconejo and Loma Quita Espuela KBAs in the breeding range of the vulnerable, migratory Bicknell's thrush. In the Sierra Bahoruco, the Sociedad Ornitológica de la Hispaniola trained and developed the capacity of a team of promoters, who, in a multiplier effect, acted as animators and ambassadors within their localities, so that the wider community was empowered to take steps to improve livelihoods and strengthen resilience to climate change. The philosophy behind this project was that it is crucial to change the current mindsets of people and raise their awareness of the importance of biodiversity, sustainable agricultural practices and what to do in the face of climate change and climate variability.

Country	Project
Grenada	The Grenada Dove Conservation Programme partnered with the Grenada Forestry and National Parks Department and the University of Chester, UK to assess vulnerabilities of Grenada's dry forest ecosystem and its biodiversity and ecosystem services to the impacts of climate change with a view to identifying gaps in conserving the country's dry tropical forests and prioritizing biodiversity conservation actions to address vulnerabilities identified and mainstream those actions into national policy and strategy on climate change. The resulting report was disseminated to key policymakers on Grenada's national climate change policy, strategy, and programs.
Jamaica	The management plans developed for Hellshire Hills and Portland Bight KBAs by the C-CAM Foundation used climate risk assessment approaches to develop action plans to strengthen the resilience of the KBAs and their ecosystem services, which are locally and nationally important. The plans identified monitoring, mapping, and modeling actions to build the climate resilience of the two areas, along with supporting policy measures. The climate change action plans set the stage for several activities that are part of the implementation of the management plans, including a community monitoring program in the Hellshire Hills to track phenomena associated with climate change, such as coastal erosion.
St. Vincent and the Grenadines	The Integrated Watershed Management Plan developed by the National Parks, Rivers and Beaches Authority for Cumberland Forest Reserve KBA in the Central Mountain Range Conservation Corridor factored in climate change/climate variability threats (including natural disasters), especially the impact on key catchment assets, including biodiversity.

10.4.5 Managing the Impacts of Climate Change within Caribbean Protected Area Networks

Climate adaptation and resilience initiatives are ongoing in the water and agriculture sectors. While less attention was traditionally paid to climate impacts on biodiversity, including the management of climate impacts on protected area systems, it appears that this might now be changing. Resources for climate adaptation and resilience are not equally distributed, however, with more resources being dedicated to coastal and marine ecosystems than terrestrial ones. This trend is consistent with that for biodiversity funding. Regional climate funds, programs and projects that include biodiversity components are discussed in Chapter 11.

Recognizing the inadequacy of the current regional protected area systems to cope with climate change, initiatives such as the Caribbean Challenge Initiative and the ECMMAN project have attempted to improve protected area climate resilience by:

- Expanding the area of existing protected nearshore and coastal areas.
- Creating national and regional biodiversity trust funds improve overall management of these areas.
- Improving stakeholder engagement in protected area management.
- Improving data and information systems as well as the network's financial and institutional sustainability.

Nevertheless, more work needs to be done, and there is scope for greater use of facilities like the GCF for biodiversity conservation. Additionally, funding for climate change and biodiversity conservation interaction is needed to help fill information and knowledge gaps, so interventions can be better guided and directed. Few studies provide detailed information about what should be done when planning for conservation against the backdrop of rapid climate change. This is hardly surprising, "considering ecologists and conservation biologists have only just started to grapple with the threat climate change poses to biodiversity and it normally takes conservation scientists time to move from understanding a threat to planning to overcome it" (Watson *et al*. 2011, p381). It is important to go beyond merely using the label of 'adaptation' for known conservation approaches that are expected or thought to have a 'climate adaptation' impact, to empirically understanding which actions are indeed the most appropriate (Watson *et al.* 2011).

10.5 Strengthening Adaptation and Mitigation in the Caribbean

Some of the ways in which adaptation and mitigation efforts in the Caribbean could be strengthened are as follows:

i. *Supporting Caribbean-specific fine-scale research on biodiversity-climate change interactions to inform conservation and protected area management.* Climate change adaptation attempts may be stymied by the fact that climate impacts on the region's biodiversity are not well understood. Notwithstanding the observed and anticipated climate change impacts listed in Table 10.1, participants in the ecosystem profiling consultations in June and July 2017 noted that there is an incomplete understanding of the full scope of how changes in climate already underway are affecting species and ecosystems in hotspot countries. The lack of locality- and species-specific information about climate change impacts hampers efforts to develop and test the effectiveness of climate change responses in national contexts. The type of information needed includes the three-way nexus among social-cultural patterns, biodiversity, and climate change.

ii. *Increased use of ecosystem-based adaptation and greater emphasis on the integration of livelihoods and protected areas management.* There is scope for strengthening and expanding the use of ecosystem approaches to climate change adaptation. Ecosystem-based adaptation, with its focus on sustainable management, conservation, and restoration of ecosystems, as part of an overall adaptation strategy that considers the multiple social, economic and cultural co-benefits for local communities, is particularly well suited for the Caribbean, where communities have a high level of dependence on natural resources. Ecosystem-based adaptation has the potential to provide multiple benefits in addition to adaptation, such as carbon storage, pollination services and livelihood diversification (Seddon *et al.* 2016). One area in which ecosystem-based adaptation approaches could be strengthened in the hotspot is through better capturing and integrating local knowledge in projects and planning processes at the national and regional scales (Mercer *et al.* 2014). This is important for the completeness of the information base that informs an intervention, as well as for the long-term sustainability that comes from local buy-in.

iii. *Integrating climate change into existing protected area management approaches*. Conservation strategies and protected area management need more robust approaches to climate change, including "retrofitting" management plans to include climate change targets. Protected areas need to be understood and valued as essential elements of countries' adaptation and mitigation strategies in their role as carbon sinks as well as that of maintaining natural ecosystems that contribute to physical protection against major disasters, which are predicted to increase in number and severity with climate change. This suggests revisiting both protected area and climate change strategies and funding.

iv. *Better engagement of civil society in adaptation, conservation and resiliency measures for biodiversity protection.* CSOs have played and continue to play an important role in on-the-ground implementation and policy formulation and monitoring but there is a need for the early engagement of CSOs in policy decision making and project planning, as all too often civil society is brought in at end-stage consultation processes or implementation. CSOs need to have skills in policy analysis as well as technical skills to support climate responses in management, to play their roles effectively in policy formulation and on-the-ground implementation.

11 ASSESSMENT OF CURRENT CONSERVATION INVESTMENT

A review of ongoing and recently-concluded projects in the Caribbean suggests that conservation funding is still largely derived from multilateral and bilateral sources and is often disbursed through regional projects, as was the case in 2010 when the CEPF first began operating in the Caribbean Islands Biodiversity Hotspot. These projects are mostly implemented by international or regional agencies and have country components determined by governments, with little direct funding to civil society. There has been, however, an important change in the regional and national funding landscape with the establishment of the CBF and recent establishment of national trust funds, although most of these are not yet fully operational.

This chapter showcases the current Caribbean funding landscape, focusing on initiatives that directly or indirectly contribute to biodiversity conservation in the hotspot. It sets out major biodiversity conservation efforts that are being undertaken in the hotspot. The information presented in the chapter is based on an exercise to map active investments in the hotspot in 2017, showcasing major donors, programs and projects in the region. Information about GEF and World Bank pipeline projects set to start in 2018 or 2019 was also included in the analysis. While the results of the mapping exercise may not be exhaustive, they provide a snapshot of the present regional funding scenario for biodiversity conservation.

11.1 Multilateral Investments

11.1.1 Global Environment Facility

As was the case in 2010, the GEF remains an important source of funding for biodiversity conservation in the hotspot, including for CSOs through the Small Grants Program (SGP) managed by UNDP, as well as multilateral projects that include dedicated components for civil society. These include the GEF-funded *Integrating Water, Land and Ecosystems Management in Caribbean Small Island Developing States* (IWEco) project, co-implemented by UNDP and UN Environment, which uses the GEF SGP to provide small grants to CSOs. Other GEF-funded projects involve CSOs through consultations or as beneficiaries of awareness raising/capacity building components.

The exercise to map biodiversity conservation investments in the hotspot identified 35 projects funded by the GEF under the biodiversity focal area (or as part of multi-focal area projects that included biodiversity), with a total value of $161.5 million, including SGP disbursements of $8.4 million discussed below (Appendix 7). The GEF works through 18 implementing agencies, including the InterAmerican Development Bank, UN Environment, UNDP and the World Bank Group, all of which are currently supporting biodiversity-conservation-related initiatives in the hotspot. Of the 34 grants identified (excluding the GEF SGP), three focused on marine and coastal ecosystems, 16 on terrestrial ecosystems, and 16 on both marine/coastal and terrestrial ecosystems.

In addition to these grants, a further 38 grants, totaling $121.9 million, were active under other focal areas (climate change, land degradation, international waters, and persistent organic pollutants). These include the *Strategic Action Programme for the Sustainable Management of Shared Living Marine Resources in the Caribbean and North Brazil Shelf Large Marine Ecosystems* (CMLE+) project implemented by UNDP, which has a component focused on building mechanisms and capacity for funding CSOs.

The GEF has continued to play a role in expanding protected area coverage and improving the management of protected area systems and sites through national projects, such as those currently underway in Dominica, Saint Kitts and Nevis, and Saint Lucia. GEF-funded initiatives in The Bahamas, the Dominican Republic and Jamaica are addressing the broader context in which biodiversity conservation takes place, including integrating biodiversity considerations and ecosystem services into land-use planning and sectoral development (coastal tourism) and mainstreaming biodiversity into planning policies and practices in productive landscapes.

Regional initiatives include the IWEco project, with its biodiversity mainstreaming and sustainable forest management objectives, which complement climate-change-resilient approaches in sustainable land management, integrated water resources management, and maintenance of ecosystem services. A grant from the GEF is supporting the *Caribbean Regional Oceanscape Project*, implemented by the World Bank, which supports Dominica, Grenada, Saint Kitts and Nevis, Saint Lucia, and Saint Vincent and the Grenadines to transition towards a 'blue economy' model, where sustainable ocean-based industries help deliver jobs, reduce poverty and promote shared prosperity across the region (World Bank 2017e).

Between 2010 and 2017, the GEF SGP funded 311 projects in the hotspot with a biodiversity focus, for a total value of $8.4 million. Twenty-three projects in the region that began in 2017 were supported to the tune of $861,801. Most grants under the GEF SGP are for $50,000. While this size of grant fills a niche in the funding landscape, it is too small for higher capacity CSOs that want to do more ambitious, longer-term work.

The seventh replenishment of the GEF (GEF-7) will continue to benefit the Caribbean region's biodiversity programs. Under the GEF-7 policy agenda, new protected areas established with GEF support must be globally significant, as defined by the KBA standard (GEF 2017). The site outcomes defined in Section 5.2, therefore, have immediate relevance beyond CEPF's planned reinvestment in the hotspot.

11.1.2 InterAmerican Development Bank

The InterAmerican Development Bank (IDB) aims to mainstream its support for biodiversity projects through regular loan and technical cooperation operations. A total of 13 active grant-funded projects with components contributing to improved management of terrestrial and marine protected areas were identified during the mapping exercise (Appendix 7). These projects totaled approximately $30.4 million. Twelve were financed by the IDB and one (valued at $0.5 million) was funded through the Japan Special Fund Poverty Reduction Program administered by the IDB. In its role as a GEF Implementing Agency, the IDB is responsible for a watershed management project in Jamaica. The IDB has invested just under $8.6 million in natural resource management in southern Haiti through three projects, including an initiative by the Ministry of Environment to develop and implement a management plan for Macaya National Park to sustainably manage, use and monitor natural resources of the park and its buffer zone. As with other multilateral sources of funding, it is difficult to isolate the total investment flows to civil society.

Of the 13 grants identified, four focused on marine and coastal ecosystems and five on terrestrial ecosystems, while the remaining four supported work across both marine/coastal and terrestrial ecosystems. Among the projects led by the IDB or national government agencies, there are several where CSOs either support implementation or are project beneficiaries. However, only three of the 13 active projects identified are led by CSOs. Two of these projects have a combined value of $854,500. While

the third CSO-implemented project has a value of $1.7 million, it is implemented in four Latin American and Caribbean counties, only one of which is a hotspot country.

11.1.3 The World Bank

The focus of the World Bank's support to Caribbean governments has primarily been strengthening macroeconomic management and supporting growth-enhancing reforms, although it has also provided some support in areas related to environmental and ecosystem management, primarily (although not exclusively) through its role as a GEF implementing agency. World Bank support for environmental and ecosystem management has been integrated into both loans and grants. Biodiversity conservation is typically supported as a component or element of larger projects, rather than as stand-alone projects. Examples of loan support incorporating biodiversity conservation include initiatives to build climate resilience in Grenada, Saint Lucia, and St. Vincent and the Grenadines through measures that include non-structural flood and landslide risk reduction interventions (World Bank 2014, 2017f). A newly approved development policy credit will support Grenada's transition to a Blue Economy. Similarly, disaster vulnerability loan support to Jamaica included financing ecosystem-based adaptation assessments to reduce coastal vulnerability (World Bank 2016). Five ongoing and pipeline grants with a biodiversity component were identified in the mapping exercise, including a pending initiative in the Dominican Republic to enhance its REDD readiness. The combined total value of these four projects is $58.7 million. However, it is difficult to disaggregate flows that support biodiversity conservation directly (Appendix 7).

In its role as a GEF implementing agency, the World Bank is responsible for the *Caribbean Regional Oceanscape Project* mentioned above. Moreover, between 2011 and 2016, it implemented the GEF-funded *Sustainable Financing and Management of Eastern Caribbean Marine Ecosystem Project*, which supported the creation of the CBF and national-level protected areas trust funds in each of the five OECS countries, as well as marine protected areas in Antigua and Barbuda and Grenada. In 2018, the World Bank will begin implementing the *Resilient Productive Landscapes Project* in Haiti, which includes actions to improve agricultural production and practices in support of improved watershed and landscape management. The project is supported by the World Bank Group ($15 million) and the GEF ($6.21 million).

Of the seven grants identified in the mapping exercise, one focused on marine and coastal ecosystems, and three on terrestrial ecosystems. CSOs are beneficiaries of some of these World Bank projects.

11.2 Bilateral Investments

11.2.1 The European Union

The mapping exercise identified eight active programs and projects with a biodiversity-conservation-related focus supported by the EU, with a combined value of $101.9 million (Appendix 7). However, it is difficult to disaggregate the specific sums earmarked for the Caribbean, from publicly available data, as some EU funding for the environment and biodiversity conservation in the region is allocated as part of global programs. It is also difficult to identify total flows to civil society from the various funding sources. Most EU funding for biodiversity is directed to public sector institutions, with the intention that CSOs, academic institutions and the private sector also participate in, contribute to and benefit from the projects. For example, the EU-funded Programme for Capacity-building Related to Multilateral Environmental Agreements in African, Caribbean and Pacific Countries, which is coordinated globally

by UN Environment, supported the CARICOM Secretariat to produce a report on the state of biodiversity in the Caribbean Community (CARICOM 2018). The EU does, however, have specific programs targeting support to civil society under global programs as well as funds managed through regional and national offices. It is widely perceived that the EU is one of the most important sources of funding for civil society generally in the Caribbean, with support targeting enhancing civil society capacity, participatory governance and rights-based initiatives, including on environmental rights.

The EU supports developing countries and overseas countries and territories and outermost regions in the Caribbean. Funding programs and mechanisms, such as Europe Aid (International Cooperation and Development), the European Territorial Cooperation (ETC) Interreg V Caribbean cooperation program (2014-2020) and European Development Fund (EDF) Caribbean Regional Indicative Programme (CRIP), promote cooperation through multi-country and regional projects, some of which have a biodiversity conservation component or focus. For instance, the Interreg V Caribbean cooperation program supports cross-border cooperation between Guadeloupe, Martinique and the OECS countries, as well as broader transnational cooperation between Guadeloupe, French Guiana, Martinique and Saint Martin and all countries in the Caribbean basin. The CARI'MAM initiative, which networks marine protected areas dedicated to the conservation of marine mammals in the Greater Caribbean, in partnership with Bonaire, Cuba, the Dominican Republic and the Turks and Caicos Islands, has been supported under Interreg V.

Another important multi-country initiative supported by the EU is the Caribbean Biological Corridor (CBC), which is described in detail in Section 8.2. Because three of the seven conservation corridors and 16 of the 33 KBAs prioritized for CEPF support (Section 13.1) fall within the CBC, there will be significant opportunities for collaboration between this initiative and CEPF, including with regard to solicitation and review of grant proposals, to ensure good complementarity. Moreover, the CBC initiative has synthesized a considerable amount of information on the biodiversity of the region, which CEPF and its grantees can take advantage of when designing interventions in Cuba, the Dominican Republic and Haiti.

The EU BEST initiative (voluntary scheme for Biodiversity and Ecosystem Services in Territories of European overseas) supports the conservation of biodiversity and sustainable use of ecosystem services, including ecosystem-based approaches to climate change adaptation and mitigation in the EU overseas countries and territories and outermost regions. Between 2011 and 2018, the BEST Initiative supported 90 projects in nine outermost regions and 25 OCTs, including 27 projects in the Caribbean Islands, totaling €3,800,000 ($4,055,495). These comprised 12 projects on species conservation, five on protected areas, six on ecosystem restoration and four on sustainable development/ecosystem services. Programing of medium and small grants under the second phase of the initiative (BEST 2.0) was guided by a regional ecosystem profile and investment strategy (Vaslet and Renoux 2016), which followed the CEPF model. In 2019, the BEST Initiative was continued through the LIFE4BEST program, funded by the EU LIFE Programme, the French Biodiversity Agency and AFD. LIFE4BEST is a grant scheme designed to provide effective support for actions on the ground at the local, as well the regional level, through swift small grants of up to €50,000.

The EU is also supporting regional biodiversity initiatives through global programs and projects like the Global Climate Change Alliance Plus (GCCA+), which is implementing the *Climate Change Adaptation and Sustainable Land Management in the Caribbean* project in the OECS sub-region, and the EuropeAid Marine biodiversity and forest governance program (FLEGT/REDD+), which is supporting a regional project entitled *Powering Innovations in Civil Society and Enterprises for Sustainability in the Caribbean* (PISCES), which aims to strengthen the role of CSOs and small and micro-enterprises in marine protected areas. The PISCES project is implemented by a partnership of seven Caribbean CSOs.

Of the nine grants identified, two focused on marine and coastal ecosystems, one on terrestrial ecosystems while the remaining five supported work across both marine/coastal and terrestrial ecosystems. CSOs are lead implementing partners on three of the projects identified: PISCES; *#GE4U: Transformation Towards an Inclusive Green Economy in the Caribbean*; and BIOPAMA. In addition, they are an implementing collaborator on a fourth: BEST 2.0.

11.2.2 Other Bilateral Donors

Germany is responsible for significant bilateral inflows to the hotspot through the Federal Ministry for Economic Cooperation and Development (BMZ), the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), GIZ (a government-owned development agency) and KfW (the German Development Bank). In countries with German diplomatic representation (Cuba, the Dominican Republic, Haiti and Jamaica), the embassies are also a source of small grant funding. The German funding identified totals $35.6 million but this figure is approximate, as it includes totals for projects being implemented in the wider Latin America and Caribbean region, and funding amounts were not found for all German-government-supported projects identified. Of the nine German-government-funded projects identified, six targeted marine and coastal resources and three terrestrial resources (Appendix 7).

The US government, through USAID, is currently funding three large-scale projects (two regional, one national) with a conservation focus, as well as a sub-regional initiative in the eastern Caribbean to build civil society capacity: the *Local Capacity for Local Solutions* project. Also, through the US Fish and Wildlife Service's Caribbean program, the US government is supporting efforts that reduce threats to key species and the region and strengthen the capacities of local individuals and institutions to undertake sustained biodiversity conservation actions in the long-term. This program, which starts in 2018, will include a small grant component that will provide support in the areas of species conservation, wildlife law enforcement, management of marine protected areas, and community engagement in conservation of marine, coastal and terrestrial ecosystems. Between 15 and 20 small grants will be funded over a one-year period, up to a total level of $1.5 million. Another component of this program is training for local conservation leaders in partnership with St. George's University in Grenada. The total value of the five mapped US government projects is $85.1 million (Appendix 7).

The government of Japan is supporting the $13 million UNDP-implemented Japan-Caribbean Climate Change Partnership in five hotspot countries (Dominica, Grenada, Jamaica, Saint Lucia, and St. Vincent and the Grenadines), plus the continental Caribbean states and Suriname. Also, the Japanese Trust Funds and resources from the Japan Special Fund Poverty Reduction Program are supporting an IDB-implemented community-based conch management initiative in The Bahamas with a budget of $500,000.

L'Agence Française de Développement is active in Haiti and the Dominican Republic. Its program in the Dominican Republic includes support to the Plan Sierra reforestation and community development initiative in the Cordillera Central. Between 2001 and 2016, AfD invested €13.3 million ($14.4 million) in Plan Sierra.

Other countries, including Canada and the UK, have small pots of funding allocated to their embassies that are used to support CSOs in these countries. In some cases, these funds may be used for biodiversity conservation.

11.3 Pooled Investments

While most funding for biodiversity conservation in the hotspot comes from multilateral and bilateral sources, there are a few examples of pooled investments, with funding from multiple donors. Apart from CEPF, none of these are specifically dedicated to funding CSOs, although CSOs are included as beneficiaries.

CEPF. CEPF awards grants to civil society for biodiversity conservation activities. Investment by CEPF in the hotspot between 2010 and 2016 totaled $6.87 million.

Green Climate Fund. Although much of the GCF's support to hotspot countries has been for energy efficiency, renewable energy and water sector resilience, there has also been a project with ecosystem-based adaptation components in Antigua, Dominica and Grenada (total project value $20 million). As discussed in Chapter 10, however, unlike the water sector, the biodiversity conservation sector in the hotspot has not yet made a concerted push to access climate funding from sources like the GCF, although there is tremendous potential for ecosystem-based adaptation and building climate resilience.

Sandy Shorelines Project. The Korea International Cooperation Agency, the government of Turkey and the government of the Netherlands joined forces to support the $4 million Sandy Shorelines project, which aims at improving the management of coastal erosion and sea level rise in the Association of Caribbean States member states.

Caribbean Biodiversity Fund (CBF). Support for the Caribbean Challenge from the CBF comes from the Moore Foundation, KfW, TNC, the government of Germany, the GEF, the World Bank, UNDP, UN Environment and USAID. The CBF's endowment fund was capitalized with approximately $43 million (Appendix 7).

11.4 Nationally Derived Funding

Expenditures on biodiversity conservation by the more than 30 governmental entities in the Caribbean are not readily available[58]. This problem is compounded by divided and sometimes overlapping jurisdictions for natural resources management in these countries and territories. There are, however, some indicative figures for national recurring expenditure, although this is highly variable among countries.

In a 2008 self-assessment, Cuba reported $14.6 million in funding for protected areas. This sum covered 68 percent of the basic needs budget of $21.6 million, defined as the funding required to operate key conservation programs while meeting basic program requirements to sustain the functions of ecosystems in the protected areas. Estimated funding required for an optimal management scenario, defined as the funding required for all programs to reach and sustain optimal functions of ecosystems in the protected areas, was $36.8 million (World Bank 2012).

In the Dominican Republic, the reported annual expenditure on protected areas was $10.4 million, less than half the required funding for the basic needs ($22.6 million) and optimal management ($28.0 million)

[58] However, in 2018 CANARI will be assessing government funding allocated to forest conservation and climate change for the United Nations Food and Agricultural Organization.

scenarios (World Bank 2012). By 2011, the overall annual budget allocation to protected area management was $11.1 million (GEF 2012a). Although this sum represented an increase over 2008 funding levels, there was still a significant shortfall between actual and desired spending levels.

In Saint Kitts, recurrent expenditure for conservation and environmental management was approximately $2.3 million in 2012 (GEF 2012a).

Hotspot countries have many environmentally related taxes and levies, including specific environmental levies in Jamaica (effective since 2015), Saint Lucia (introduced in 1999), Grenada and Barbados (introduced in 1996). A 2014 study of environmental taxes in the Caribbean, which included the hotspot countries of The Bahamas, Barbados and Jamaica, found that these taxes accounted for a significant proportion of government revenues (Attz *et al.* 2014). Although these are potential sources of funding, little evidence of direct reinvestment in conservation and environmental management has been found, as money collected is directed to national consolidated funds rather than being ringfenced, even in part, for the maintenance of environmental and natural resource services, as has been the case in Trinidad and Tobago through the Green Fund.

Some governments have created legislative/policy frameworks that enable CSOs to collect user fees from the management of protected areas. For example, in the British Virgin Islands, Jamaica and Saint Lucia, CSOs with delegated management responsibility can collect user fees and channel them towards supporting biodiversity conservation efforts.

There are also a few examples of governments channeling support to CSOs engaged in protected area management and other biodiversity conservation activities through subventions. For example, the Jamaican government supports CSOs with management responsibility for special fisheries conservation areas and the Blue and John Crow Mountains National Park. Such funding is vulnerable to changes in government budgetary allocations for conservation and natural resource management.

11.5 Funding from Private Sources

11.5.1 Philanthropy

Private philanthropic flows for conservation in the hotpot are a part of the funding base for CSOs in the region but it appears they are currently not the most important source of direct funding. Forty-percent of the 41 CSOs that took part in the 2017 survey carried out as part of the reprofiling exercise indicated that they had received funding from international private foundations in the past three years but only 5 percent said they were their primary source of funding (see Section 9.3.1). Just over 30 percent of respondents indicated that they received support from individual donors, which were the main source of support for 5 percent of respondents. The main source of funding identified by the respondent CSOs was INGOs. Almost 80 percent of the respondents said they had received funding from INGOs, and just over 25 percent of them identified INGOs as their main source of support over the past three years. INGOs were not surveyed as part of the exercise but funding flows to these groups from private donors is certainly higher than to Caribbean CSOs.

Once an important source of philanthropic funding for CSOs in the Caribbean, the John D. and Catherine T. MacArthur Foundation will complete its 10-year commitment to coastal and marine conservation efforts, with final calls for proposals in the hotspot in Cuba in 2019. All grantmaking will conclude by

2020. MacArthur is shifting its grantmaking approach to other priorities, and the Conservation and Sustainable Development Program is being phased out.

Between 2010 and 2017, MacArthur made 27 grants for biodiversity conservation-related activities with a value of $7.5 million (The MacArthur Foundation n.d.). Only five of these grants were made to organizations based in the Caribbean (including Trinidad and Tobago), and all were made in 2010. Grants since 2012 have been allocated for work in Cuba (four), Haiti (one) and at the regional level (three).

The Mohamed bin Zayed Species Conservation Fund was established in 2008 and became active in 2009, at the time when the original CEPF ecosystem profile for the Caribbean islands was being prepared. Between 2010 and 2017, the fund awarded 94 grants in 16 hotspot countries for a total value of $767,905 (Table 11.1, The Mohamed bin Zayed Species Conservation Fund n.d.). The maximum grant size is $25,000 and the average grant size in the hotspot over the period was $8,169. This is the only dedicated species conservation fund operating in the region that was identified during the profiling process.

Table 11.1 Mohamed bin Zayed Species Conservation Fund Grants 2010-2017 in the Caribbean Islands Hotspot

Country	Number of Grants (2010 – 2017)	Value of Grants
Anguilla	1	$6,750
Antigua and Barbuda	3	$30,000
Bahamas	5	$63,900
Barbados	2	$14,070
British Virgin Islands	3	$30,000
Cayman Islands	2	$12,000
Cuba	27	$161,900
Dominica	1	$7,352
Dominican Republic	28	$231,502
Grenada	2	$24,000
Haiti	5	$57,950
Jamaica	6	$75,981
Montserrat	1	$10,000
Netherlands Antilles	2	$13,100
Puerto Rico	3	$14,500
Turks and Caicos Islands	3	$14,900
Total	**94**	**$ 767,905**

Source: The Mohamed bin Zayed Species Conservation Fund (n.d.).

The Oceans 5 international funders collaborative, which was established in 2011, has invested $2.16 million across three three-year marine conservation grants in The Bahamas and Cuba between 2016 and 2017. In The Bahamas, Oceans 5 is supporting Bahamian CSO and INGO efforts to develop an effective marine protected area network. It is also supporting INGO work to strengthen and expand Cuba's marine protected area, rebuild fish populations and promote sustainable fisheries that support vibrant coastal economies and healthy marine environments (Oceans 5 n.d.).

Among the private foundations that are active in the hotspot are the Waitt Foundation (http://waittfoundation.org/mission-vision) and the Moore Charitable Foundation/Moore Bahamas Foundation (https://www.moorecharitable.org/moorebahamasfoundation), both of which are focused on

coastal and marine conservation. Through the Blue Halo Initiative, the Waitt Institute has partnered with governments of Barbuda, Curaçao and Montserrat to implement comprehensive sustainable ocean policies.

While the mapping exercise did not include a review of small family foundations and individual donors, it is important to note that they are part of the funding landscape in hotspot countries and some conservation CSOs have benefited from support from family foundations and bequests from high net worth individuals. In the absence of tax and other incentives, the enabling environment for individual philanthropy is underdeveloped in most hotspot countries and many of the small family foundations that are active in the region were established by North Americans and Europeans with an affinity to a particular place.

11.5.2 Private Sector

Private sector foundations are also a source of support to Caribbean CSOs active in biodiversity conservation in the hotspot. Forty percent of CSOs surveyed in 2017 obtained funding from private sector foundations within the past three years, while 10 percent of respondents said they were their principal source of support. As discussed in Section 7.2.6, efforts to engage the national and regional private sector in conservation efforts across the region have met with varying degrees of success to date, with the most traction being gained in the Dominican Republic.

Among multinational companies with philanthropic or corporate social responsibility programs in the hotspot, the Walt Disney Company Foundation, through the Disney Conservation Fund, provides support for species and habitats to reverse reverse the decline of wildlife and protect natural resources. Between 2015 and 2017, 22 of the Foundation's 320 grants funded conservation actions in eight hotspot countries, including Cuba and a UK OCT. These grants all had a species conservation focus.

Bepensa S.A. de C.V., a Mexican beverage company that operates as a Coca-Cola bottler in the Yucatan peninsula and the Dominican Republic, is supporting catchment restoration in the Dominican Republic, consistent with the Coca-Cola Company's focus on water resource sustainability. Royal Caribbean Cruise Ltd and Virgin Holidays are partners of the USAID-funded Caribbean Biodiversity Program. Private sector members of the Caribbean Challenge Initiative include Caribbean companies, such as Grupo Propagas, Grupo PuntaCana, Guy Harvey Sportswear and Sandals Resorts International, as well as multinational companies, such as Disney Cruise Lines, Royal Caribbean Cruise Lines Ltd, Starwood Hotels and Resorts, Tropical Shipping and Virgin Group.

Several of the Caribbean private sector organisations that have been active in biodiversity conservation in the hotspot are discussed in Section 7.2.6. However, most Caribbean private sector philanthropy and corporate social responsibility activities in hotspot countries target social issues, such as children, youth and education.

11.6 Small Grant Funds

The following three operational and incipient biodiversity-conservation-oriented small grant mechanisms were identified in the hotspot:

CaMPAM/ECMANN Small Grants (2014–2016). Under the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB)-funded ECMMAN project,

the Caribbean Marine Protected Area Management Network and Forum (CaMPAM) administered a small grant program as part its activities to strengthen existing marine managed areas and support the establishment of new ones in the six participating OECS countries.
Focus: Coastal/marine ecosystems; marine protected areas.
Funding envelope: €1.18 million ($1.25 million).

Blue Action Fund Small Grant Program (first call for proposals closed in August 2017). Funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) and the German Development Bank (KfW), this small grant fund supports marine and/or coastal conservation projects in marine protected areas and their buffer zones. Areas of interest include improving management of existing MPAs, establishing new MPAs or enlarging existing ones to improve national protected area systems, and supporting sustainable livelihoods in coastal communities dependent on MPAs and their buffer zones.
Focus: Coastal/marine ecosystems; marine protected areas.
Funding envelope: €8-12 million ($9-13 million).

US Fish and Wildlife Service Caribbean Program Small Grants (2018). As part of its USAID-funded Caribbean initiative, the US Fish and Wildlife Service will provide grants for support in the areas of species conservation, wildlife law enforcement, management of MPAs, community engagement in marine, coastal and terrestrial ecosystems.
Focus: Coastal/marine ecosystems; marine protected areas; terrestrial ecosystems and protected areas.
Funding envelope: Between 15 and 20 small grants, up to a total level of $1.5 million.

As part of its work to engage civil society in the strategic implementation plans of the GEF project *Catalysing Implementation of the Strategic Action Programme for the Sustainable Management of Shared Living Marine Resources in the Caribbean and North Brazil Shelf Large Marine Ecosystems* (CLME+ Project), implemented by UNDP, CANARI is developing a mechanism to improve coordination among the various small grants mechanisms in the region and sustainability of results. CANARI is also administering small grants under the EU-supported PISCES project and other projects.

11.7 Emerging Funding Sources

11.7.1 Caribbean Biodiversity Fund

The CBF is a regional endowment fund that was established in 2012 to provide a sustainable flow of resources for the conservation, protection and maintenance of biodiversity within national protected area systems and any other areas of biological importance in the Caribbean. The CBF is part of the sustainable financing architecture that has been set up to support the Caribbean Challenge Initiative and its “20 by 20” goal to effectively conserve and manage at least 20 percent of the marine and coastal environment by 2020 in participating countries (see Section 8.2). The CBF mobilizes resources and channels support to partner national conservation trust funds and directly to selected national and regional projects. Currently, the CBF manages approximately $70 million through a conservation-focused endowment ($43 million) and a sinking fund to support ecosystem-based adaptation ($26.5 million) (Caribbean Biodiversity Fund 2014).

11.7.2 National Conservation Trust Funds

Along with the CBF, the establishment of national conservation trust funds has been an important development towards sustainable financing for conservation in the hotspot. Where trust funds previously did not exist in Caribbean Challenge Initiative participating countries, or where new mechanisms were needed, national biodiversity trust funds have been created. Except for the Dominican Republic's National Fund for the Environment and Natural Resources (Fondo MARENA), which is a government fund, the trust funds have been set up as private legal entities, independent from government. The national funds and their statuses as at July 2018 are shown in Table 11.2. The national conservation trust funds associated with the CBF all have vertical agreements with the regional endowment.

Table 11.2 Caribbean Biodiversity/Environmental Trust Funds

Country	Fund	Comments
Antigua and Barbuda	Marine Ecosystems Protected Areas (MEPA) Trust Fund	Established in 2014. Received CBF[59] pre-financing in 2016. Met CBF eligibility requirements and signed Partnership Agreement in June 2017.
	Sustainable Island Resource Framework (SIRF) Fund	Established in 2015. To serve as the National Implementing Entity for all environmentally related finance and technical assistance. Fifteen (15) percent of the funds are earmarked for the MEPA Trust Fund.
Bahamas	Bahamas Protected Areas Fund (BPAF)	Final stage of establishment. Legislation and initial capital investment ($2.5 M) in place. Legislation being amended to meet CBF elgibility criteria. Grants should start to be distributed in 2019.
Dominican Republic	National Fund for the Environment and Natural Resources of the Dominican Republic (Fondo MARENA)	Operational since 2009. Met CBF eligibility requirements and signed Partnership Agreement in December 2016. First CBF Endowment Payment made in October 2017. First CBF-related Call for Proposals and grants in 2018.
Grenada	Grenada Sustainable Development Trust Fund (GSDTF)	Established in 2016. In the process of being established. CBF is assisting with the operationalization of the fund and awaiting pre-financing and eligibility requests.
Haiti	Haiti Biodiversity Fund	Established in 2017. In the process of being established. CBF is assisting with the operationalization of the fund and awaiting pre-financing and eligibility requests.
Jamaica	Environmental Foundation of Jamaica	Estalished in 1993. Managed one sinking conservation debt-swap and currently manages Forest Conservation Fund and administers Climate Change Adaptation Fund for IDB Project.
	National Conservation Trust Fund of Jamaica (NCTFJ)	Established in 2014. Signed CBF pre-financing in 2017. CBF is assisting with the operationalization of the fund and awaiting eligibility request
Saint Kitts and Nevis	St. Christopher and Nevis Conservation Fund (SCNCF)	Established in 2016. Signed CBF pre-financing in 2017. CBF is assisting with the operationalization of the fund and awaiting eligibility request.
Saint Lucia	Saint Lucia National Conservation Fund (SLUNCF)	Established in 2016. Received pre-financing in 2016. Met eligibility requirements and signed Partnership Agreement in June 2017.
St. Vincent and the Grenadines	St. Vincent and the Grenadines Conservation Fund	Established in 2016. Signed CBF pre-financing in 2017. CBF is assisting with the operationalization of the fund and awaiting eligibility request.

Once the national conservation trust funds are operational, the CBF will channel funding to them annually. CBF funding available for disbursement to the participating national conservation trust funds will be approximately 4.5 percent percent of the monthly value of the portion of the CBF endowment earmarked for each trust fund (Caribbean Biodiversity Fund 2014).

[59] Caribbean Biodiversity Fund; https://caribbeanbiodiversityfund.org/programs/conservation-finance

11.7.3 Debt-for-Nature Swaps

Because several CEPF-eligible countries in the hotspot are burdened by high levels of debt (see Section 7.2.2), debt-for-nature swaps have been identified as a mechanism for leveraging resources for conservation and environmental management while reducing the public debt burden. TNC is working with national partners in Grenada, Haiti, and Saint Kitts and Nevis to broker agreements with creditors to restructure some of the public debt in support of conservation through debt-for-nature swaps. UNECLAC has proposed a debt buyback scheme for the Caribbean, to be brokered through the GCF. Under the proposed scheme, debt service payments of beneficiary countries would go into a resilience fund for financing climate change adaptation and mitigation projects (Quarless 2017).

11.8 Funding Trends

Multilateral and bilateral donors remain the largest sources of support for conservation-related themes in the Caribbean. Although most of the resources are directed towards governments, some resources do trickle down to CSOs, although it is difficult to quantify the total resource flows to civil society. In rare instances, CSOs are the lead implementing/executing agencies or co-executing partners but this is not the norm for the administration of multilateral and bilateral financing.

Dedicated funding flows to civil society are smaller than those to governments and regional agencies but national conservation trust funds are new sustainable financing mechanisms in hotspot countries that have the potential to support CSO activity over the medium to long term and to do so strategically. Funding from government sources may be falling significantly short of estimates of what is needed. There is growing private sector engagement in biodiversity conservation funding that offers the potential for new partnerships between government, civil society and the private sector that is supported by domestic and regional financing flows. Most funding for conservation-related activities is directed towards activities at the landscape and ecosystem levels, rather than species conservation. A few donors recognize the importance of providing funding to CSOs for organisational strengthening (e.g., EU and USAID) and others may include relevant capacity building for CSOs as part of their programs (e.g., GEF SGP).

CSOs are responding to these funding trends through new alliances and approaches. In particular, Caribbean CSOs are partnering with each other to be able to access to larger funds, including from global programs (for example under the EU), as well as large Caribbean regional programs. These are often inaccessible to Caribbean CSOs because of capacity requirements. Traditionally, these were awarded to international NGOs. Currently, however, national CSOs are banding together with regional CSOs in new alliances to be able to compete for these sources of funding. CSOs are also working to access support under regional and global projects, through developing new alliances with regional and international partners, negotiating roles in implementation, and advocating for allocation of specific funds for CSOs.

12 NICHE FOR INVESTMENT

The initial phase of CEPF investment in the Caribbean Islands, between 2010 and 2016, successfully laid a foundation for KBA protection and management in the hotspot, with its particular focus on improving the legal protection status of key sites, preparing management and conservation actions plans, and enabling effective stewardship by local communities. An important feature of the initial phase of investment was support for testing new and innovative approaches to conservation in national contexts.

The next phase of investment seeks to consolidate that foundation by:

- Building on the gains made during earlier investments, particularly to promote management effectiveness of priority KBAs.
- Replicating successful conservation approaches.
- Supporting innovation and testing of new conservation approaches.
- Strongly linking conservation to human well-being and climate resilience.
- Supporting the long-term sustainability of local CSOs.
- Ensuring the long-term sustainability of the conservation results to be achieved through CEPF interventions.

The CEPF niche in the Caribbean Islands Biodiversity Hotspot is guided by the CEPF mission to provide rapid and flexible funding to civil society to act in areas where globally significant biodiversity is under the greatest threat. The investment niche is informed by the experience of the first CEPF program in the hotspot and the findings of this ecosystem profile. The scope of the niche was established during three national workshops in the Dominican Republic, Haiti and Jamaica, an online consultation process for The Bahamas and the eastern Caribbean, and a regional workshop in Jamaica.

12.1 Eligible Countries

CEPF support is available for conservation action within the countries of the Caribbean Islands Biodiversity Hotspot that are signatories to the CBD and World Bank client countries: Antigua and Barbuda; Dominica; the Dominican Republic; Grenada; Haiti; Jamaica; Saint Kitts and Nevis; Saint Lucia; and St. Vincent and the Grenadines. The Bahamas and Barbados are also included as priorities for CEPF investment because of their eligibility to receive GEF funds.

12.2 Eligible Organizations

CEPF grant funding is available to legally registered CSOs, including non-governmental organizations, community groups, resource user and producer associations/organizations, universities, and private companies, among others, to carry out conservation activities for globally threatened species, KBAs and/or conservation corridors prioritized for support under the investment strategy (see Tables 13.1, 13.2, and 13.3 and Appendix 9). While support is not restricted to organizations with an environmental management or biodiversity conservation mandate, only activities that are aligned with the strategic directions and investment priorities outlined in Chapter 13 may be supported. There exist a number of civil society organizations that are not legally registered, either because they are newly established or for other reasons. Creative solutions will be explored to give them a pathway to become legally registered and receive CEPF grants. This is particularly important given the limited number of registered CSOs working on conservation-related fields in some eligible countries (Figure 9.1).

12.3 Strategic Focus

12.3.1 Building on the Gains of the Initial Phase of CEPF Investment

The next phase of CEPF investment will support actions and efforts begun under the initial phase that require additional support for consolidation. It will support replication and scaling-up of good practice models implemented during the initial phase. The activities and results of projects supported in the initial phase have been reviewed with a view to identifying opportunities to add value through "continuity of action," as well as based on new and pending policy and other developments in the KBAs. The approach and actions of the new phase will apply lessons learned from the initial phase (see Chapter 3).

12.3.2 Improving the Enabling Environment for Conservation

Stakeholders in the ecosystem profile consultation process emphasized the importance of a multi-pronged approach to conservation in the hotspot that includes addressing the institutional and structural impediments to management and preservation of the natural environment. Despite gains made, biodiversity considerations are still poorly valued in development planning and the pressure for short-term stimulus measures to address sluggish economic growth in hotspot countries continues to be a threat to biodiversity. Moreover, as described in Chapter 10, climate change projections suggest a much altered and uncertain future, with have profound implications for the Caribbean's people and biodiversity. The CEPF investment phase is for a five-year window. As well as addressing immediate conservation issues, CEPF investment will improve the enabling environment for conservation, in order to permit more prompt, effective and sustained responses to future trends and emerging issues. To this end, the new phase of CEPF investment seeks to: mainstream conservation values into the policy and legal frameworks of hotspot countries; improve governance arrangements; expand financing opportunities, particularly from local sources; and build a constituency for nature, conservation and ecosystem services. CEPF will also invest in planning for future scenarios and impacts, in order to get ahead of the curve of change

12.3.3 Managing a Targeted Portfolio of Key Biodiversity Areas

The new phase of CEPF investment will focus on 33 priority sites (Table 13.1). By applying the criteria of the new *Global Standard for the Identification of Key Biodiversity Areas* (IUCN 2016), the ecosystem profile presents a portfolio of sites from among the hotspot's KBAs with the highest biological values, ensuring that CEPF's investment will safeguard important and threatened biodiversity. Further site-based priority setting ensures that each prioritized site has a civil society constituency with an interest in conservation (see Appendix 8).

During the earlier phase, there were examples of clustered grant-making, where linked grants were made to CSOs with complementary capabilities to address the conservation of a single site. CEPF will actively promote such approaches to build synergies across grants and scale up impact in sites and corridors.

12.3.4 Focusing on Species Conservation

The inclusion of a specific strategic direction for species conservation represents a departure from the investment strategy for the initial phase, which operated at site and landscape levels only. Participants in the consultations highlighted the need for targeted species conservation initiatives to complement the work that is being done at site level. The review of current funding for conservation in the hotspot indicates more funding is currently earmarked for site-level interventions than for species conservation.

12.3.5 Leveraging Resources

CEPF aims to use its investment to leverage new and existing financial and human resources as part of a sustainability strategy for the hotspot. In implementing the strategy, CEPF seeks to work in partnership with the public and private sector to identify and maximize opportunities for value-added synergies. Particular emphasis will be placed on collaborating with CEPF donors and other active conservation financiers. CEPF will also seek to co-finance and collaborate with the EU BEST Initiative (voluntary scheme for Biodiversity and Ecosystem Services in Territories of European overseas) in the hotspot.

12.3.6 Positioning Biodiversity Conservation in a Sustainable Development Framework

Biodiversity is inextricably linked with ecosystems and the services they provide for human-well-being. CEPF recognizes that the conservation, rehabilitation and sustainable use of biological diversity can help address a range of societal challenges that face the Caribbean, as well as contribute to the hotspot's resilience in the face of a changing climate. The investment strategy for the new phase is, therefore, aligned not only with the CBD Aichi Targets (particularly Targets 1, 2, 5, 9, 11, 12 and 14) but also with the Sustainable Development Goals, especially Goal 15 (life on land), to "protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss". The CEPF investment strategy for the Caribbean islands supports progress towards the following targets of Goal 15:

- Ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands (15.1).
- Promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally (15.2).
- Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species (15.5).
- Introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species (15.8).
- Integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts (15.9).
- Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystem (15.a).

The CEPF investment strategy also supports Goal 14 (life below water), to "conserve and sustainably use the oceans, seas and marine resources for sustainable development". The CEPF investment strategy explicitly addresses Target 14.2, to sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts.

12.3.7 Fostering Partnerships and Collaboration

The new phase of CEPF investment will seek to collaborate and partner with other organizations, initiatives and scientific programs with a biodiversity conservation focus that are active in the Caribbean Islands, including but not limited to: CARICOM and its organs; the CDB; the CBF and the national conservation trust funds; CI Ventures; the Coral Reef Consortium; the EU BEST Initiative; the GCRMN; the GEF SGP; the IDB; the Latin American and Caribbean Network of Environmental Funds (RedLAC); the Oceans Partnership Project; the Sustainable Ocean Fund; the UN Environment Caribbean Environment Program; the Regional Activity Centre for the SPAW Protocol; TNC; and UNDP.

12.4 Crosscutting Themes

Two crosscutting themes (climate change and gender) will be integrated across grant-making objectives and programming as relevant.

12.4.1 Climate Change

The 2017 Atlantic hurricane season refocused the attention of all sectors of Caribbean society on the region's vulnerability and the need to take the threat of climate change seriously. There is an opportunity to build on this receptiveness. There is also an imperative to build climate resilience to ensure sustainability of the investment. The CEPF investment strategy, therefore, recognizes the value of ecosystem-based adaptation in increasing resilience and reducing the vulnerability of people and the environment to climate change. It explicitly calls for climate change to be taken into consideration in interventions that target species, sites and corridors. Moreover, many of the priority sites for CEPF investment deliver essential ecosystem services, such as water provisioning in the case of Parque Nacional Dr. Juan Bautista Pérez (Valle Nuevo) in the Dominican Republic and Cockpit Country in Jamaica. These sites require adaptation strategies that safeguard these services. Where appropriate, CEPF investments will include activities to anticipate and prepare for future climate change scenarios and likely impacts.

12.4.2 Gender

Men and women often play different roles in managing natural resources. Women's reliance on ecosystems, for example, is usually strongly linked to the provision of water, food and health at the household level. What is more, the degradation of ecosystems and climate change affect groups in society differently, with disadvantaged groups often being most adversely impacted. Consistent with CEPF's Gender Policy,[60] gender equity is a critical element of how the investment strategy for the Caribbean will ensure that civil society is empowered, and that there is equitable participation and decision making by stakeholders at all scales. The portfolio will be managed to ensure gender analysis and recommendations are included in project design, implementation and monitoring, and will promote best practices for incorporating gender in conservation strategies throughout the hotspot. Gender equity will be sought under all strategic directors, and all applications will be reviewed through a gender lens.

[60] See https://www.cepf.net/grants/before-you-apply/gender-policy

13 CEPF INVESTMENT STRATEGY AND PROGRAMMATIC FOCUS

13.1 Site, Corridor and Species Prioritization

13.1.1 Site Prioritization

To ensure that the investment strategy delivers significant and sustained impacts for biodiversity conservation, CEPF seeks to avoid spreading its funding too thinly. For this reason, the profile identifies a set of priority geographies from among the 167 KBAs and seven conservation corridors in CEPF-eligible countries presented in Chapter 5. A detailed description of the prioritization process is presented in Appendix 8. The process relied on national expert assessment of the highest ranking KBAs in terms of relative biological importance against eight additional criteria:

i. *Degree of threat.* Vulnerability scores based on the presence of such threats as agriculture, commercial development, climate change, invasive alien species, etc.
ii. *Funding need.* Level of investment by national and international donors for conservation.
iii. *Management need.* Existence of management plans, staffing, infrastructure, and mechanisms for community engagement and sustainable funding.
iv. *Civil society capacity.* Emphasizing the presence, interest, and capacity of local CSOs.
v. *Operational feasibility.* Viability of civil society to work effectively at a site, based on a consideration of security risk, land tenure, legal restrictions and other factors.
vi. *Alignment with national priorities.* Support for those KBAs that are national biodiversity priorities.
vii. *Opportunity for landscape-scale conservation.* Ability to achieve landscape-scale conservation through linkage to large KBAs.
viii. *CEPF feasibility.* Potential for added value of CEPF investment based on continuity of action at sites targeted during the initial phase, and strategic opportunity based on current or emerging conditions at KBAs.

Of the 167 KBAs identified to date in CEPF-eligible countries, the investment strategy will target 33 sites that are considered the highest priorities (Table 13.1)**.** Twenty-three of these sites (70 percent) were priorities for CEPF support during the initial phase of investment in the hotspot. Priority sites encompass terrestrial and nearshore marine ecosystems (Figures 13.1 to 13.6). All priority sites contain terrestrial ecosystems. CEPF will only support activities in nearshore marine ecosystems where they relate to terrestrial ecosystems, such as through ridge-to-reef approaches; activities in offshore marine ecosystems will not be eligible for support. The 33 CEPF priority sites cover 1.2 million hectares in eight countries; 1.1 million hectares or 91 percent of their land area is partially or completely protected. Collectively, they represent those sites with the highest biological values that are under the most threat, with the most urgent need for improved management, and where is it possible to work without major impediments.

Table 13.1 Priority Sites for CEPF Investment

	CEPF Code	Site	Country	KBA Area (ha)	Area Protected (ha)	Percentage of KBA Protected	CEPF Priority in Phase 1
1.	ATG-5	North East Marine Management Area and Fitches Creek Bay	Antigua and Barbuda	11,115	10,885	98	Yes
2.	ATG-6	Redonda	Antigua and Barbuda	2,130	0	0	No

	CEPF Code	Site	Country	KBA Area (ha)	Area Protected (ha)	Percentage of KBA Protected	CEPF Priority in Phase 1
3.	BHS-2	Andros Blue Holes National Park	The Bahamas	13,479	13,479	100	No
4.	BHS12	Exuma Cays Land and Sea Park	The Bahamas	60,223	58,326	97	No
5.	DMA-1	Morne Diablotin National Park	Dominica	3,347	3,347	100	No
6.	DOM-4	Monumento Natural Cabo Samaná	Dominican Republic	931	931	100	No
7.	DOM-13	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Dominican Republic	90,915	90,894	100	Yes
8.	DOM-16	Parque Nacional Jaragua	Dominican Republic	156,092	156,089	100	Yes
9.	DOM-18	Parque Nacional Lago Enriquillo e Isla Cabritos	Dominican Republic	40,575	40,575	100	Yes
10.	DOM-20	Parque Nacional Los Haitises	Dominican Republic	63,408	63,408	100	Yes
11.	DOM-23	Parque Nacional Montaña La Humeadora	Dominican Republic	30,646	30,646	100	Yes
12.	DOM-24	Parque Nacional Sierra de Bahoruco	Dominican Republic	109,423	109,423	100	Yes
13.	DOM-32	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte (Bahoruco Oriental)	Dominican Republic	3,362	3,362	100	Yes
14.	DOM-34	Reserva Científica Ébano Verde	Dominican Republic	2,999	2,999	100	Yes
15.	HTI-1	Aire Protégée de Ressources Naturelles Gérées de Baradères-Cayemites	Haiti	87,920	87,920	100	No
16.	HTI-3	Aire Protégée de Ressources Naturelles Gérées des Trois Baies	Haiti	75,500	75,500	100	Yes
17.	HTI-16	Lac Azuéi – Trou Caiman	Haiti	16,317	147	1	No
18.	HTI-23	Parc National Naturel de Grand Bois	Haiti	372	372	100	Yes
19.	HTI-24	Parc National Naturel Forêt des Pins-Unité 1	Haiti	6,799	6,799	100	Yes
20.	HTI-25	Parc National Naturel La Visite	Haiti	11,455	11,455	100	Yes
21.	HTI-26	Parc National Naturel Macaya	Haiti	13,486	9,938	74	Yes
22.	JAM-2	Blue and John Crow Mountains Protected National Heritage and surroundings	Jamaica	60,497	46,782	77	No
23.	JAM-5	Catadupa	Jamaica	15,785	1,911	12	Yes
24.	JAM-7	Cockpit Country	Jamaica	64,139	25,461	40	Yes
25.	JAM-8	Dolphin Head	Jamaica	5,389	1,043	19	Yes
26.	JAM-13	Litchfield Mountain - Matheson's Run	Jamaica	16,013	5,611	35	Yes
27.	JAM-20	Peckham Woods	Jamaica	239	67	28	Yes
28.	JAM-22	Portland Bight Protected Area	Jamaica	197,957	197,957	100	Yes
29.	LCA-2	Castries and Dennery Waterworks Reserve and Marquis	Saint Lucia	7,886	7,886	100	No
30.	LCA-4	Mandelé Protected Landscape	Saint Lucia	2,561	417	16	Yes
31.	LCA-6	Pointe Sable	Saint Lucia	2,050	1,504	73	Yes
32.	VCT-1	Chatham Bay, Union Island	St. Vincent and the Grenadines	350	0	0	No
33.	VCT-3	Cumberland Forest Reserve	St. Vincent and the Grenadines	1,017	1,017	100	Yes
Total CEPF Priority Area				**1,174,380**	**1,069,699**	**91**	**23 sites**

Figure 13.1 Priority Sites for CEPF Investment in The Bahamas

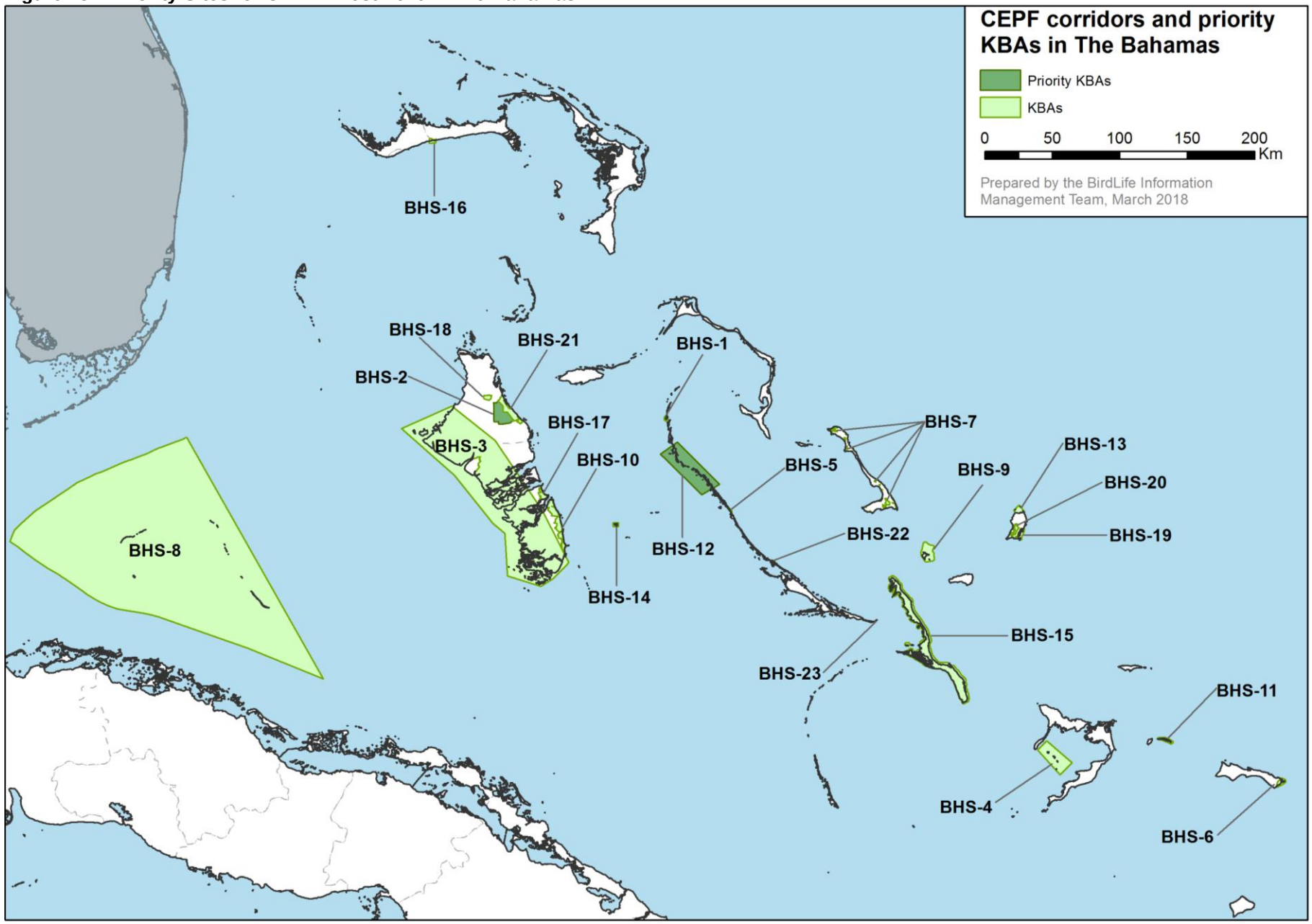


Figure 13.2 Priority Sites and Corridors for CEPF Investment in Jamaica

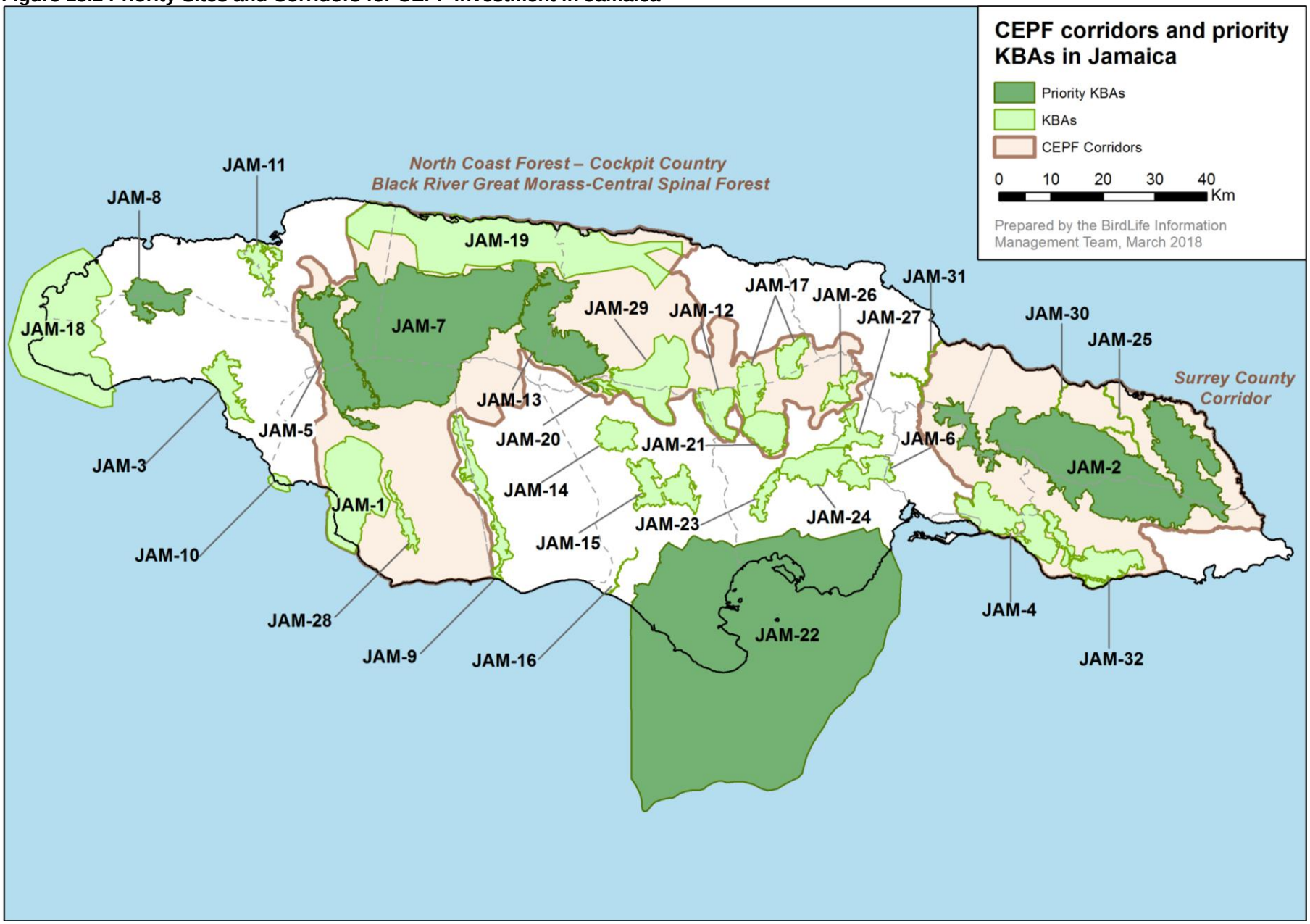


Figure 13.3 Priority Sites and Corridors for CEPF Investment in Haiti

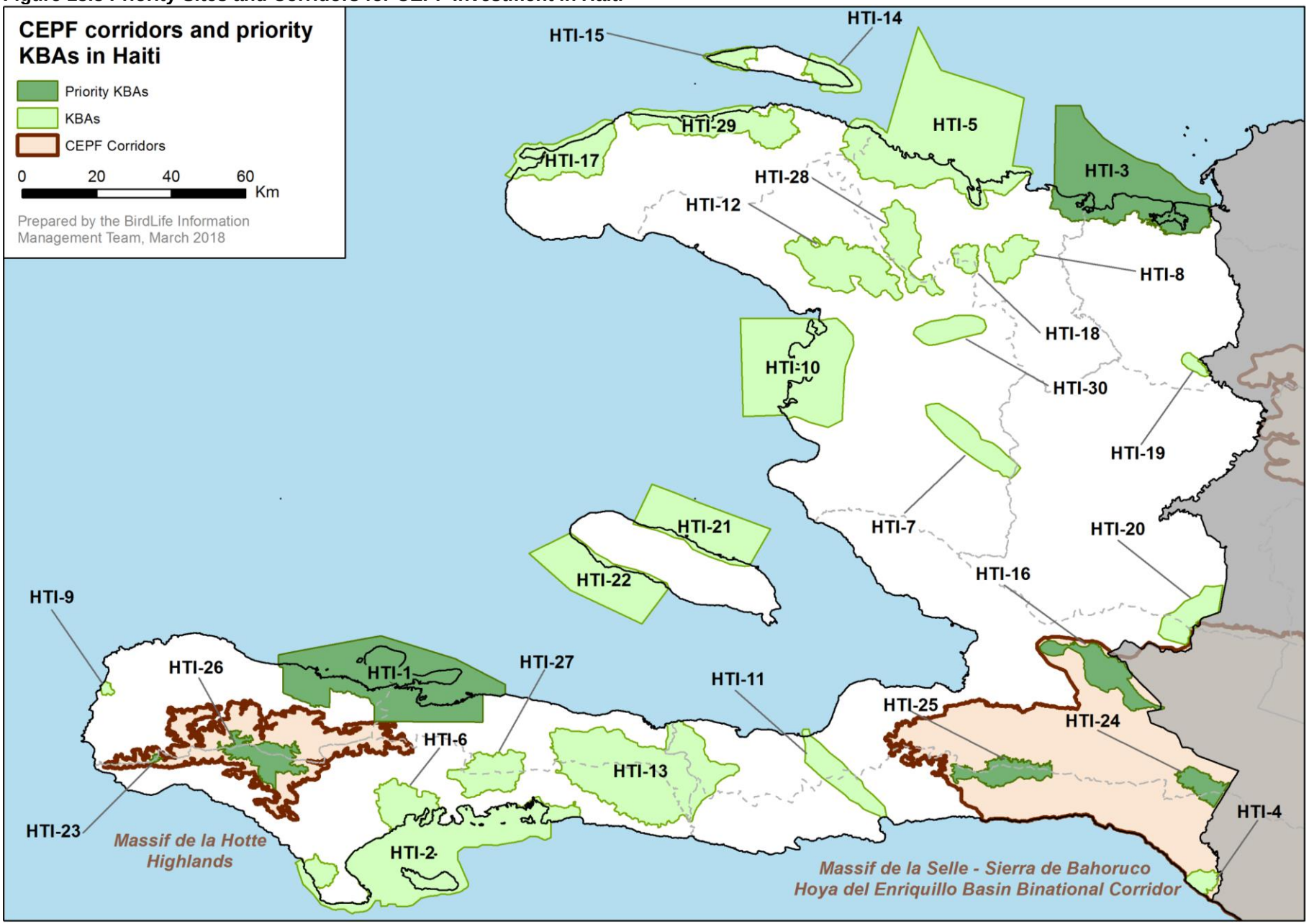


Figure 13.4 Priority Sites and Corridors for CEPF Investment in the Dominican Republic

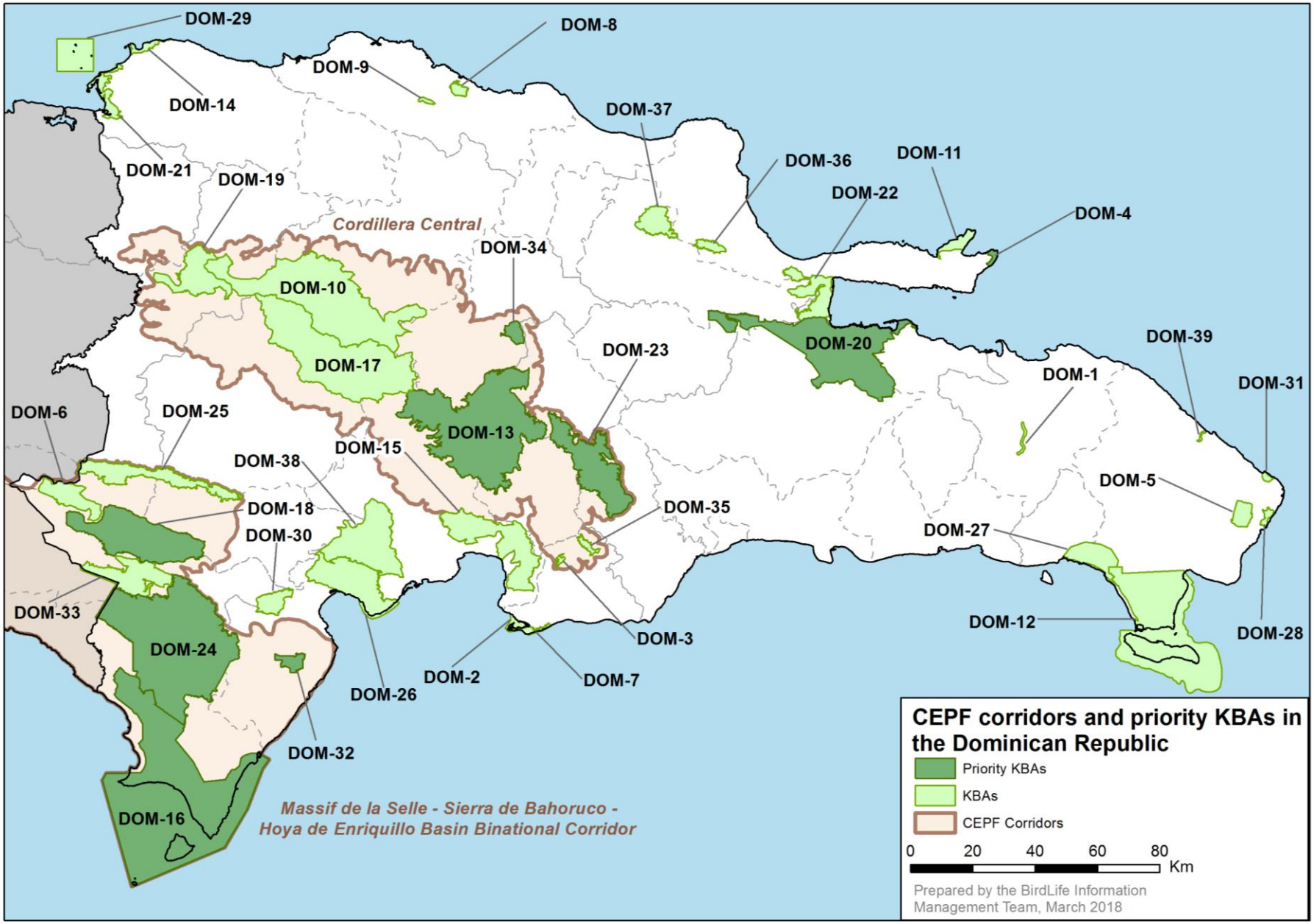


Figure 13.5 Priority Sites for CEPF Investment in Antigua and Barbuda, and Dominica

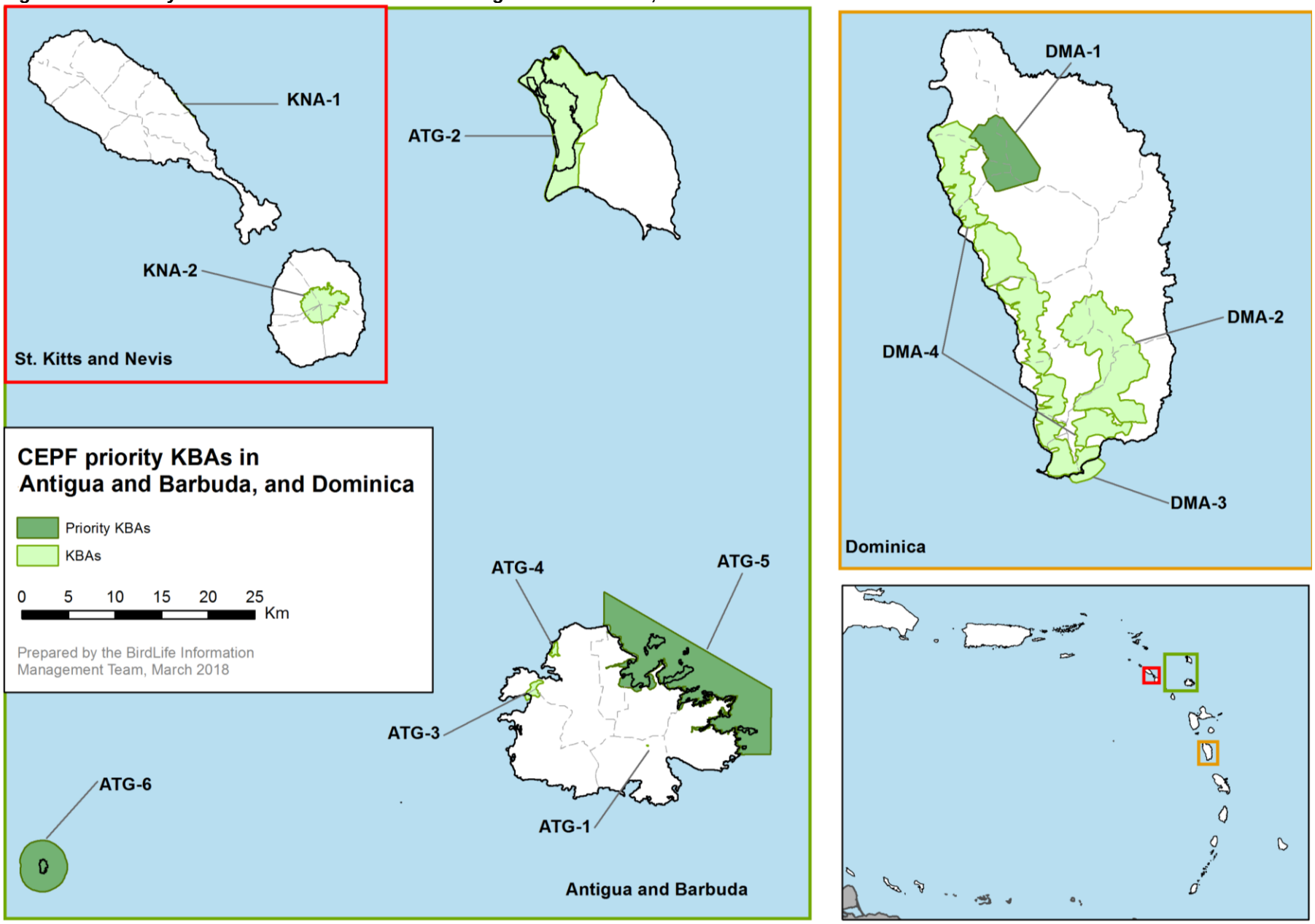
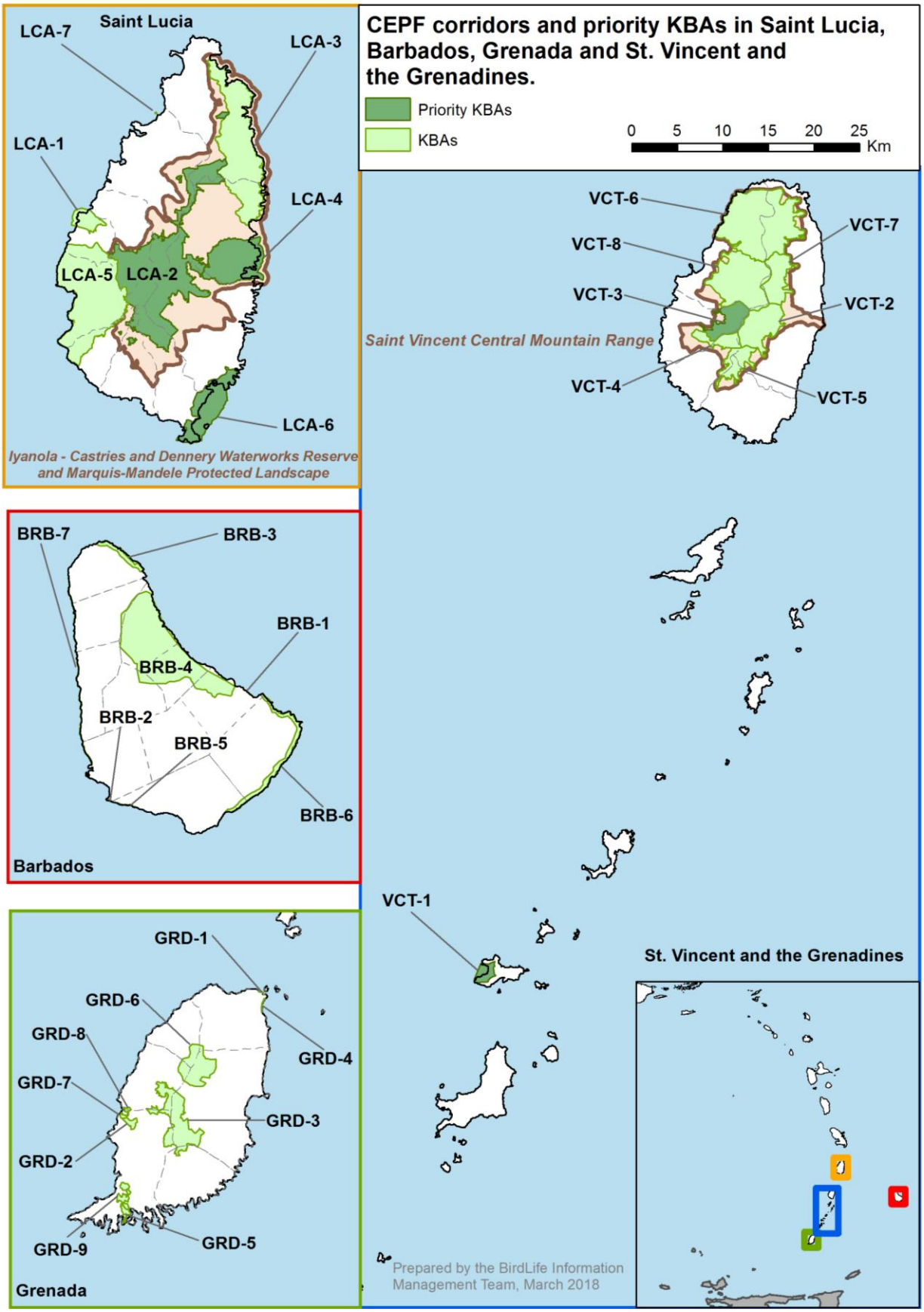


Figure 13.6 Priority Sites and Corridors for CEPF Investment in Saint Lucia, Barbados, Grenada, and St Vincent and the Grenadines



The investment strategy gives special consideration to three sites in Barbados and Haiti (Table 13.2). These sites were prioritized under the initial phase of CEPF investment but their status under the new KBA standard is undetermined due to insufficient species-level data. The investment strategy provides for the compilation of existing species data to verify their status as confirmed KBAs.

Table 13.2 Special Consideration Data Deficient Sites

	Site	Country	Land Area (ha)	Protected Area (ha)	Percentage of KBA Protected	Notes
1	Scotland District	Barbados	5,711	104	2	Site currently assessed as a KBA but needs to be re-delineated
2	Parc National Naturel des Deux Mamelles	Haiti	2,265	2,265	100	Insufficient data for assessment
3	Parc National Naturel Forêt des Pins-Unité 2	Haiti	14,165	14,165	100	Insufficient data for assessment

At the site level, CEPF will support the preparation and implementation of management plans, as well as the strengthening of institutional arrangements for management and other actions to enhance management effectiveness. CEPF will support the application of habitat management and restoration tools that are needed to achieve conservation targets. In unprotected and under-protected sites, CEPF will support processes to bring the KBAs under formal protection and to promote appropriate land management designations and planning frameworks. CEPF will also support species conservation efforts focused on globally threatened single island endemic plant and animal species in the priority KBAs.

13.1.2 Corridor Prioritization

CEPF will support landscape-level conservation actions in the seven corridors listed in Table 13.3. Corridors were defined using the criteria described in Section 5.3. Each corridor includes at least one CEPF priority site. The corridor approach allows for CEPF investment to benefit 21 KBAs in addition to those identified as priority sites (33) and special consideration data deficient sites (three).

Table 13.3 CEPF Priority Corridors in the Caribbean Islands

	Corridor Name	KBAs		Country	Area (ha)	CEPF Priority in Phase 1
		CEPF Priority Sites	Other KBAs			
1	Massif de la Selle – Sierra de Bahoruco – Hoya de Enriquillo Basin Binational Corridor	Parc National Naturel Forêt des Pins-Unité 1; Lac Azuei-Trou Caiman; Parc National Naturel La Visite; Parque Nacional Jaragua; Parque Nacional Lago Enriquillo e Isla Cabritos; Parque Nacional Sierra de Bahoruco; Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte (Bahoruco Oriental)	Anse-à-Pitres; Monumento Natural Las Caobas; Parque Nacional Sierra de Neyba; Reserva Biológica Loma Charco Azul	Haiti, Dominican Republic	885,067	Yes (but geography extended to include Lac Azuei-Trou Caiman KBA)
2	Cordillera Central	Parque Nacional Montaña La Humeadora; Parque Nacional Parque Nacional Dr. Juan Bautista Pérez (Valle Nuevo) Reserva Científica Ébano Verde	Parque Nacional Armando Bermúdez; Loma Nalga de Maco y Rio Limpio Parque Nacional José del Carmen Ramírez;	Dominican Republic	777,604	Yes

	Corridor Name	KBAs		Country	Area (ha)	CEPF Priority in Phase 1
		CEPF Priority Sites	Other KBAs			
3	Massif de la Hotte Highlands	Parc National Naturel de Grand Bois; Parc National Naturel Macaya		Haiti	86,100	No (formerly part of Massif de la Hotte KBA)
4	North Coast Forest-Cockpit Country-Black River Great Morass-Central Spinal Forest	Catadupa, Cockpit Country, Litchfield Mountain- Matheson's Run, Peckham Woods	Black River Great Morass; Kellits Camperdown; Mt. Diablo; Point Hill; Santa Cruz Mountains; Stephney John's Vale-Bull Head	Jamaica	370,405	Yes (extended to include Central Spinal Forest)
5	Surrey County Corridor	Blue and John Crow Mountains Protected National Heritage and surroundings	Bull Bay; Yallahs	Jamaica	178,196	No
6	Iyanola - Castries and Dennery Waterworks Reserve and Marquis-Mandele Protected Landscape	Castries and Dennery Waterworks Reserve and Marquis; Mandele Protected Landscape	Iyanola	Saint Lucia	31,228	No
7	Saint Vincent Central Mountain Range	Cumberland Forest Reserve	Colonaire Forest Reserve; Dalaway Forest Reserve; Kingstown Forest Reserve; La Soufriere National Park; Mount Pleasant Forest Reserve; Richmond Forest Reserve	Saint Vincent and the Grenadines	16,711	Yes

At the corridor level, CEPF will support the preparation and implementation of landscape-level policy and planning frameworks, particularly those that enhance ecosystem service functionality and climate change resilience of the priority sites and the watersheds they support. All corridor-level activities must have a demonstrable link to the functionality and ecosystem services of priority sites.

13.1.3 Species Prioritization

Strategic Direction 3 addresses the conservation of globally threatened single-island endemic species occurring in at least one priority site, with the aim of reversing species declines and preventing extinctions. Globally threatened single-island endemic species occurring in Barbados and Grenada, where no KBAs have been prioritized for investment under this strategy, will also be eligible for support. The 138 priority species (75 animal and 63 plants) that are eligible for support under this Strategic Direction are listed in Appendix 9. There are 11 Critically Endangered and 22 Endangered species in the CEPF-eligible countries that are not endemic to a single island and, therefore, not prioritized for support under Strategic Direction 3. Most of these species are marine fishes, corals and marine mammals.

The strategy also prioritizes strategic conservation actions in support of seven priority plant families with high levels of endemism and threat because of intensive use by local populations.

13.2 Strategic Directions and Investment Priorities

Table 13.4 CEPF Caribbean Islands Strategic Directions and Investment Priorities

Strategic Directions	CEPF Investment Priorities
1. Improve the protection and management of 33 priority sites for long-term sustainability	1.1 Strengthen the legal protection of priority sites 1.2 Prepare and implement participatory management plans that support broad stakeholder collaboration 1.3 Assess climate change impacts and integrate climate change adaptation into management plans and their implementation responses to protect ecosystem functions and build resilience 1.4 Eradicate, control or prevent further spread of invasive plants and animals that are affecting globally threatened species populations at priority sites 1.5 Update the KBA analysis to fill critical conservation planning data gaps in Barbados and Haiti
2. Increase landscape-level connectivity and ecosystem resilience in seven priority corridors	2.1 Prepare and support implementation of participatory local and corridor-scale land-use and watershed management plans to guide future development and conservation efforts 2.2 Support sustainable livelihoods in agriculture, fisheries, forestry, and nature tourism that enhance ecosystem resilience and landscape-level connectivity and deliver gender-equitable benefits, in order to maintain the functionality of priority sites 2.3 Promote the adoption and scaling up of conservation best practices in those enterprises compatible with conservation to promote connectivity and ecosystem services in the corridors
3. Safeguard priority Critically Endangered and Endangered species	3.1 Prepare and implement conservation actions plans for priority Critically Endangered and Endangered species 3.2 Identify climate impacts and develop and implement management plans in response to climate change impacts on priority Critically Endangered and Endangered species 3.3 Support assessments of high priority plant families to update national lists and the IUCN Red List and develop conservation action plans
4. Improve the enabling conditions for biodiversity conservation in countries with priority sites	4.1 Support the role of civil society organizations in policy dialogue and advocacy focused on government policies and practices that impact priority sites 4.2 Mainstream biodiversity conservation and ecosystem service values into development policies, projects, and plans by government and the private sector, with a focus on addressing major threats, such as unsustainable agriculture, mining, tourism and infrastructure development 4.3 Establish and strengthen sustainable financing mechanisms 4.4 Build stakeholder and constituency support for the conservation of priority sites and priority globally threatened species through targeted communication and information dissemination
5. Support Caribbean civil society to conserve biodiversity by building local, national and regional institutional capacity and fostering stakeholder collaboration	5.1 Strengthen CSOs' technical knowledge and skills to implement practical, applied biodiversity conservation actions through short-term training in topics that will advance implementation of projects that support CEPF priorities, based on a CSO training assessment and strategy 5.2 Strengthen the administrative, financial, fundraising and project management capacity of strategic CEPF civil society partners to implement biodiversity conservation programs and activities 5.3 Support local, national and regional information exchange, networking, mentorship, and coalition building among civil society organizations

Strategic Directions	CEPF Investment Priorities
6. Provide strategic leadership and effective coordination of CEPF investment through a Regional Implementation Team	6.1 Build a broad constituency of civil society groups working across institutional and political boundaries to strengthen the communication capacity of local civil society organizations in support of their mission and to build public awareness on the importance of conservation outcomes

Strategic Direction 1. Improve the protection and management of 33 priority sites for long-term sustainability

Important gains in improving KBA viability, protection and management were made during the initial phase of CEPF investment in the hotspot, through strengthened legal protection for eight KBAs and strengthened management of 12 KBAs (see Section 3.3). There remains more to be done to strengthen and consolidate KBA management, however, particularly in the face of a changing climate and pressures from economic use.

CEPF has prioritized 33 KBAs for direct, on-site conservation support. Seven (21 percent) of these sites benefitted from the preparation of management or conservation action plans during the initial investment phase.[61] In addition, three of them were brought under new or increased protection, either in whole or in part, during the initial phase.[62]

Although the overall level of formal protection across the KBAs prioritized for investment during the next phase is high, at 91 percent, 10 priority sites have no or minimal legal protection.

Strategic Direction 1 builds on the previous investment in the Caribbean islands by helping to fill remaining gaps in legal protection and strengthen management frameworks for some of the hotspot's most biologically important sites. Particular emphasis is placed on ensuring the long-term social and institutional sustainability of management interventions through participatory governance, and on developing technical capacity of civil society to carry out management interventions. Strategic Direction 1 will be implemented through five site-level investment priorities. The sites that are eligible for investment under this strategic direction are listed in Table 13.1

Investment Priority 1.1 Strengthen the legal protection of priority sites

Under this investment priority, CEPF will support civil society efforts to advance the technical and legal processes to attain protected area status for priority sites that are currently unprotected or under-protected. Particular attention will be given to sites prioritized for protection in national strategies. CEPF will also support activities that lay the groundwork for non-traditional and flexible approaches to protection, including private protected areas, micro reserves, municipal reserves and community conservation areas.

[61] Under the initial phase of CEPF investment in the hotspot, management plans were developed for Parque Nacional Montaña La Humeadora, Parque Nacional Sierra de Bahoruco, Parque Nacional Dr. Juan Bautista Pérez (Valle Nuevo), Refugio de Vida Silvestre and Monumento Natural Miguel Domingo Fuerte (Bahoruco Oriental) in the Dominican Republic. Two sub-area management plans were developed for sections of Portland Bight Protected Area in Jamaica, along with stakeholder conservation action plans for Catadupa and Dolphin Head KBAs.

[62] The initial phase of CEPF investment supported efforts towards the declaration of Aire Protégée de Ressources Naturelles Gérées des Trois Baies and Parc National Grand Bois in Haiti, as well as Área de Conservación Municipal Rio de las Damas in the Sierra de Baharuco in the Dominican Republic.

Investment Priority 1.2 Prepare and implement participatory management plans that support broad stakeholder collaboration

CEPF will support civil society efforts to prepare or update management plans for priority sites. Priority will be given to the development of plans that involve local communities and anticipate a role for CSOs and communities in implementation, for example through co-management arrangements. CEPF will also support efforts to undertake or complete legislative process aligned with management plans, such as the preparation of regulations or zoning plans. These plans should address gender equity and promote the equitable participation of men and women.

For priority sites that already have management plans, CEPF will support implementation of high priority strategies and actions, with a particular focus on interventions that improve management effectiveness and long-term sustainability, and complement other planks of the CEPF investment strategy. Development of capacities and mechanisms for shared governance of protected areas to advance conservation, sustainable livelihoods and stakeholder rights will also be eligible for CEPF support, for example through co-management or community-based management regimes. CEPF will also support efforts to improve enforcement of existing regulations. Priority will be given to initiatives that ensure the full and effective participation of stakeholders and include mechanisms for the equitable sharing of economic and socio-cultural costs, benefits and impacts arising from the establishment and management of protected areas. Of particular interest are initiatives that open the way for new types of participatory governance arrangements. With any of these investments, CEPF grantees will be expected to monitor and assess the impact of management interventions to identify changes and trends over time and measure progress towards management goals and adapt management accordingly.

Where necessary to guide conservation planning and action, CEPF will support CSO efforts to fill critical gaps in knowledge and information, including through highly targeted field surveys of sites and selected species, baseline monitoring assessments, and the preparation of community assessments or socioeconomic surveys.

Investment Priority 1.3 Assess climate change impacts and integrate climate change adaptation into management plans and their implementation responses to protect ecosystem functions and build resilience

Given the hotspot's vulnerability to climate change and variability, there is a strong case for supporting management interventions that both build climate resilience and remove or reduce non-climate stressors and land-use pressures. By providing services such as carbon sequestration, flood protection, shoreline stabilization and soil erosion control, natural ecosystems are important climate change buffers. In addition to being a vital defense against some of the most extreme climate impacts and providing important services for disaster risk reduction, healthy ecosystems are also critical to sustaining ecosystem-based livelihoods. There is an urgent need to ascertain climate impacts on biodiversity, especially globally threatened species, and use this information to guide resilience and adaptation strategies. This investment priority will facilitate updating and retrofitting existing management plans and implementation activities so that they integrate climate change responses.

In particular, CEPF will support civil society efforts to update and revise existing management plans to include climate change responses, investigate climate/ecosystem interactions and develop and test management responses (with a focus on maintaining habitats for priority species), and leverage climate change funding.

Investment Priority 1.4 Eradicate, control or prevent further spread of invasive plants and animals that are affecting globally threatened species populations at priority sites.

IAS management is a proven means of protecting native species on islands. IAS continue to be among the most urgent threats to many of the hotspot's 33 priority sites. This threat is further intensified by the impacts of climate change, which may lead to changes in dominant species in ecosystems and the emergence of new invasive species or invasive pathways. The control and eradication of IAS require a well-planned and coordinated response.

Under this investment priority, CEPF will support civil society efforts to undertake coordinated planning and action to confront threats from IAS at the most affected sites, particularly through partnerships that build local civil society IAS capacity and/or leverage resources for ongoing IAS management. Initiatives that promote formal and informal networking, information sharing, and capacity building among CSOs, scientists and government institutions will also be eligible for support. Preference will be given to initiatives that eradicate (and prevent reintroduction) of IAS, because these have more limited requirements for additional funding beyond the project period. Control efforts will only be supported where there is a clear plan for financial sustainability after the end of CEPF support.

Investment Priority 1.5 Update the KBA analysis to fill critical conservation planning data gaps in Barbados and Haiti

Critical data gaps hindered the identification and updating of a small number of KBAs in Barbados and Haiti that were priorities during the initial phase of CEPF investment. Recognizing the importance of KBAs as a tool for conservation planning, CEPF will support the compilation and analysis of data to complete the KBA assessment process for the three sites in Table 13.2.

Scotland District KBA in Barbados has been found to be highly fragmented, requiring the redefinition of KBA boundaries to better reflect the ranges of threatened and irreplaceable taxa. The smaller units within Scotland District could not be assessed against the new KBA standard during the CEPF re-profiling process. CEPF will therefore support KBA definition efforts within this site. CEPF will also support a national KBA identification process in Haiti, focusing on Massif de la Hotte and Massif de la Selle. This process is expected to contribute positively to the conservation landscape in the country, as well as binational efforts with the Dominican Republic. National efforts are underway to expand the system of protected areas in Haiti, which is expected to have synergies with a KBA identification process.

Under this investment priority, CEPF will support desk-research-driven data gathering and assessment processes with relevant experts and stakeholders leading to a formal assessment by the KBA Partnership Secretariat. CEPF does not anticipate funding extensive field research under this investment priority but, where the need for limited additional field research is justified, it will provide such support. CEPF will require co-financing for sites where extensive field work is needed.

Strategic Direction 2. Increase landscape-level connectivity and ecosystem resilience in seven priority corridors

Work at the corridor level offers the advantage of scale to maintain the functionality of vital ecosystem services. Pockets of protection do not necessarily mitigate against pressures in buffer zones, particularly those pressures that are related to human activity. Landscape-level approaches are suited to the small islands of the Caribbean with their limited land area and strong land-use competition. There were robust conservation outcomes at the landscape-level during the initial phase of CEPF investment, and many of the conditions and opportunities that were in place then remain. These opportunities include initiatives

at the municipal level, particularly in the Dominican Republic and Haiti, as well as other ongoing land-use planning and plan implementation processes that are taking place in hotspot countries, such as the Local Sustainable Development Plans in Jamaica. Stakeholders in Haiti consulted as part of the preparation of this ecosystem profile recommended that land-use planning in the corridors continues to be a high priority. Climate change adds another layer of urgency to ensuring connectivity and ecosystem resilience in corridors. Promoting sustainable livelihoods also remains a key priority. The corridors that are eligible for investment under this strategic direction are listed in Table 13.3.

Investment Priority 2.1 Prepare and support implementation of participatory local and corridor-scale land-use and watershed management plans to guide future development and conservation efforts

Poor land-use planning and inappropriate agricultural and tourism development continue to contribute to environmental degradation in CEPF-eligible countries. CEPF will build on its landscape-level work under its initial investment, and will continue to support the planning and adoption of local and corridor-level land-use plans that create consensus by stakeholders on a long-term vision for conservation and development.

CEPF will support land-use zoning and local planning processes, including the creation of legal mechanisms, such as ordinances, that integrate conservation values. CEPF will also support preparation of integrated management plans, such as catchment management plans, as well as CSO-led implementation of the priority actions set out in these plans. Consideration will be given to initiatives that target private land owners, including for the expansion of landowner incentive programs where they exist, or the development of such schemes through local or national government frameworks.

Investment Priority 2.2 Support sustainable livelihoods in agriculture, fisheries, forestry and nature tourism that enhance ecosystem resilience and landscape-level connectivity and deliver gender-equitable benefits, in order to maintain the functionality of priority sites

CEPF will continue to support innovative efforts to involve the private sector and local communities that demonstrate links between conservation and sound development. CEPF recognizes the importance of incentivizing local communities to participate in conservation programs and ensuring that tangible economic benefits that can be sustained into the long term. CEPF will support local communities in and around priority corridors to conceive, develop and implement ecologically sustainable and economically viable livelihood projects. Particular attention will be paid to scaling up ecotourism, sustainable agriculture and fisheries initiatives to play a meaningful role in threat amelioration, and the use of payment for ecosystem services schemes. For example, CEPF may support the development of conservation-based enterprises that show promise of generating environmentally sustainable sources of income for communities that otherwise could be agents of environmental degradation, such as nature-based tourism, conservation coffee and cacao, and sustainable fisheries. Identification and sharing of best practices for the development and scaling up of sustainable livelihoods initiatives will also be eligible for support, as will promotion of greater collaboration in vital areas, such as marketing.

Projects supported under this investment priority will be expected to demonstrate direct, tangible benefits for biodiversity and communities, and ensure there are mechanisms in place for ongoing income generation and long-term sustainability. Cofunding and leveraging additional resources will be strongly encouraged. Projects that take advantage of knowledge generated through the Satoyama Initiative and that produce case studies suitable for sharing through the International Partnership for the Satoyama Initiative will be particularly encouraged.

Investment Priority 2.3 Promote the adoption and scaling up of conservation best practices in those enterprises compatible with conservation to promote connectivity and ecosystem services in the corridors

CEPF will support civil society partners that work directly with those strategic companies and industries and their associations that have a presence in the priority corridors and that are committed to developing and fulfilling guidelines, standards, and policies that include biodiversity objectives. Areas of focus may include agriculture, farming, forestry and tourism. CEPF will fund efforts to raise awareness and understanding of corporate leaders and technical staff of effective approaches to incorporating biodiversity conservation considerations and opportunities. Facilitating dialogue, disseminating successful approaches and best practices, and helping to operationalize improved environmental practices will also be eligible for support, as will provision of technical assistance to integrate biodiversity conservation into business and production practices, strategies and policies.

Strategic Direction 3. Safeguard priority Critically Endangered and Endangered species

In the Caribbean islands context, effective management at the site level is the most important strategy to conserve species. However, some Critically Endangered and Endangered species (and species groups) require targeted assistance to ensure their long-term survival. The Caribbean is one of the top five hotspots in terms of endemic species, accounting for 2.6 percent of the world's 300,000 plant species and 3.5 percent of the world's 27,000 vertebrates.

The national consultations identified a need for a species-specific strategic direction, in recognition of the limited funding availability for species conservation in the hotspot. Species conservation is hampered by the poor data quality. Baseline data are often outdated or non-existent, and, where data do exist, they are sometimes located in databases not readily available to conservationists and protected area managers. The development and implementation of species conservation plans will require collaboration and information sharing among CSOs, scientists and government institutions, and coordination through formal or informal networks.

CEPF will target funding for conservation planning and action for the 138 priority species (75 animals and 63 plants) listed in Appendix 9. These species are listed on the IUCN Global Red List as Critically Endangered or Endangered, and occur either in one of 33 priority sites or in countries without a priority site that harbor island-endemic species (i.e., Barbados and Grenada). This strategic direction will be implemented through three investment priorities focused on formulating and implementing targeted action plans, addressing the threat of climate change, and filling important information and capacity gaps. CEPF strongly encourages grantees supported under this strategic direction to leverage additional financing.

Investment Priority 3.1 Prepare and implement conservation action plans for priority Critically Endangered and Endangered species

Under this investment priority, CEPF will support preparation and implementation of species conservation action plans for the globally threatened species listed in Appendix 9. CEPF will fund conservation action plans for individual species, as well as for families with a high proportion of Critically Endangered and Endangered species, such as in the case of amphibians. Priority will be given to conservation action plans that have been developed as part of an overall management strategy for an area. Strong emphasis will be placed on leveraging additional funding.

Investment Priority 3.2 Identify climate impacts and develop and implement management plans in response to climate change impacts on priority Critically Endangered and Endangered species

Climate change is having impacts at the species level but, as participants in the ecosystem profiling consultations highlighted, their conservation efforts are challenged by an incomplete understanding of the full scope of how a changing climate is affecting species. Under this investment priority, CEPF will support efforts by conservation planners to address the challenges faced by species in the context of a rapidly changing climate. Priority will be given to initiatives that are being implemented in the context of a broader management strategy. This investment priority will facilitate updating and retrofitting existing species management plans and programs, so that they integrate climate change responses.

Investment Priority 3.3 Support assessment of high priority plant families to update the IUCN Red List and develop conservation action plans

The hotspot is rich in plant species. Plants are one of the most diverse higher taxa in the region, with close to 11,000 species, of which about 8,000 are endemic (this figure is greater than all of the hotspot's vertebrates combined). However, only around 10 percent of the plant species have been assessed at the global level against the IUCN Red List Categories and Criteria. Understanding the level of threat to plant species is critical for ensuring the long-term conservation of Caribbean biodiversity. Such a task is, however, beyond the anticipated budget of the new phase of CEPF investment. Hence, the investment strategy identifies seven plant families for CEPF support, based on their elevated level of endemism and suspected high level of threat: Cactaceae (cacti); Magnoliaceae (magnolias); Melastomataceae (melastomes); Orchidaceae (orchids); Palmae (palms); Cupressaceae (cypresses); and Pinaceae (pines). This investment priority targets these families.

CEPF will support collection of existing information relevant to the conservation status of the island endemic species within these families, expert assessments, preparation of global Red List assessments, and conservation action plans with recommended conservation measures at the level of family. Due to resource limitations, CEPF will expect co-funding and will not provide funding to implement conservation action plans.

Strategic Direction 4. Improve the enabling conditions for biodiversity conservation in countries with priority sites

Complex social, political, cultural and economic interactions and conditions combine to influence conservation management interventions and results in the hotspot. These can impede or facilitate conservation; indeed, the absence of an enabling environment can accelerate biodiversity loss. In addition to sound data-driven conservation actions, it is important to take actions simultaneously to improve the enabling environment for conservation. These include ensuring that:

- The policy framework and institutional conditions support conservation and human well-being.
- Decision making about the use and management of natural resources is fair, accountable and transparent.
- People have the knowledge and skills to participate in debates about conservation and natural resource use and make informed decisions.
- A strong constituency for conservation action exists, not only at the local level but also among wider social and policy audiences, in order to champion conservation action.
- There are sources of sustainable funding to carry out conservation priorities.

Stakeholders consulted during the ecosystem profiling highlighted the need to overcome critical barriers to conservation, including gaps in national policy frameworks, and weaknesses in governance processes. They also emphasized the importance of engendering knowledge and awareness among communities and other stakeholders, given the strong links between community/stakeholder benefit and buy-in, and effective management outcomes.

Strategic Direction 4 will support actions in those countries where the priority KBAs and conservation corridors are located. CEPF will support civil society efforts to play an effective role in monitoring and shaping policy, governance and decision-making processes. CEPF will also support efforts to build informed constituencies for conservation. Activities supported under this strategic direction will have a demonstrable link to conservation targets in priority KBAs.

Investment Priority 4.1 Support the role of civil society organizations in policy dialogue and advocacy focused on government policies and practices that impact priority sites

Two of the important roles of civil society in biodiversity conservation are advising policy- and decision-makers on the needs and priorities of local people and influencing policy frameworks and policy development processes. Through this investment priority, CEPF will support efforts to increase civil society capacity to engage in conservation-related decision-making processes and policy dialogue, including through policy analysis. CEPF will also support efforts to strengthen protected area governance through the participation of local communities and user groups in management decision-making processes.

Investment Priority 4.2 Mainstream biodiversity conservation and ecosystem service values into development policies, projects, and plans by government and the private sector, with a focus on addressing major threats, such as unsustainable agriculture, mining, tourism and infrastructure development

CEPF will continue to support CSOs to mainstream biodiversity conservation and ecosystem service values into regional and national policies and programs, and private sector plans, to promote a development path that is compatible with conservation. Grants will promote favorable policy frameworks, where civil society can make the most difference and where the needs are the greatest in tourism, mining, agricultural development and climate change. Where necessary to ensure a strong analytical basis to achieve this investment priority, CEPF will fund assessments and consultations to identify priorities and opportunities for action, followed by support to develop and implement strategies to strengthen selected policies, projects and plans. Grants will build awareness among decision makers of the substantial and cost-effective benefits that biodiversity conservation and provision of vital ecosystems offer for economic development, human well-being, and climate change mitigation and adaption. Targeted economic analysis will demonstrate the costs and benefits derived from the provision of ecosystem services and the development of ecosystem service markets. The results of these and other relevant initiatives will be used by civil society to inform policy and program development.

As part of its approach to climate change, CEPF will seek to integrate biodiversity conservation and ecosystem service values as essential pillars in national and regional climate change policies and programs.

Investment Priority 4.3 Establish and strengthen sustainable financing mechanisms

Financing for protected area management continues to be insufficient, even in countries where national conservation funds are already operational (for example, the Environmental Fund of Jamaica, and Fondo MARENA in the Dominican Republic), because demand for funding exceeds supply. CEPF will continue

to support NGO and private sector approaches to secure sustainable financing and create new financing flows through such measures as user fees and payment for ecosystem services. CEPF encourages the use of innovative market-based incentives, like voluntary markets for carbon offsets. CEPF funding cannot be used to capitalize trust funds but can be used to support the creation of enabling conditions for the capitalization of such funds from other sources, as well as for designing sustainable financing mechanisms.

At the site level, CEPF will work with the private sector to help plan and implement demonstration projects for which co-financing is available and where there is potential to scale up initiatives. CEPF will facilitate civil society, communities and landowners to take advantage of opportunities for sustainably sourced products and other initiatives, based on sustainable resource management to benefit biodiversity.

Investment Priority 4.4 Build stakeholder and constituency support for the conservation of priority sites and priority globally threatened species through communication and information dissemination

Consultation stakeholders emphasized the importance of putting a greater effort into communication and information dissemination in support of conservation as part of a strategy to build a constituency for conservation among decision-makers, key influencers and opinion shapers, and foster community involvement in conservation action. CEPF will support efforts to develop and implement communication strategies that support KBA management and corridor-level interventions. These strategies may use scientific data and information packaged in print and electronic formats to stimulate conservation action for priority sites and priority globally threatened species among stakeholders. CEPF may also support awareness events and activities, to raise the public profile of sites, species, and issues in ways appropriate to constructive engagement with government planning. This might include media exposure and organizing visits for influential figures.

Projects supported under this investment priority must demonstrate a linkage between communication outputs and conservation outcomes. Preference will be given to communication initiatives that complement other elements of the CEPF investment strategy. Considering the limited impact of many reports and toolkits, whether produced in hard copy or electronic format, CEPF will give particular preference to projects that propose alternative, innovative communication products.

Strategic Direction 5. Support Caribbean civil society to conserve biodiversity by building local, national and regional institutional capacity and fostering stakeholder collaboration

Caribbean partners have identified limited civil society capacity and collaboration as obstacles to the achievement of conservation in the Caribbean Islands Hotspot. Many of the Caribbean's environmental and community groups are still often working in relative isolation from each other, with weak networks, due to competition among groups for limited funding, and a project-centered approach to much of their work. Several CSOs are challenged by inadequate funding to support core needs, such as salaries, and administrative and operational expenses. In the smaller islands, CSOs are unable to maintain staff and memberships large enough to retain expertise in needed disciplines. Despite past investment in NGO capacity building in the Caribbean, there are still technical and institutional capacity gaps, suggesting that new approaches are needed. This strategic direction proposes to strengthen Caribbean CSOs towards ensuring that there are sustainable and self-reliant organizations engaged in a range of conservation activities at various levels (regional, national, local). During the initial investment phase, capacity building activities were carried out in parallel to grant implementation, with positive results; this

approach will be used during the new phase. CEPF funds will not simply be directed towards selected staff and their capacity needs but, rather, will be geared towards a holistic, institution-wide approach to institutional strengthening that will lead to self-reliance and sustainability. This, in turn, will assist in achievement and sustainability of the other investment priorities in this strategy.

At the start of the investment, CEPF will commission a CSO training needs assessment and capacity building strategy to establish a capacity baseline, guide CEPF-funded training and ensure that training activities that are supported meet strategic needs that contribute to sustainability. This needs assessment will include a review of the impacts of capacity building activities during the initial CEPF investment phase.

Investment Priority 5.1 Strengthen CSOs' technical knowledge and skills to implement practical, applied biodiversity conservation actions through short-term training in topics that will advance implementation of projects that support CEPF priorities, based on a CSO training assessment and strategy

CEPF will focus on building capacity that helps sustain results carried out under the other strategic directions. This will include but not be limited to capacity development in:

- Climate change impact assessment.
- Invasive species management.
- Tools and methods for conducting biodiversity assessments and evaluations.
- Practical and replicable techniques for monitoring species, habitats and ecosystems.
- Assessment of the impact of management measures.
- Communicating biodiversity values.

Through this investment priority, CEPF will support participation in short-term training courses, exchanges, peer learning and mentorship. Support under this investment priority will dovetail with project implementation and will be provided for activities that are linked to a conservation goal. In keeping with global CEPF policy, support will not include funding for academic studies. At the start of the new phase, CEPF will commission a capacity-building needs assessment and strategy.

Investment Priority 5.2 Strengthen the administrative, financial, fundraising and project management capacity of civil society partners to implement biodiversity conservation programs and activities

CEPF will support efforts aimed at strengthening the institutional capacity of those Caribbean conservation organizations that have an important role to play in achieving CEPF's strategic directions, by providing funds for comprehensive institutional-capacity-building packages. These packages will aim to build the institutional and technical capacity required to undertake biodiversity conservation, including technical and financial skills to develop and manage community enterprises. Priority will be given to supporting fundraising and sustainable financing capacity.

Investment Priority 5.3 Support local, national and regional information exchange, networking, mentorship and coalition building among civil society organizations

By nature of geography, many Caribbean island states are small and isolated. These islands have small populations, and, consequently, CSOs often have difficulty finding staff with the requisite skills and experience to conduct conservation activities at the appropriate professional level. Furthermore, civil society conservation efforts have lacked robust collaborative and regional approaches, which are imperative given the small and under-capacitated islands in this hotspot. During the initial investment

phase, CEPF facilitated peer-to-peer exchanges at the national and regional levels, to support knowledge-sharing and provide a space for genuine relationship building. This investment priority will contribute to strengthened collaboration and coordination of conservation within the hotspot, and engender a true network spirit among participating organizations. CEPF investments will focus on new approaches (e.g., informal and formal networks and alliances, collaborative action and learning, and the use of social media, apps and online technology) to build capacity and cooperation in strategic areas of importance, including tourism and mining development, invasive species, climate change, site-based conservation, and policy and legislation. CEPF funds will support projects that stimulate learning and catalyze conservation action by civil society actors and will focus on best practices relevant to the Caribbean and the specific barriers and challenges confronting CSOs.

Strategic Direction 6. Provide strategic leadership and effective coordination of CEPF investment through a Regional Implementation Team

CEPF will support a Regional Implementation Team (RIT) to convert the plans in the ecosystem profile into a cohesive portfolio of grants that exceeds in impact the sum of its parts. Each RIT will consist of one or more CSOs active in conservation in the region. For example, a team could be a partnership of civil society groups or it could be a lead organization with a formal plan to engage others in overseeing implementation, such as through an inclusive advisory committee.

The RIT will operate in a transparent and open manner, consistent with the CEPF mission and all provisions of the CEPF Operational Manual. Organizations that are members of the RIT will not be eligible to apply for other CEPF grants within the same hotspot. Applications from formal affiliates of those organizations that have an independently operating board of directors will be accepted, subject to additional external review.

Investment Priority 6.1 Build a broad constituency of civil society groups working across institutional and political boundaries to strengthen the communication capacity of local civil society organizations in support of their mission and to build public awareness on the importance of conservation outcomes

The RIT will provide strategic leadership and local knowledge to build a broad constituency of civil society groups working across institutional and political boundaries toward achieving the conservation goals described in the ecosystem profile. The team's major functions and specific activities will be based on approved terms of reference. Major functions of the team will be to:

- Act as an extension service to assist civil society groups in designing, implementing, and replicating successful conservation activities.
- Review all grant applications and manage external reviews with technical experts and advisory committees.
- Award grants of up to $20,000 and decide jointly with the CEPF Secretariat on all other applications.
- Lead the monitoring and evaluation of individual projects using standard tools, site visits, and meetings with grantees, and assist the CEPF Secretariat in portfolio-level monitoring and evaluation.
- Widely communicate CEPF objectives, opportunities to apply for grants, lessons learned, and results.

14. LOGICAL FRAMEWORK AND RISK ANALYSIS

Table 14.1 Logical Framework for CEPF Investment in the Caribbean Islands Biodiversity Hotspot

Global Objective	Goals and Indicators	Means of Verification	Important Assumptions
Support the conservation of biodiversity within the global hotspots by engaging and strengthening the capacity of civil society	***Biodiversity*** Goal: Improve the status of globally significant biodiversity in critical ecosystems within hotspots Indicators: • Number of globally threatened species benefiting from conservation action. • Number of hectares of Key Biodiversity Areas with improved management. • Number of hectares of protected areas created and/or expanded. • Number of hectares of production landscapes with strengthened management of biodiversity. • Number of protected areas with improved management. ***Civil Society*** Goal: Strengthen the capacity of civil society to be effective as environmental stewards and advocates for the conservation of globally significant biodiversity. Indicators: • Number of CEPF grantees with improved organizational capacity. • Number of CEPF grantees with improved understanding of and commitment to gender issues. • Number of networks and partnerships that have been created and/or strengthened. ***Human Well-being*** Goal: Improve the well-being of people living in and dependent on critical ecosystems within hotspots. Indicators: • Number of people receiving structured training. • Number of people receiving non-cash benefits other than structured training. • Number of people receiving cash benefits.	Annual global impact report Grantee final reports Protected Areas Tracking Tool (SP1 METT) Civil Society Tracking Tool Gender Tracking Tool CEPF project database GIS remote sensing data	The main drivers of biodiversity loss operate at local, national and regional scales and can be influenced by conservation interventions at these different scales. Civil society organizations are present and willing to engage in biodiversity conservation, to partner with unfamiliar actors from other sectors, and to adopt innovative approaches. The capacity of civil society organizations can be augmented and translated into more effective local conservation movements. Short-term grant funding can make significant contributions to overcoming the resource constraints facing civil society organizations. Increasing the capacity and credibility of local civil society organizations is likely to open political space for these organizations as they become recognized as trusted advisors (rather than causing them to be viewed as threats to vested interests). Some government and private sector/corporate actors are receptive to innovative conservation models demonstrated by CEPF

	• Number of projects promoting nature-based solutions to combat climate change. • Amount of CO_2e sequestered in CEPF-supported natural habitats. ***Enabling Conditions for Conservation*** <u>Goal:</u> Establish the conditions needed for the conservation of globally significant biodiversity. <u>Indicators:</u> • Number of laws, regulations, and policies with conservation provisions that have been enacted or amended. • Number of sustainable financing mechanisms that are delivering funds for conservation. • Number of companies that adopt biodiversity-friendly practices.		projects and have incentives to adopt these for wider replication. National academic institutions produce graduates with the skills and perspective to respond to local conservation challenges by working with or within civil society organizations. Raised local public awareness that results from the participation of these organizations in conservation issues has the potential to change attitudes and, ultimately, behavior towards the consumption of energy and natural resources.
Portfolio Objective	**Targets**	**Means of Verification**	**Important Assumptions**
Engage civil society in the conservation of globally threatened biodiversity through targeted investments with maximum impact on the highest conservation and ecosystem services priorities.	Thirty-three KBAs covering 1,174,380 hectares have sustainable management plans in place. At least 40,000 hectares of the 2,345,311 hectares within production landscapes are under improved management for biodiversity conservation and ecosystem services. At least five local development plans, projects or policies mainstream biodiversity and ecosystem services, with a focus on tourism, mining, unsustainable agriculture and infrastructure development.	Grantee and RIT progress reports Annual portfolio overview reports; portfolio mid-term and final assessment Protected Areas Tracking Tool (SP1 METT)	The CEPF grants portfolio will effectively guide and coordinate conservation action in the Caribbean Islands Hotspot. Stakeholder interest remains stable or increases with respect to working in partnership with CSOs to achieve the ecosystem profile conservation outcomes. Regulatory and institutional environment for conservation, environmental protection, and civil society engagement remains stable or improves. Political stability will facilitate the implementation of conservation initiatives and improve the operating environment for civil society. Investments by other donors will support complementary activities that reduce threats to priority sites and species.

Intermediate Outcomes	Intermediate Indicators	Means of Verification	Important Assumptions
Outcome 1. Improve the protection and management of 33 priority sites for long-term sustainability. **$4,500,000.00**	At least 75 percent (678,044 hectares) of the 19 existing protected areas in the priority sites, totaling 904,059 hectares experience, on average, a 15 percent improvement on the Protected Area Management Effectiveness Tracking Tool. At least seven (50 percent) of the 14 under-protected priority KBAs brought under new or strengthened protection status. Climate change resilience integrated into 100 percent of management plans developed or updated with CEPF support. At least 10 participatory or collaborative management arrangements developed or strengthened. Three data-deficient sites assessed as KBAs under the 2016 Global KBA Standard.	Grantee and RIT progress reports CEPF Secretariat supervision mission reports Protected Area Management Effectiveness Tracking Tool (SP1 METT) Formal legal declarations or community agreements designating new protected areas Management plans and reports on management activities Human wellbeing monitoring reports KBA Global Partnership Database	Government agencies are supportive of civil society efforts to conserve KBAs and corridors. Local communities are sufficiently organized, have enough capacity and are willing to participate in these activities. CSOs have adequate capacity and are interested in engaging in conservation and management of KBAs and corridors.
Outcome 2. Increase landscape-level connectivity and ecosystem resilience in seven priority corridors. **$1,000,000.00**	At least five participatory local land-use or catchment management plans developed or strengthened to improve ecosystem services and connectivity within conservation corridors. Climate change resilience integrated into 100 percent of landscape-level plans developed. At least three conservation-based enterprises (e.g. nature-based tourism, conservation coffee and cacao, sustainable fisheries, etc.) developed in communities within the priority conservation corridors. Three businesses and/or their associations influenced to better incorporate biodiversity conservation into business and production practices, strategies and policies.	Grantee and RIT progress reports CEPF Secretariat supervision mission reports Official land-use and development plans and policies covering the priority corridors. Integrated management plans Private sector reports	Decision-makers are receptive and sympathetic to conservation and sustainable development of the priority KBAs and corridors. Private companies in key natural resource sectors appreciate the business case for better environmental and social practices.

Intermediate Outcomes	Intermediate Indicators	Means of Verification	Important Assumptions
Outcome 3. Safeguard priority Critically Endangered and Endangered species. **$1,000,000.00**	Conservation plans developed and implemented for at least 20 priority Critically Endangered and Endangered species. At least five species or species-group management plans and programs updated to integrate climate change responses. IUCN Red List updated with assessments of at least three priority plant families At least 50 CEPF priority species benefit from conservation actions through CEPF-supported management plans and their implementation.	Grantee and RIT progress reports CEPF Secretariat supervision mission reports IUCN Red List species accounts Conservation action plans	Adequate capacity to implement species-focused conservation exists among civil society or can be built. Governments and international donors remain committed to species conservation and are able to provide financial support for long-term programs.
Outcome 4. Improve the enabling conditions for biodiversity conservation in countries with priority sites. **$1,000,000.00**	At least 10 local, national and regional policies, projects or plans incorporate biodiversity, climate change and ecosystem services in the agricultural, mining, tourism and infrastructural development sectors. Three small-scale climate change demonstration projects in priority sites and conservation corridors planned and implemented to illustrate the benefits of biodiversity conservation and ecosystem services for adaption and mitigation. Sustainable financing mechanisms in place for at least two CEPF priority sites. Three private sector demonstration projects planned and implemented in support of biodiversity conservation. Awareness of, and support for, conservation issues increased among stakeholders in least 10 priority sites.	Grantee and RIT progress reports and site visits National and regional policy documents Public-private partnership agreements/MOUs/ contracts	Local, national and regional policy environments are supportive of the integration of biodiversity and development and a focus on priority KBAs. Targeted decision-makers are in a position to influence select policies and projects. Capacity is sufficient and can be built to enable the strategic, targeted “informing” of decision-makers. National legislation includes or allows for the establishment of sustainable financing mechanisms. Private companies in key natural resource sectors appreciate the business case for better environmental and social practices. CSOs have sufficient capacity to engage in advocacy at the national and regional decision-making level.

Intermediate Outcomes	Intermediate Indicators	Means of Verification	Important Assumptions
Outcome 5. Support Caribbean civil society to conserve biodiversity by building local, national and regional institutional capacity and fostering stakeholder collaboration **$1,000,000.00**	At least 15 local CSOs demonstrate improved performance with gender mainstreaming (at least 10 percent increase). At least 20 local CSOs demonstrate improved organizational capacity (at least 10 percent increase). At least 20 civil society networks and alliances enable collective responses to priority and emerging threats. Two innovative financing mechanisms for civil society sustainable funding developed.	Grantee and RIT progress reports and site visits CEPF Secretariat supervision mission reports CEPF gender tracking tool CEPF civil society organizational capacity tracking tool	The operating environment for civil society will remain constant or improve across the hotspot. Key capacity limitations of CSOs can be addressed through grant support. Civil society actors are able to work collaboratively to respond to conservation challenges.
Outcome 6. Provide strategic leadership and effective coordination of CEPF investment through a Regional Implementation Team **$1,500,000**	At least 50 CSOs, including at least 40 local organizations, actively participate in conservation actions guided by the ecosystem profile. At least 75 percent of local CSOs receiving CEPF grants are found to have met or exceeded expectations regarding programmatic performance. At least 30 CSOs supported by CEPF secure follow-up funding to promote the sustainability of their CEPF grants. At least 2 participatory assessments are undertaken and impacts and best practices from CEPF grants are documented. At least 1 independent evaluation is undertaken to document lessons learned by the RIT.	RIT progress reports CEPF Secretariat supervision missions and monitoring Post-project evaluation forms	Qualified organizations will apply to serve as the RIT in line with the approved terms of reference and the ecosystem profile. The CEPF call for proposals will elicit appropriate proposals that advance the goals of the ecosystem profile. CSOs will collaborate with each other, government agencies, and private sector actors in a coordinated regional conservation program in line with the ecosystem profile.
Total Budget:	**$10,000,000**		

Table 14.2 Risk Analysis

Risk	Likelihood and Severity	Mitigation Measures	Risk Owners
Program objective: Absorptive capacity of the region's CSOs makes it difficult to increase the average size of CEPF grants.	**Likelihood**: Low **Severity**: Medium Limited ability to award larger (and longer-duration) grants would restrict CEPF's ability to deliver enduring conservation impacts, especially where complex challenges need to be overcome to achieve conservation outcomes.	**Program level:** Selection of priority sites takes into account the presence, interest, and capacity of local CSOs. The RIT will monitor this during implementation and adapt its grantmaking approach accordingly. The institutional capacity of CSOs to design and implement complex projects will be strengthened under SD5, and as part of the capacity building role of the RIT. **Grant level:** The CEPF Secretariat and RIT will closely monitor and support grantees implementing larger and more ambitious projects, allowing early intervention in case problems arise.	CEPF Secretariat and RIT
Program objective: Devastating hurricanes or other natural disasters impede implementation in one or more country.	**Likelihood**: Medium **Severity**: High A devasting hurricane or other natural disaster (e.g., earthquake) could have a severe detrimental effect on the operational capacity of grantees and/or the RIT, through, for example, loss of project facilities, damage to natural ecosystems, disruption to communications, or diversion of attention towards immediate humanitarian needs.	**Program level:** Planning for grant-making across all eligible countries will allow implementation of the program as a whole to adapt to a natural disaster in one or more countries. Flexibility will be shown in the timing and focus of calls for proposals and disbursement of funds to grantees, to enable them to respond to changing situations. If necessary, permission to include an explicit strategic direction on disaster response will be requested from CEPF's donors (as was done following the 2010 Haiti earthquake). **Grant level:** The CEPF Secretariat and RIT will be responsive to requests from grantees to amend their grants to adapt to changing circumstances and respond to immediate humanitarian and subsequent recovery needs.	CEPF Secretariat and RIT
Outcome 1: Political or security situation prevents engagement of CSOs at priority sites.	**Likelihood:** Low **Severity**: High for concerned sites Site-based engagement of civil society is fundamental to CEPF's approach. If CSOs are unable to engage in conservation of specific sites, the logframe targets will not be met for those sites.	**Program level:** Multiple priority sites have been selected across multiple countries. This provides CEPF with multiple opportunities for engagement in the event of unforeseen political or security issues at specific sites. The logframe targets do not anticipate successful engagement at all priority sites. **Grant level:** The RIT will analyse feasibility of engagement, possible interventions, and viable applicants at the priority sites prior to release of each call for proposals. Where relevant, applicants will be asked to provide letters of support from the relevant government authorities to demonstrate their ability to engage in conservation of sites.	CEPF Secretariat and RIT

Risk	Likelihood and Severity	Mitigation Measures	Risk Owners
Outcome 2: Livelihood initiatives that seek CEPF support are not financially viable.	**Likelihood**: Medium **Severity**: High Creating financially viable and sustainable livelihood alternatives is inherently difficult, especially because some of the barriers to success (e.g. market demand, access to markets, access to credit, etc.) may be beyond the ability of CSOs to influence.	**Program level:** All applications for support under SD2 will be carefully appraised for financial viability. Where appropriate, smaller grants will be used to pilot approaches and develop proof of concept before scaling up with larger grants. **Grant level:** Applicants will be encouraged to incorporate financial analysis and business plans into project design. Grantees will be provided with capacity building support for sustainable enterprise development, to help initiatives become investable.	CEPF Secretariat and RIT
Outcome 3: Political or security situation prevents engagement of CSOs at the sites where priority species occur.	**Likelihood:** Low **Severity:** Medium The priority species in the Caribbean Islands Hotspot are, by definition, single-island endemics, meaning that, if the political or security situation prevents CSOs for working on a particular island, there will be no alternative options for field-based conservation action for the priority species found there.	**Program level:** A list of 138 priority species provides redundancy at the program level, allowing CEPF multiple opportunities for supporting species-conservation activities with the available funding for SD3. **Grant level:** For some species, there may be opportunities to take conservation action away from the field, such as Red List assessments, public awareness raising or engagement with public or private sector stakeholders.	CEPF Secretariat and RIT
Outcome 4: Public and private sector stakeholders decline to engage in discussions to mainstream biodiversity because political or economic demands.	**Likelihood:** Medium **Severity:** High CSOs have limited leverage to force public and private sector stakeholders to engage in discussions. These stakeholders may be reluctant to do so if CSOs challenge vested political and economic interests, or do not have credibility or high public profile in their eyes.	**Program level:** The RIT will be resourced and mandated to liaise closely with governments in CEPF-eligible countries, to ensure good alignment between CEPF investments and national priorities. Grant making under SD4 will be opportunistic, insofar that it will respond to opportunities for engagement with public and private sector stakeholders that present the greatest prospect of success. **Grant level:** Grants awarded under SD4 will be to CSOs with high capacity and established credibility with government and private sector.	CEPF Secretariat and RIT

Risk	Likelihood and Severity	Mitigation Measures	Risk Owners
Outcome 5: Capacity strengthening support does not result in stronger biodiversity conservation CSOs in the Caribbean.	**Likelihood**: Low **Severity**: High Inappropriate and ineffective capacity building support will result in CEPF falling short on a core element of its strategy, as well as impeding implementation of other elements of the strategy, which is predicated on a leading role for CSOs in delivery.	**Program level:** Investments in capacity building under SD5 will target current and potential grantees under other strategic directions, to support delivery of the strategy as a whole. To this end, the RIT will prepare a capacity building needs assessment and strategy during the first year of the investment phase, to ensure that capacity building targets priority organizations and needs. **Grant level:** Grantees identified as having priority capacity needs will receive a package of technical, financial and/or institutional capacity building in parallel to financial support through grants. This capacity building will be provided directly by the RIT and indirectly through grants to CSOs with a mandate and capability to build capacity in other organizations.	RIT and grantees delivering capacity building
Outcome 6: No suitable organizations are interested to serve as the RIT for the hotspot.	**Likelihood:** Low **Severity:** High The success of the program is highly dependent on the recruitment of an effective RIT with relevant skills and networks. A relatively small number of organizations have the necessary experience, organizational mandate and regional presence.	**Program level:** Any calls for proposals issued as part of the RIT recruitment process will be advertised widely so that suitable candidates are aware of the opportunity. Briefing calls will be organized, so that interested organizations are able to explore the opportunity directly with the CEPF Secretariat, and they will also be able to submit written questions.	CEPF Secretariat
Outcome 6: Potential deterioration in the administration of the portfolio because the funding envelope is almost double the size of that for the initial investment phase.	**Likelihood**: Low **Severity**: Low Although the requested spending authority for the new phase of CEPF investment in the hotspot is roughly double that for the initial phase, in real terms, the increase is much smaller, given inflation in prices in the region over the last 10 years.	**Program level:** Realistic logframe targets have been set, informed by actual performance during the initial phase. The CEPF Secretariat and RIT will carefully monitor the portfolio, including progress towards the targets, to ensure all targets are met. The average grant size will increase, in order that the total number of grants does not increase in proportion to the spending authority. In turn, this will minimize the additional administrative burden on the CEPF Secretariat and RIT.	CEPF Secretariat and RIT

15 SUSTAINABILITY

Sustainability is a multi-dimensional concept with interrelated environmental, financial, social and institutional elements that are all critical to achieving sustained conservation impact. The premise of the CEPF approach supports environmental sustainability by linking biodiversity conservation with ecosystems and the services they provide for human wellbeing. Environmental sustainability requires that sufficient economic resources are allocated to conservation and sustainable use and that an economic value is placed on ecosystems and the services they provide, so that they can 'compete' with other land uses. A constituency for conservation is also needed to assure environmental sustainability. Specifically, stakeholders, whether direct users of natural resources or beneficiaries of ecosystem services, "must derive *and* perceive benefits from conservation and sustainable use, and they must be able and willing to act when threats emerge" (USAID 2015). Furthermore, the organizations that work on conservation must themselves have the capacity, skills, and human and financial resources to carry out their roles.

With this in mind, the CEPF's reinvestment in the Caribbean Islands Hotspot will seek to support effective conservation actions by organizations with the skills and capacities to do so. It will also seek to improve the enabling environment for conservation, including the policy and legal framework, governance arrangements, financing opportunities, particularly from local sources, and the wider consistency for nature, conservation and ecosystem services. The new program represents both continuity and change for CEPF in the hotspot. Table 15.1 below maps each of the sustainability elements of the strategy against the strategic directions from the investment strategy.

Table 15.1 Sustainability and the CEPF Caribbean Strategic Directions

Sustainability Element	Supporting Strategic Directions
Environmental Resilience	SD1 Protection and management of priority sites SD2 Landscape-level connectivity and ecosystem resilience in priority corridors SD3 Safeguarding priority CR and EN species
Financial Sustainability	SD 4 Enabling conditions for biodiversity conservation
Social Sustainability	SD 2 Landscape-level connectivity and ecosystem resilience in priority corridors SD 4 Enabling conditions for biodiversity conservation
Civil Society Capacity	SD 5 Institutional capacity building and stakeholder collaboration

15.1 Environmental Resilience

The investment strategy aims to strengthen ecosystem functionality and build resilience through Strategic Directions 1 and 2. Within the Caribbean context, addressing climate change is an essential element of any effort to promote biodiversity conservation. The new strategy for the hotspot integrates climate change as a cross-cutting theme and, specifically, supports climate-change-focused actions through Strategic Directions 1, 2 and 3.

15.2 Financial Sustainability

CEPF funding fills gaps in those areas where essential activities are not being undertaken at the moment and complements larger funding support from multilateral and bilateral sources to government agencies in the region. The investment strategy actively promotes leveraging of resources and co-financing. The emergence of environmental trust funds in CEPF-eligible countries across the hotspot presents an important opportunity for CEPF as it seeks to support innovative financing mechanisms under Strategic Direction 4. The CEPF Secretariat and RIT will actively seek to build synergies between the CEPF investment strategy and other funding sources in the region.

15.3 Social Sustainability

With its focus on sustainable livelihoods, especially under Strategic Direction 2, the investment strategy attempts to ensure that direct users of natural resources or beneficiaries derive benefits as part of the conservation process. The elements of the strategy that address natural resource governance (Strategic Direction 4) and promote integrated multi-stakeholder approaches and cooperation between civil society, governments and the private sector (Strategic Directions 1, 2 and 4) reflect an appreciation of the need for efforts to be grounded in communities and owned by stakeholders. The inclusion of gender as a cross-cutting theme further supports social equity. Additionally, the strategy explicitly seeks to build a constituency for conservation and increase understanding of the social and economic value of ecosystems and their services, through Strategic Direction 4.

15.4 Civil Society Capacity

The new phase of CEPF investment in the Caribbean Islands Hotspot will play a major role in increasing the capacity of NGOs and other CSOs based in the region. Strengthening of civil society is a focus across all the strategic directions but is made explicit in Strategic Direction 5. The CEPF program will use a demand-driven approach to supporting the region's CSOs, to strengthen their technical and organizational capacity.

15.5 The Role of the RIT in Delivering Sustainability

The RIT's contribution to the sustainability of the overall impact of the CEPF program encompasses grant selection and management, as well as establishing linkages between the program and government decision makers and regional processes. Through its grant management, the RIT will contribute to sustainability, by considering each potential project's relevance in the local political and cultural context, as well as alignment with national priorities and commitments under international conventions. Through its regional networking role, the RIT is expected to be aware of other funding opportunities and relevant programs, and to be proactive in ensuring that grantees are involved, including through sharing information on the CEPF program with other donors.

By helping facilitate linkages to government, the RIT will help grantees draw the attention of decision makers to the results and lessons learned from their projects, and demonstrate ways that

they can contribute to government agendas. Where strategic opportunities to do so arise, the RIT will also support grantees in their outreach to private sector entities. The RIT will contribute to securing additional and continuing funding for projects initiated under the CEPF program, including working with partners on innovative financing mechanisms.

REFERENCES

Abeyasuriya, K., Nugapola, N., Perera, M., Karunaratne, W., and Karunaratne, S. (2017) Effect of dengue mosquito control insecticide thermal fogging on non-target insects. *International Journal of Tropical Insect Science*. 37(1), 11–18.

Acevedo-Rodriguez, P., and Strong, M. (2007) *Flora of the West Indies*. Washington, D.C.: National Museum of Natural History and The Smithsonian Institution.

Acevedo-Rodríguez, P., and Strong, M. (2008) Floristic richness and affinities in the West Indies. *Botanical Review*, 74(1), 5-36.

Agarwal, A., Cashore, B, Hardin, R., Shepherd, G., Benson, C., and Miller, D. (2013) *Economic contributions of forests. Background Paper 1*. United Nations Forum on Forests. Retrieved from http://www.un.org/esa/forests/wp-content/uploads/2015/12/EcoContrForests.pdf

Aho, E. (2017) *Shrinking space for civil society: Challenges in implementing the 2030 agenda.* Stockholm: Forum Syd. Retrieved from http://www.forumsyd.org/PageFiles/8150/PO150943_

AIMS. (2002) *Status of coral reefs of the world: 2002*. (C. Wilkinson, Ed.) Townsville, Queensland, Australia: Australian Institute of Marine Sciences.

ALBA. (2017) *Statement by the Bolivarian Alliance of the Peoples of Our Americas (ALBA) at the opening ceremony of COP 23 of the UNFCCC*. World Conference Centre, Bonn, 6 November 2017.

Alleyne, T. C. (2017) *Unleashing growth and strengthening resilience in the Caribbean.* Washington, D.C.: International Monetary Fund.

Anderson, E. C. (2008) *Potential impacts of climate change on biodiversity in Central America, Mexico, and the Dominican Republic.* Panama: CATHALAC/USAID.

Andrews, S., Cumberbatch, J., and Hinds, C. (2012) *Advancing sustainable tourism. A regional sustainable tourism situational analysis: Caribbean*. UNEP and Global Partnership for Sustainable Tourism.

Anglo-American Caribbean Commission (AACC) (1945) *Guide to commercial shark fishing in the Caribbean area*. Washington, D.C: U.S. Fish and Wildlife Service, Anglo-American Caribbean Commission.

Arias, Y (2018, February 9, 2018) KBAs and corridors in La Selle-Bahoruco-Jaragua Biosphere Reserve. *Telephone interview with David Díaz*.

Arkema, K., Fisher, D., and Wyatt, K. (2017) *Economic valuation of ecosystem services in Bahamian marine protected areas*. Prepared for BREEF by The Natural Capital Project, Stanford University.

Association of Caribbean States (ACS) (2017) *ACS*. [Web page]. Retrieved from http://www.acs-aec.org/

Associated Press. (2017, January 10) Puerto Rico governor pursues freedom of information law. *News 1130.com.* Retrieved from http://www.news1130.com/2017/01/10/puerto-rico-governor-pursues-freedom-of-information-law/.

Atteridge, A., Canales, N. and Savvidou, G. (2017) *Climate finance in the Caribbean region's Small Island Developing States.* Working Paper No. 2018-08. Stockholm: Stockholm Environment Institute - Stockholm Centre.

Attzs, M., Maharaj, M., Boodhan, G. (2014) *Survey and assessment of environmental taxes in the Caribbean.* Policy Brief No. IDB-PB-188. Washington, D.C.: Inter-American

Development Bank. Retrieved from http://www20.iadb.org/intal/catalogo/PE/2014/14506.pdf
AWID. (2017) *Caribbean unity in support of Tambourine Army activist Latoya Nugent*. [Web page]. Retrieved from https://www.awid.org/news-and-analysis/caribbean-unity-support-tambourine-army-activist-latoya-nugent on August 15, 2017.
Bahamas Environment, Science and Technology Commission. (2001) *First national communication.* Nassau: Commonwealth of The Bahamas.
Bahamas National Trust. (2017) Corporate engagement launch. *Trust Notes* 12(31)
Baldwin, C., and Robertson, R. (2014) A new Liopropoma sea bass (Serranidae, Epinephelinae, Liopropomini) from deep reefs off Curaçao, southern Caribbean, with comments on depth distributions of western Atlantic liopropomins. *ZooKeys*, 409, 71–92. doi: 10.3897/zookeys.409.7249
Baldwin, C., and Robertson, D. (2015) A new, mesophotic Coryphopterus goby (Teleostei, Gobiidae) from the southern Caribbean, with comments on relationships and depth distributions within the genus. *ZooKeys*, 513, 23–142. doi:10.3897/zookeys.513.9998
Baldwin, C., Pitassy, D., and Robertson, D. (2016a) A new deep-reef scorpionfish (Teleostei, Scorpaenidae, Scorpaenodes) from the southern Caribbean with comments on depth distributions and relationships of western Atlantic members of the genus. *ZooKeys*, 606, 141-158. doi:10.3897/zookeys.606.8590
Baldwin, C., Robertson, R., Nonaka, A., and Tornabene, L. (2016b) Two new deep-reef basslets (Teleostei Grammatidae, Lipogramma), with comments on the eco-evolutionary relationships of the genus. *ZooKeys*, 638, 45–82. doi:10.3897/zookeys.638.10455
BirdLife International. (2017) *Handbook of the birds of the world and BirdLife International digital checklist of the birds of the world*. Version 9.1. Cambridge, UK. Retrieved from http://datazone.birdlife.org/userfiles/file/Species/Taxonomy/BirdLife_Checklist_Version_91
BirdLife International and Grupo Jaragua. (2015) *Servicios ecosistemicos del Parque Nacional Sierra de Bahoruco, Republica Dominicana.* Santo Domingo: BirdLife International y Grupo Jaragua.
BirdsCaribbean (2017, September 11) *After the storm*. Retrieved from http://www.birdscaribbean.org/2017/09/after-the-storm/ on October 15, 2017.
Blackman, D., Epanchin-Niell, R., Siikamki, J. and Velez Lopez, D. (2015) *Biodiversity conservation in Latin America and the Caribbean: Prioritising policies.* New York: Routledge
Belpomme D. (2007) *Rapport d'expertise et d'audit externe concernant la pollution par les pesticides en Martinique. Conséquences agrobiologiques, alimentaires et sanitaires et proposition d'un plan de sauvegarde en cinq points.* Paris: Association pour la Recherche Thérapeutique Anti-Cancéreuse http://www.nord-nature.org/environnement/energie/com/rapport-martinique%20chlordecone.pdf
Berger, L., Speare, R., Daszak, P., Green, D.E., Cunningham, A.A., Goggin, C.L., Slocombe, R., Ragan, M.A., Hyatt, A.D., McDonald, K.R., Hines, H.B., Lips, K.R., Marantelli, G., Parkes, H. (1998) Chytridiomycosis causes amphibian mortality associated with population declines in the rain forests of Australia and Central America. *PNAS* 95: 9031–9036.

Bosch, J., and Rincon, P. A. (2008) Chytridiomycosis-mediated expansion of *Bufo bufo* in a montane area of Central Spain: An indirect effect of the disease. *Diversity and Distributions* 14: 637-643.

Bovarnick, A., Alpizar, F., and Schnell, C. (2010) *The importance of biodiversity and ecosystems in economic growth and equity in Latin America and the Caribbean: An economic valuation of ecosystems.* New York: United Nations Development Programme.

Bowen, G. A. (2015) Caribbean civil society: Development role and policy implications. *Nonprofit Policy Forum*, 4(1), 81-97.

Bräutigam, A. and Eckert, K. L. (2006) *Turning the tide: Exploitation, trade and management of marine turtles in the Lesser Antilles, Central America, Colombia and Venezuela*. Cambridge, UK: TRAFFIC International.

Breuil, M. (2013) Morphological characterization of the common iguana Iguana iguana (Linnaeus, 1758), of the Lesser Antillean Iguana Iguana delicatissima Laurenti, 1768 and of their hybrids. *Bull. Soc. Herp., 147*, 309-346.

Brooks, T. M., Mittermeier, R. A., Mittermeier, C. G., Da Fonesca G. A. B., Rylands, A. B., Konstant, W. R., Flick, P., Pilgrim, J., Oldfield, S., Magin, G., and Hilton-Taylor, C. (2002) Habitat loss and extinction in the hotspots of biodiversity. *Conservation Biology* 16:909-923.

Brown, D. (2017, April 26) Government cuts $700,000 subvention to St. Lucia National Trust. *Caribbean News Service*. Retrieved from https://caribbeannewsservice.com/now/government-cuts-700000-subvention-to-st-lucia-national-trust/ on September 15, 2017.

Brown, N. A., and Bennett, N., G (2010) *Consolidating change: lessons from a decade of experience in mainstreaming Local forest Management in Jamaica. Technical Report No. 390*. Laventille: Caribbean Natural Resources Institute (CANARI)

Brown, N.A., Geoghegan T., and Renard, Y. (2007) *A situation analysis for the wider Caribbean*. Gland: IUCN.

Brundige, E; Dominguez Cisneros, L., Peñalver, E. M.; and Spitz, L. (2017) U.S. Nonprofit activity in Cuba: The Cuban context. Cornell International Law Journal: Vol. 50: No. 2, Article 2. Retrieved from https://scholarship.law.cornell.edu/cilj/vol50/iss2/2

Burke, L., and Maidens, J. (2004) *Reefs at risk in the Caribbean.* Washington D.C.: World Resources Institute.

Burrowes, P. A, Joglar, R. L, Green, D. E. (2004) Potential causes for amphibian declines in Puerto Rico. *Herpetologica* 60: 141-154

Cano-Ortiz, A., Musarella, C., Piñar Fuentes, J., and Cano, E. (2016) Distribution patterns of endemic flora to define hotspots on Hispaniola. *Systematics and Biodiversity*, 14(3), 261-275. doi:10.1080/14772000.2015.1135195.

Cap-Net (2015) *Integrated Water Resources Management as a Tool for Adaptation to Climate Change with Caribbean Case Studies*. Cap-Net.

Caribbean Agricultural Research Institute (CARDI) (n.d.) *Climate Change and Water Availability in the Caribbean. Policy Brief.* St. Augustine: Caribbean Agricultural Research Institute. Retrieved from http://www.cardi.org/wp-content/uploads/2012/02/POLICY-BRIEF-DRAFT_CC-and-Water-Availability.pdf

Caribbean Biodiversity Fund (2014) Caribbean Biodiversity Fund factsheet. Nassau: Caribbean Biodiversity Fund. Retrieved from

http://www.caribbeanchallengeinitiative.org/images/articles/CBF_Fact_Sheet_-_May_5_2014-1.pdf
Caribbean Coastal Area Management Foundation and Jamaica Environment Trust (2013) *The Goat Islands/Portland Bight Protected Area. The proposed site for a transshipment port in Jamaica.* Kingston: Caribbean Coastal Area Management Foundation and Jamaica Environment Trust.
Caribbean Community Climate Change Centre (CCCCC) (2009) Climate change and the Caribbean: A regional framework for achieving development resilient to climate change (2009-2015) Belmopan: Caribbean Community Climate Change Centre.
Caribbean Development Bank (2014a) *Caribbean economic review and outlook for 2015*. St. Michael, Barbados: Caribbean Development Bank.
Caribbean Development Bank (2014b) *A new paradigm for Caribbean development: transitioning to a green economy*. St. Michael, Barbados: Caribbean Development Bank.
Caribbean Development Bank (2016) *2016 economic review/2017 forecast.* Bridgetown: Caribbean Development Bank.
Caribbean Disaster Emergency Management Agency (CDEMA) (2017a*) Hurricane Maria situation report #5*. Bridgetown: Caribbean Disaster Emergency Management Agency.
Caribbean Disaster Emergency Management Agency (CDEMA) (2017b) *Hurricane Irma situation report #9.* Bridgetown: Caribbean Disaster Emergency Management Agency.
Caribbean Environment Programme (CEP) (2003) *The Caribbean Environment Programme: Promoting regional co-operation to protect the marine environment.* Kingston: UNEP-CEP
Caribbean Environmental Health Institute (2012) *Programme on improving management of coastal resources and the conservation of marine biodiversity in selected CARICOM Countries: Baseline study*. Castries: CEHI.
Caribbean Institute for Meteorology and Hydrology (CIMH) (2016) *Caribbean climatology – Caribbean Regional Climate Centre*. [Web page]. https://rcc.cimh.edu.bb/caribbean-climatology/
Caribbean Natural Resources Institute (CANARI) (2005) *Governance and civil society partnership in sustainable development in the Caribbean*. CANARI Policy Brief No 7. Laventille: CANARI
Caribbean Natural Resources Institute (CANARI) (2012) *Community forestry in the Caribbean: A regional synthesis*. Laventille: CANARI.
Caribbean Natural Resources Institute (CANARI) (2013) *Summary report for the regional workshop Critical Ecosystem Partnership Fund (CEPF) Caribbean Islands Biodiversity Hotspot investment (2010-2015) mid-term evaluation*. Laventille: CANARI.
Caribbean Natural Resources Institute (CANARI) (2017a) *OECS green economy diagnostic: Exploring opportunities for green economy transformation in the Eastern Caribbean.* Laventille: CANARI.
Caribbean Natural Resources Institute (CANARI) (2017b) *Effective organisational capacity building of civil society organisations: Lessons from the Climate ACTT Project.* CANARI Policy Brief No. 24. Laventille: CANARI.
Caribbean Natural Resources Institute (CANARI) (2017c) *Implementing climate change action: A toolkit for Caribbean civil society organisations*. Laventille: CANARI.

Caribbean Regional Fisheries Mechanism Secretariat (CRFM) (2015) *CRFM statistics and information report – 2014*. Kingstown: Caribbean Regional Fisheries Mechanism Secretariat.
Caribbean Regional Fisheries Mechanism (2017) *CRFM.* [Web page]. Retrieved from http://www.crfm.int/
Caribbean Tourism Organisation. (2015) *Latest statistics 2015*. Warrens, St. Michael, Barbados: CTO. Retrieved from http://www.onecaribbean.org/wp-content/uploads/Lattab15_FINAL.pdf.
CARICOM (2014) *Strategic plan for the Caribbean Community 2015 – 2019: Repositioning CARICOM. Vol 2 - The Strategic Plan*. Georgetown: Caribbean Community Secretariat.
CARICOM (2016) *COP 22- CARICOM close out brief V3 (2*) Georgetown: Caribbean Community Secretariat.
CARICOM (2017) *Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)* Georgetown: Caribbean Community Secretariat.
CARICOM (2018) *The State of Biodiversity in the Caribbean Community: a Review of Progress towards the Aichi Biodiversity Targets*. Georgetown: Caribbean Community Secretariat.
CARICOM (n.d.) *Capacity building related to the implementation of Multilateral Environmental Agreements (MEAS) in African, Caribbean and Pacific (ACP) Countries - The Caribbean Hub*. [Web page]. Retrieved from https://caricom.org/projects/detail/capacity-building-related-to-the-implementation-of-multilateral-environment
Cashman, A., Nurse, L. and John, C. (2010) Climate change in the Caribbean: The water management implications. *The Journal of Environment and Development*, 19(1), 42–67.
Caujapé-Castells, J. (2011) Preface. In D. Bramwell, and J. Caujapé-Castells (Eds.), *The biology of island floras* (pp. xiii–xvi) Cambridge: Cambridge University Press.
CEPF (2010) *Ecosystem profile: the Caribbean Islands Biodiversity Hotspot.* Arlington, VA : Critical Ecosystem Partnership Fund.
Cesar, H. S., Öhman, M. C., Espeut, P., Honkanen, M. (2000) An economic valuation of Portland Bight, Jamaica: An integrated terrestrial and marine protected area. In Cesar, H. S. (Ed.), *Collected essays on the economics of coral reefs* (pp. 203-214) Borås, Sweden: CORDIO.
Chao, S. (2013) *Economic impact of non-communicable disease in the Caribbean*. Washington, D.C.: The World Bank Group.
Cheng, T. L., Rovito, S. M., Wake, D. B., and Vredenburg, V. T. (2011) Coincident mass extirpation of neotropical amphibians with the emergence of the infectious fungal pathogen *Batrachochytrium dendrobatidis. Proceedings of the National Academy of Sciences of the United States of America*, 108(23), 9502–9507. Retrieved from http://doi.org/10.1073/pnas.1105538108
CIVICUS (2017a) *Civic space in the Americas*. Johannesburg: CIVICUS.
CIVICUS (2017b) *People power under attack: Findings from the CIVICUS Monitor.* Johannesburg: CIVICUS.
Commission for Environmental Cooperation for North America (CEC) (2001) *Preventing the introduction and spread of aquatic invasive species in North America, 28-30 March 2001.* Montreal: CEC.
Congressional Task Force on Economic Growth in Puerto Rico (2016) *Report to the House and Senate 114th Congress.* Washington, D.C.: United States Congress.

Connor, D. (2017, April 13) Racer snakes may face development threat. *Discover Wildlife*. Retrieved from http://www.discoverwildlife.com/news/racer-snakes-may-face-development-threat

Consorcio Ambiental Dominicano (2015) *CEPF final project completion report: Sustainable financing and establishment of private reserves for biodiversity conservation in Loma Quita Espuela and Loma Guaconejo, Dominican Republic.*

Curley, R. (2017) *Trip savvy: Green globe certified hotels and attractions in the Caribbean.* Retrieved from https://www.tripsavvy.com/green-globe-certified-hotels-and-attractions-in-the-caribbean-1487670 on November 18, 2017.

Daltry, J. (2009) *Biodiversity assessment of Saint Lucia's forests, with management recommendations.* Technical Report No. 10 to the National Forest Demarcation and Bio-Physical Resource Inventory. Helsinki: FCG International Ltd.

Daltry, J. (2018, January 19) Globally threatened reptiles updates in the Caribbean. *E-mail correspondence with David Díaz.*

Dart, T. (2017, March 31) Caribbean resort project draws heat over threat to vulnerable species. *The Guardian*. Retrieved from https://www.theguardian.com/world/2017/mar/31/st-lucia-pearl-of-the-caribbean-resort-environmental-threat on March 3, 2018.

Daszak, P., Cunningham, A. A., and Hyatt, A. D. (2000) Emerging infectious diseases of wildlife—threats to biodiversity and human health. *Science* 287: 443-449.

Debrot, A.O. and Bugter, R. (2010) *Climate change effects on the biodiversity of the BES islands; Assessment of the possible consequences for the marine and terrestrial ecosystems of the Dutch Antilles and the options for adaptation measures.* Alterra-report 2081; IMARES-report C118/10. Wageningen: Alterra.

Díaz, L.M., Cádiz, A., Agustín, A., Chong, A., and Silva, A. (2007) First report of chytridiomycosis in a dying toad (*Anura: Bufonidae*) from Cuba: A New Conservation Challenge for the Island. *EcoHealt*h 4: 172.

Dolisca, F. (2005) *Population pressure, land tenure, deforestation and farming systems in Haiti: The case of Forêt des Pins Reserve.* (Doctoral dissertation) Auburn, Alabama: Auburn University.

Dudley, N., Buyck, C., Furuta, N., Pedrot, C., Renaud, F., and Sudmeier-Rieux, K. (2015) *Protected areas as tools for disaster risk reduction. A handbook for practitioners.* Tokyo and Gland, Switzerland: MOEJ and IUCN.

Dudley, N., Stolton, S., Belokurov, A., Krueger, L., Lopoukhine, N., MacKinnon, K., Sandwith, T., and Sekhran, N. (2010) *Natural solutions: Protected areas helping people cope with climate change.* Gland: IUCNWCPA, TNC, UNDP, WCS, The World Bank, WWF.

Eckstein, D., Künzel, V., and Schäfer, L. (2017) *Global climate risk index 2018* . Bonn: Germanwatch e.V.

Economic Commission for Latin American and the Caribbean (ECLAC) (2006) *Changing population age structures and their implications on socio-economic development in the Caribbean*. Santiago, Chile: ECLAC. (LC/CAR/L.98) https://www.cepal.org/publicaciones/xml/3/27113/L.98.pdf

Economic Commission for Latin American and the Caribbean (ECLAC) (2008) *Impact of changes in European Union import regimes for sugar, banana and rice on selected CARICOM countries.* Santiago, Chile: ECLAC. (LC/CAR/L/168)

Economic Commission for Latin American and the Caribbean (ECLAC) (2009) *Statistical yearbook for Latin America and the Caribbean 2008*. Santiago, Chile: ECLAC. Retrieved from http://repositorio.cepal.org/bitstream/handle/11362/923/1/S2008691_mu.pdf

Economic Commission for Latin American and the Caribbean (ECLAC) (2011) *The economics of climate change in the Caribbean*. Caribbean Development Report III. Santiago, Chile: ECLAC.

Economic Commission for Latin American and the Caribbean (ECLAC) (2015) *Latin America and the Caribbean: Looking ahead after the Millennium Development Goals*. Regional monitoring report on the Millennium Development Goals in Latin America and the Caribbean. Santiago, Chile: ECLAC. (LC/G.2646) Retrieved from http://repositorio.cepal.org/bitstream/handle/11362/38924/S1500708_en.pdf

Economic Commission for Latin American and the Caribbean (ECLAC) (2016) *Foreign direct investment in Latin America and the Caribbean*. Santiago, Chile: ECLAC

Economic Commission for Latin American and the Caribbean (ECLAC) (2017) *Economic activity in Latin America and the Caribbean will expand 1.2% in 2017 and 2.2% in 2018*. [Press release]. Retrieved from https://www.cepal.org/en/pressreleases/economic-activity-latin-america-and-caribbean-will-expand-12-2017-and-22-2018

Edwards, P. (2011) *Ecosystem service valuation of Cockpit Country* . Sherwood Content: Windsor Research Centre.

Edwards, P. (2013) *Ecosystem services of the Coral Spring and Mountain Spring Protected Area, Jamaica.* Sherwood Content: Windsor Research Centre.

El Dia. (2017, January, 24) República Dominicana tendrá nueva regulación para ONG. *El Día*. Retrieved from http://eldia.com.do/republica-dominicana-tendra-nueva-regulacion-para-ong/ on August 17, 2017.

European Commission. (n.d.) *Caribbean Area, Territorial co-operation*. [Web page]. Retrieved from http://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/france/2014tc16rftn008

Ferro, V.G., Lemes P., Melo, A.S., and Loyola R. (2014) The reduced effectiveness of protected areas under climate change threatens Atlantic Forest Tiger Moths. *PLoS ONE 9(9): e107792. doi:10.1371/journal.pone.0107792*

Ferguson, E. (2011, December 6) Smuggled Jamaican parrots big hit at Vienna Zoo: Austrians bust international trade in endangered species. *The Jamaica Observer*. Retrieved from http://www.jamaicaobserver.com/news/Smuggled-Jamaican-Parrots-big-hit-at-Vienna-Zoo_10314363 on December 06, 2017.

Fitzpatrick, S. and Keegan, W. (2007) Human impacts and adaptations in the Caribbean Islands: An historical ecology approach. *Earth and Environmental Science Transactions of the Royal Society of Edinburgh*, 98(1), 29-45 doi:10.1017/S1755691007000096.

Flanders Marine Institute. (2018) *Maritime boundaries geodatabase: Maritime boundaries and exclusive economic zones (200NM), version 10*. Retrieved from https://doi.org/10.14284/312

Food and Agriculture Organization (FAO). (2001) *Land resources information systems in the Caribbean: Proceedings of a sub-regional workshop*. World Soil Resources Reports 95.1. Rome: FAO.

Food and Agriculture Organization (FAO). (2006a) *Global forest resources assessment 2005: Progress towards sustainable forest management*. FAO Forestry Paper 147 (FRA 2005) Rome: FAO.

Food and Agriculture Organization (FAO). (2006b) *Global forest resources assessment 2005: Report on fires in the Caribbean and Mesoamerican regions*. Fire Management Working Paper 12 FAO. Rome, Italy. 40 pp. Rome: FAO. http://www.fao.org/docrep/009/j7568e/j7568e00.htm

Food and Agriculture Organization (FAO). (2006c) *Regional review on aquaculture development. 1. Latin America and the* Caribbean – 2005. FAO Fisheries Circular No. 1017/1. FIRI/C1017/1 Rome: FAO.

Food and Agriculture Organization (FAO). (2014a) *Forests and climate change in the Caribbean*. Rome: FAO. Retrieved from http://www.fao.org/documents/card/en/c/c34802da-3b5c-4c32-998b-1ee2ad750ade/ on September 3, 2017.

Food and Agriculture Organization (FAO). (2014b) *The sustainable intensification of Caribbean fisheries and aquaculture.* Rome: FAO. Retrieved from http://www.fao.org/3/a-i3932e.pdf

Food and Agriculture Organization (FAO) (2015) *The global forest resources assessment*. Desk Reference. Rome: FAO. Retrieved from http://www.fao.org/3/a-i4808e.pdf

Food and Agriculture Organization (FAO) (2016) *The Caribbean must prepare for increased drought due to climate change*. [Web page]. Rome: FAO. Retrieved from http://www.fao.org/americas/noticias/ver/en/c/419202/

Food and Agriculture Organization/Global Environment Facility (FAO/GEF) (n.d.) *FAO/GEF project document climate change adaptation in the Eastern Caribbean fisheries sector (CC4FISH)* FAO project ID: 621550 GEF/LDCF/SCCF Project ID: 5667.

Franks, J., Johnson, D. and Ko, D. (2016) Pelagic Sargassum in the tropical North Atlantic. *Gulf and Caribbean Research* Vol 27, SC6-1. Retrieved from https://aquila.usm.edu/cgi/viewcontent.cgi?article=1511&context=gcr on August 2, 2018

Freedom House. (2017a) *Freedom of the press 2017.* Washington, D.C.: Freedom House. Retrieved from https://freedomhouse.org/report/table-country-scores-fotp-2017

Freedom House. (2017b) *Freedom of the press 2017 methodology*. [Web page]. Washington, D.C.: Freedom House. Retrieved from https://freedomhouse.org/report/freedom-press-2017-methodology

Freedom House. (2017c) *Freedom of the press regional trends*. Washington, D.C.: Freedom House. Retrieved from https://freedomhouse.org/report/freedom-press/freedom-press-2017#regional-trends

FSC. (2017) *Forest stewardship council facts and figures.* July 4, 2017. Bonn: Forest Stewardship Council. Retrieved from https://ic.fsc.org/file-download.facts-figures-july-2017.a-2020.pdf

Gage, I., and Edwards, E. (2003) *Creating a Jamaican spinal forest: Multi-stakeholder management and development*. Québec: XII World Forestry Congress. Retrieved from http://www.fao.org/docrep/ARTICLE/WFC/XII/0530-C3.HTM

Geoghegan, T. (2014) *Green economies in the Caribbean: Perspectives, priorities and an action learning agenda*. London: International Institute for Environment and Development.

Global Environment Facility (GEF) (2012a) *Project Identification Form (PIF) Conserving biodiversity in coastal areas threatened by rapid tourism and physical infrastructure development. Dominican Republic*. Washington, D.C.: GEF. Retrieved from https://www.thegef.org/sites/default/files/project_documents/PIMS%25204955%2520DR%2520PIF%2520final.pdf

Global Environment Facility (GEF) (2012b) *Project Identification Form (PIF) Conserving biodiversity and reducing habitat degradation in protected areas and their buffer zones. Saint Kitts and Nevis.* Washington, D.C.: GEF. Retrieved from https://www.thegef.org/sites/default/files/project_documents/REV%2520PIF_0.pdf

Global Environment Facility (GEF) (2017) *GEF-7 replenishment programming directions and policy agenda (prepared by the Secretariat)* Second Meeting for the Seventh Replenishment of the GEF Trust Fund. Washington, D.C.: GEF.

Global Water Partnership Caribbean (GWP-C) and Caribbean Community Climate Change Centre (CCCCC) (2016) *Caribbean water security and climate resilient development: A regional framework for investment*. Boodram N., Nichols, K.; Woolhouse G., and Walmsly N. (Eds.) Port-of-Spain: GWP-C.

Global Water Partnership Caribbean (GWP-C) (2014) *Achieving development resilient to climate change: A sourcebook for the Caribbean water sector*. Port-of-Spain: GWP-C

Gobierno de la República Dominicana. (2010) *Constitución política de la República Dominicana proclamada el 26 de enero.* Publicado en la Gaceta Oficial No. 10561, del 26 de enero de 2010. Santo Domingo: Gobierno de la República Dominicana. Retrieved from http://observatorioserviciospublicos.gob.do/baselegal/constitucion2010.pdf

Gobierno de la República Dominicana (2018) *Resolución 10-2018. Que dispone la normativa para el manejo de zonas de amortiguamiento de las unidades de conservación del Sistema Nacional de Áreas Protegidas (SINAP) de la República Dominicana.* Santo Domingo: Gobierno de la República Dominicana.

Gómez Valenzuela, V., Bonilla, S., and Alpízar, F. (2014) *Valoración económica del Sistema Nacional de Areas Protegidas de la República Dominicana. Ministerio de Medio Ambiente y Recursos Naturales.* Ministerio de Medio Ambiente y Recursos Naturales, Global Environment Facility, Programa de las Naciones Unidas para el Desarrollo.

Gore-Francis, J., (2013) *Antigua and Barbuda SIDS 2014 preparatory progress report*. Retrieved from https://sustainabledevelopment.un.org/content/documents/1049240Antigua and Barbuda final.pdf

Government of Antigua and Barbuda. (2014) *Antigua and Barbuda national strategic action plan 2014-2020*. St. Johns: Government of Antigua and Barbuda.

Government of Grenada. (2000) *Biodiversity strategy and action plan.* St Georges: Ministry of Finance.

Government of Sint Maarten. (2017) *Minister Lee reports on Ministry activities Post Irma*. Philipsburg: Government of Sint Maarten. Retrieved from http://www.sintmaartengov.org/PressReleases/Pages/Minister-Lee-Reports-on-Ministry-Activities-Post-Irma.aspx

Government of St. Vincent and the Grenadines. (2010) *The fourth national biodiversity report of St.Vincent and the Grenadines to the UNCBD.* Kingstown: Ministry of Health and the Environment.

Gómez, G., and Díaz, R. (2001) Second Latin American Symposium on Forest Seeds: Situation of Forest Sector of the Dominican Republic. Santo Domingo.

Green Climate Fund. (2016) *Projects and programmes. Sustainable Energy Facility for the Eastern Caribbean.* [Web page]. Retrieved from http://www.greenclimate.fund/-/sustainable-energy-facility-for-the-eastern-caribbean on November 18, 2017.

Griffith, M.D., and Ashe, J. (1993) Sustainable Development of coastal and marine areas in Small Islands Developing States: A basis for integrated coastal management. *Ocean and Coastal Management* 21(1993): 269-284.

Guingand, A. (2008) *Economic valuation of the Portland Bight Protected Area*, Jamaica. Lionel Town: Caribbean Coastal Area Management Foundation.

Gyory, J., Mariano, A., and Ryan, E. (2018) *The Caribbean Current. Ocean Surface Currents*. [Web page]. Retrieved from http://oceancurrents.rsmas.miami.edu/caribbean/caribbean.html

Halpern, B.S., Walbridge, S., Selkoe, K.A., Kappel, C.V., Micheli, F., D'Agrosa, C., Bruno, J.F., Casey, K.S., Ebert, C., Fox, H.E., Fujita, R., Heinemann, D., Lenihan, H.S., Madin, E.M.P., Perry, M.T., Selig, E.R., Spalding, M., Steneck, R., and Watson, R. (2008) A global map of human impact on marine ecosystems. *Science*, 319(5865), 948-952.

Hargreaves-Allen, V. (2010) *The economic valuation of the natural resources of Andros.* Washington, D.C.: Conservation Strategy Fund.

Hargreaves-Allen, V. (2011) *The economic value of ecosystem services in the Exumas Cays; threats and opportunities for conservation*. Washington, D.C.: Conservation Strategy Fund.

Harold, S., and Eckert, K. (2005) *Endangered Caribbean sea turtles: An educator's handbook*. Technical Report 3. Beaufort, North Carolina, USA: Wider Caribbean Sea Turtle Conservation Network (WIDECAST) Retrieved from www.widecast.org: http://www.widecast.org/Resources/Docs/Harold_and_Eckert_2005_Carib_Sea_Turtles_Educators_Handbook.pdf

Hawkins, J.P. and Roberts, C.M. (2004) Effects of artisanal fishing on Caribbean coral reefs. *Conservation Biology* 18(1): 215-226.

Hedges, S. (2008) At the lower size limit in snakes: two new species of threadsnakes (Squamata: Leptotyphlopidae: Leptotyphlops) from the Lesser Antilles. *Zootaxa*, 1841(1), 1-30.

Hedges, S. (2018, April 5) *Caribherp: Amphibians and reptiles of Caribbean Islands*. (www.caribherp.org) Philadelphia: Temple University.

Hedges, S., and Conn, C. (2012) A new skink fauna from Caribbean islands (Squamata, Mabuyidae, Mabuyinae) *Zootaxa*, 3288(2012), 4-244.

Heileman (Ed.) (2005) *Caribbean environment outlook. Special edition for the Mauritius International Meeting for the 10-year Review of the Barbados Programme of Action for the Sustainable Development of Small Island Developing States.* UNEP, CARICOM, University of the West Indies.

Heileman, S. and Corbin, C. (2006) Caribbean SIDS. In UNEP/GPA. *The state of the marine environment: Regional assessments* (pp 213-245) The Hague: UNEP/GPA.

Helmer, E. H., Ramos, O., del Mar López, T, M. Quiñones, M. and Diaz, W. (2002) Mapping the forest type and land cover of Puerto Rico, a component of the Caribbean Biodiversity Hotspot. *Caribbean Journal of Science*. 38: 3-4.

Houck, O.A. *Environmental law in Cuba*. Retrieved from http://www.law.fsu.edu/docs/default-source/journals/jluel/previous-issues/volume-16-number-1.pdf?sfvrsn=4

Hudson, M.A. (2016) How we're saving the mountain chicken frog from one of the world's worst wildlife diseases. *The Conversation*. Retrieved from https://theconversation.com/how-were-saving-the-mountain-chicken-frog-from-one-of-the-worlds-worst-wildlife-diseases-64033 on October 5, 2017.

Hudson, M.A., Young R. P., Jackson, J., Wengel, P. O., Martin L., James A., Sulton M., Garcia G., Griffiths R. A., Thomas R., Magin C., Bruford M. W.and Cunningham, A.A. (2016) Dynamics and genetics of a disease-driven species decline to near extinction: Lessons for conservation. *Scientific Reports* 6 (30772)

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) (2018) *Summary for policymakers of the regional assessment report on biodiversity and ecosystem services for the Americas of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. Rice, J., Seixas, C. S., Zaccagnini, M.E, Bedoya-Gaitán, M., Valderrama, N., Anderson, C.B., Arroyo, M.T.K., Bustamante, M, Cavender-Bares, J., Diaz-de-Leon, A., Fennessy, S., García Marquez, J. R., Garcia, K., Helmer, E.H., Herrera, B., Klatt, B., Ometo, J.P., Rodriguez Osuna, V., Scarano, F.R., Schill, S., and Farinaci, J.S. Bonn: IPBES Secretariat.

Intergovernmental Panel on Climate Change (IPCC) (2001) *Climate change 2001: The scientific basis.* Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge: Cambridge University Press.

Intergovernmental Panel on Climate Change (IPCC) (2014) *Climate change 2013: The physical science basis*. Cambridge: Cambridge University Press. Retrieved from http://ebooks.cambridge.org/ref/id/CBO9781107415324.

International Labour Organisation (ILO) (2017) *Women in business and management: gaining momentum in Latin America and the Caribbean*. International Labour Office, Bureau for Employers' Activities (ACT/EMP) Geneva: International Labour Organisation. Retrieved from http://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---act_emp/documents/publication/wcms_579085.pdf

International Monetary Fund (IMF) (2014) *Haiti: Poverty reduction strategy paper*. Washington, D.C.: IMF.

International Monetary Fund (IMF) (2017a) *Haiti: Request for disbursement under the rapid credit facility—press release; staff report; and statement by the executive director for Haiti.* IMF Country Report No. 17/315. Washington, D.C.: IMF.

International Monetary Fund (IMF) (2017b) *The Bahamas: Selected issues*. IMF Country Report No. 17/38. Washington, D.C.: IMF.

International Research Institute for Climate and Society (IRI) (2014) *Module 4: Introduction to hydroclimatology, part 1: Introduction to climate variability*, New York, NY, USA: IRI.

International Tropical Timber Organization (ITTO) (2008) *Developing forest certification: Towards increasing the comparability and acceptance of forest certification systems*. ITTO Technical Series No 29. Yokahama: ITTO.

Ionta, G.M., Judd, W.S., Skean, J.D., and McMullen, C.K. (2012) Two new species of Miconia sect. Sagraea (Melastomataceae) from the Macaya Biosphere Reserve, Haiti, and twelve relevant new species combinations. *Brittonia* 64: 61. Retrieved from https://doi.org/10.1007/s12228-011-9214-0

International Union for Conservation of Nature (IUCN) (2016) *A global standard for the identification of Key Biodiversity Areas, Version 1.0.* Gland, Switzerland: IUCN.

International Union for Conservation of Nature (IUCN) (2017a) *Table 1. Numbers of threatened species by major groups of organisms (1996–2017)* Gland, Switzerland: IUCN. Retrieved from http://cmsdocs.s3.amazonaws.com/summarystats/2017-1_Summary_Stats_Page_Documents/2017_1_RL_Stats_Table_1.pdf

International Union for Conservation of Nature (IUCN) (2017b, October 1) *IUCN Red List of Threatened Species. Version 2017.2*. Gland, Switzerland: IUCN. Retrieved from http://www.iucnredlist.org

International Union for Conservation of Nature (IUCN) (n.d.) *IUCN-CMP unified classification of direct threats. Guidance notes. Version 3.2.* Gland: IUCN Retrieved from http://s3.amazonaws.com/iucnredlist-newcms/staging/public/attachments/3127/dec_2012_guidance_threats_classification_scheme.pdf

Jackson, J. (1997) Reefs since Columbus. *Coral Reefs,* 16(1), S23-S32.

Jackson, J.B.C., Donovan, M.K., Cramer, K.L., and Lam, V.V. (Eds.) (2014) *Status and trends of Caribbean coral reefs: 1970–2012*. Gland, Switzerland: Global Coral Reef Monitoring Network.

Jaitman, L., and Torre I. (2017) The cost of crime in the Caribbean: The accounting method. In H. Sutton and I. Ruprah (Eds.), *Restoring paradise in the Caribbean: Combatting violence with numbers* (pp. 181-196) Washington, D.C.: Inter-American Development Bank.

Jamaica Conservation and Devlopment Trust (JCDT) (2018) *Blue and John Crow Mountains National Park*. [Web page]. Retrieved from https://www.jcdt.org.jm/bjcmnp/about/park-management/8-park

Jamaica Environment Trust. (2013) Defining the boundary. *The Jetter* 1(6), 6.

James, R. (2014) *British Council Assessment of the civil society in Jamaica*. Prepared for the British Council by Research and Strategy Solutions Ltd. Kingston: British Council.

Jenkins, R.W.G., Jelden, D., Webb, G.J.W., and Manolis, S.C. (2004) *Review of crocodile ranching programs*. Conducted for CITES by the Crocodile Specialist Group of IUCN/SSC. January – April 2004. Sanderson, NT, Australia: IUCN-SSC Crocodile Specialist Group.

Jessop, D. (2016) *Recognising the value of Caribbean civil society*. Retrieved from http://www.caribbean-council.org/wp-content/uploads/2016/02/The-View-from-Europe-Feb21-Recognising-the-value-of-Caribbean-civil-society.pdf on June 2017.

John, L. (2005) *The potential of non-timber forest products to contribute to rural livelihoods in the Windward Islands of the Caribbean.* CANARI Technical Report No. 334. Laventille: Caribbean Natural Resources Institute.

Johnson, K., and Hedges, S. B. (1988) Three new species of Calisto from Southwestern Haiti (Lepidoptera: Nymphalidae: Satyrinae) *Tropical Lepidoptera, 9*(2), 45-53.

Joint Nature Conservation Committee (JNCC) (2007) *Invasive species in the UK Overseas Territories*. Peterborough, UK: JNCC.

Jonas, H. D, Barbuto, V., Jonas, H. C, Kothari, A., and Nelson, F. (2014) New steps of change: Looking beyond protected areas to consider other effective area based conservation measures. *Parks,* 20(2), 111–128.

Jones, F. (2015) *Ageing in the Caribbean and the human rights of older persons.* ECLAC – Studies and Perspectives Series – The Caribbean. Santiago, Chile: United Nations Economic Commission for Latin American and the Caribbean.

Jones, I. C., Banner, J. L. and Mwansa, B. J. (1998) *Geochemical constraints on recharge and groundwater evolution: The pleistocene aquifer of Barbados*. San Juan : Third International Symposium on Tropical Hydrology and Fifth Caribbean Islands Water Resources Congress.

Kairo, M., Ali, B., Cheesman, O., Haysom, K., and Murphy, S. (2003) *Invasive species threats to the Caribbean region: Report to The Nature Conservancy.* CAB International. Retrieved from http://www.bu.edu/scscb/working_groups/resources/Kairo-et-al-2003.pdf

Kaly, U., Pratt, C., and Howorth, R. (2002) *Towards managing environmental vulnerability in small island developing states (SIDS)* Suva: South Pacific Applied Geoscience Commission (SOPAC)

Kauffman, J. B., Heider, C., Norfolk, J., and Payton, F. 2014. Carbon stocks of intact mangroves and carbon emissions arising from their conversion in the Dominican Republic. *Ecological Applications*, 24(3), 518-527.

Keith, D.A., Rodriguez-Clark, J.P., Nicholson, E., Aapala, K., Alonso, A., Asmussen, M., Bachman, S., Basset, A., Barrow, E.G., Benson, J.S., Bishop, M.J., Bonifacio, R., Brooks, T.M., Burgman, M.A., Comer, P., Comín, F.A., Essl, F., Faber-Langendoen, D., Fairweather, P.G., Holdaway, R.,J., Jennings, M., Kingsford, R.T., Lester, R.E., Nally, R.M., McCarthy, M.A., Moat, J., Oliveira-Miranda, M.A., Pisanu, P., Poulin, B., Reagan, T.J., Riecken, U., Spalding, M.D., and Zambrano-Martínez, S. (2013) Scientific Foundations for an IUCN Red List of Ecosystems. *PLoS ONE*, 8(5) e62111. Retrieved from https://doi.org/10.1371/journal.pone.0062111

Kerchner, C. and Bonilla Duarte, S. (2014) El valor de los servicios ecosistemicos de las Reservas Científicas Quita Espuela y Guaconejo. In Bonilla-Duarte, S., *Promocion de un esquema de pago por servicios ambientales a traves de la valoración económica de los recursos hídricos en las Reservas Científicas Quita Espuela y Guaconejo, República Dominicana.* (pp. 13-22) Santo Domingo: Instituto Tecnológico de Santo Domingo.

Kiai, M. (2017*) Report of the Special Rapporteur on the rights to freedom of peaceful assembly and of association.* A/HRC/35/28. New York: United Nations Human Rights Council.

Kölher, G., and Hedges, S. (2016) A revision of the green anoles of Hispaniola with description of eight new species (Reptilia, Squamata, Dactyloidae) *Novitates Caribaea*, 9, 1-135.

Kristie, L, and Nealon, J. (2016) Dengue in a changing climate. *Environmental Research:* 151, 115–123.

Laloë, J.O., Esteban N., Berkel J. and Hays G.C. (2016) Sand temperatures for nesting sea turtles in the Caribbean: Implications for hatchling sex ratios in the face of climate change. *Journal of Experimental Marine Biology and Ecology*, 474, 92–99. Retrieved from http://dx.doi.org/10.1016/j.jembe.2015.09.015

Lang, J. (2003) Caveats for the AGRRA 'Initial Results' Volume. In J. Lang, *Status of coral reefs in the Western Atlantic. Results of initial surveys, Atlantic and Gulf Rapid Reef Assessment (AGRRA) Programme* (pp. xv-xx) Washington, DC., USA: Atoll Research Bulletin no.496. National Museum of Natural History, Smithsonian Institute.

Langhammer, P. F., Bakkar, M. I., Bennun, L. A., Brooks, T. M., Clay, R.P., Darwall, W., De Silva, N., Edgar, G.J., Eken, G., Fishpool, L.D.C., Fonseca, G.A.B. da, Foster, M.N., Knox, D.H., Matiku, P., Radford, E.A., Rodrigues, A.S.L., Salaman, P., Sechrest, W., and Tordoff, A.W. (2007) *Identification and gap analysis of key biodiversity areas: Targets for comprehensive protected area systems*. Gland: IUCN (Best Practice Protected Area Guidelines Series 15)

Lefebvre, V. (2017) *Evaluation ex-post du projet FEM (GEF) PID Établissement d'un système national d'aires protégées financièrement soutenable - Rapport final*. Retrieved from https://info.undp.org/docs/pdc/Documents/HTI/PID58509_SNAP_Rapport%20evaluation%20finale_V%20Lefebvre_%20valide.pdf

Le Nouvelliste. (2017, July 1) 257 ONG interdits de fonctionnement en Haïti. *Le Nouvelliste*. Retrieved from http://lenouvelliste.com/article/175871/257-ong-interdits-de-fonctionnement-en-haiti September 15, 2017.

Le Quesne, T., Matthews, J., Heyden, C., Wickel, A.J., Wilby, R., Hartmann, J., Pegram, G., Kistin, E., Blate, G., Freitas, G., Kimura de, L., Eliot, G., Carla; McSweeney, C. and Sindorf, (2010) *Flowing forward: Freshwater ecosystem adaptation to climate change in water resources management and biodiversity conservation.* Gland, Switzerland: WWF.

Lexadin. (n.d.) *Legislation* (Lexadin) [Web page]. Retrieved from https://www.lexadin.nl/wlg/legis/nofr/legis.php

Linardich, C. , Ralph, G., Carpenter, K., Cox, N., Robertson, D.R., Harwell, H., Acero P., A., Anderson Jr., W., Barthelat, F., Bouchereau, J.L., Brown, J.J., Buchanan, J., Buddo, D., Collette, B., Comeros-Raynal, M., Craig, M., Curtis, M., Defex, T., Dooley, J., Driggers III, W., Elfes Livsey, C., Fraser, T., Gilmore Jr., R., Grijalba Bendeck, L., Hines, A., Kishore, R., Lindeman, K., Maréchal, J.P., McEachran, J., McManus, R., Moore, J., Munroe, T., Oxenford, H., Pezold, F., Pina Amargós, F., Polanco Fernandez, A., Polidoro, B., Pollock, C., Robins, R., Russell, B., Sayer, C., Singh-Renton, S., Smith-Vaniz, W., Tornabene, L., Van Tassell, J., Vié, J.C., and Williams, J.T (2017) *The Conservation Status of Marine Bony Shorefishes of the Greater Caribbean*. Gland, Switzerland: IUCN.

Lips, K.R., Brem, F., Brenes, R., Reeve, J.D., Alford, R.A., Voyles, J., Carey, C., Livo, L., Pessier, A.P., and Collins, J.P. (2006) Emerging infectious disease and the loss of biodiversity in a Neotropical amphibian community. *PNAS* 103: 3165-3170.

Loh, T., McMurray S.E., Henkel T.P., Vicente J., and Pawlik, J.R. (2015) Indirect effects of overfishing on Caribbean reefs: sponges overgrow reef-building corals. *PeerJ* 3:e901 https://doi.org/10.7717/peerj.901

Lowe, S., M. Browne, S. Boudjelas, and De Poorter, M. 2001. *100 of the world's worst invasive alien species. A selection from the global invasive species database*. Auckland: Species Survival Commission of the World Conservation Union (IUCN),

Lugo, A.E. (2000) Effects and outcomes of Caribbean hurricanes in a climate change scenario. *The Science of the Total Environment* 262, 243-251.

Lugo, A.E. (2008) Visible and invisible effects of hurricanes on forest ecosystems: an international review. *Austral Ecology* 33: 368-398.

McElroy J.L., Potter B., and Towle, E. (1990) Challenges for sustainable development in small Caribbean islands. In W. Beller, P. d'Ayala. P. Hein (Eds.), *Sustainable development and environmental management of small islands.* (pp. 299-316) UNESCO/Man and the Biosphere Series. Paris: Parthenon Publishing Group.

McGuire, G. (2016) *Barriers to identification an implementation of energy efficiency mechanisms and enhancing renewable energy technologies in the Caribbean*. Port of Spain: ECLAC.

Malena, C. (2015) *Improving the measurement of civil space*. London: Open Society Foundation.

Marsh, S. (2017a, July 22) Cuba seeks to revive mining sector with new lead and zinc mine. *Reuters*. https://www.reuters.com/article/us-cuba-mining/cuba-seeks-to-revive-mining-sector-with-new-lead-and-zinc-mine-idUSKBN1A70K3. Accessed 15 September 2017.

Marsh, S. (2017b, August 1) Communist-run Cuba puts brakes on private sector expansion. *Reuters.* https://www.reuters.com/article/us-cuba-privatesector/communist-run-cuba-

puts-brakes-on-private-sector-expansion-idUSKBN1AH4SL. Accessed 15 September 2017.
Martínez Rivera, C.C. and Rodríguez Plaza, C. (2015) *Los anfibios del sur de la Hispaniola: su historia natural y conservación. Diversidad y estado de conservación de los anfibios.* Guía de campo. Zoológico de Filadelfia, ComuEcoMedia, Alianza de Fondos para Ecosistemas Críticos, Museo Natural de Historia Natural de Santo Domingo, Société Audubon Haïti and Grupo Jaragua. Retrieved from http://www.conservaciondeanfibios.org/uploads/2/1/6/1/21615192/anfibios_del_sur_de_la_hispaniola.pdf
Massol González, A., González, E., Massol Deyá, A., Deyá, T., and Geoghegan. T. (2006) *Bosque del Pueblo, Puerto Rico: How a fight to stop a mine ended up changing forest policy from the bottom up*. Policy That Works for Forests and People. No. 12. London: International Institute for Environment and Development.
Masters, G. and Norgrove, L. (2010) *Climate change and invasive alien species*. CABI Working Paper 1, 30 pp. Wallingford: CABI.
Maunder, M., Leiva, A., Santiago-Valentín, E., Stevenson, D.W., Acevedo-Rodriguez, P., Meerow, A.W., Mejía, M., Clubbe, C., and Francisco-Ortega, J. (2008) Plant conservation in the Caribbean Island Biodiversity Hotspot. *The Botanical Review*, 74(1), 197-207.
Medeiros, D., Hove, H., Keller, M., Echeverría, D., and Parry, J. E. (2011) *Review of current and planned adaptation action: the Caribbean.* Report for the International Institute for Sustainable Development.
Mercer. J., Kelman, I. Alfthan B. and Kurvits T. (2012) Ecosystem-based adaptation to climate change in Caribbean small island developing states: Integrating local and external knowledge. *Sustainability* 4(8):1908-1932. Retrieved from http://www.mdpi.com/2071-1050/4/8/1908/htm on 15 December 2016.
Millennium Ecosystem Assessment. (2005) *Ecosystems and human well-being—Synthesis.* Washington, D.C.: Island Press. Retrieved from http://www.millenniumassessment.org/documents/document.356.aspx.pdf
Miloslavich, P., Díaz, J., Klein, E., Alvarado, J., Dıaz, C., Gobin, J., Escobar-Briones, E., Cruz-Motta, J.J., Weil, e., Cortés, J., Bastidas, A. C., Robertson, R., Zapata, F., Martín, A., Castillo, J., Kazandjian, A., and Ortiz, M. (2010) Marine biodiversity in the Caribbean: Regional estimates and distribution patterns. *PLoS ONE*, 5(8) Retrieved from https://doi.org/10.1371/journal.pone.0011916
Ministerio de Economía, Planificación y Desarollo. (2012) *Ley 1-12 Estrategia nacional de desarollo 2030*. Santo Domingo: Ministerio de Economía, Planificación y Desarrollo de la República Dominicana.
Ministerio de Medio Ambiente y Recursos Naturales. (2011a) *Reglamento para la declaración de áreas protegidas privadas o conservación*. Santo Domingo: Ministerio de Medio Ambiente y Recursos Naturales de la República Dominicana.
Ministerio de Medio Ambiente y Recursos Naturales. (2011b) *Estrategia nacional de conservación y uso sostenible de la biodiversidad y plan de acción 2011-2020 (ENBPA)* Santo Domingo: Ministerio de Medio Ambiente y Recursos Naturales de la República Dominicana.

Ministerio de Medio Ambiente y Recursos Naturales (2012) *Parque Nacional de Los Haitises Plan de Manejo 2012-2017.* Santo Domingo: Ministerio de Medio Ambiente y Recursos Naturales de la República Dominicana.

Ministerio de Medio Ambiente y Recursos Naturales. (2014) *Plan de manejo Parque Nacional Montaña La Humeadora 2014-2019.* Santo Domingo: Ministerio de Medio Ambiente y Recursos Naturales de la República Dominicana.

Ministerio de Medio Ambiente y Recursos Naturales. (2015) *Reglamento de co-manejo de áreas protegidas en la República Dominicana*. Santo Domingo: Ministerio de Medio Ambiente y Recursos Naturales de la República Dominicana.

Ministry of Finance and Economic Affairs. (2013) *Medium term growth and development strategy 2013 - 2020*. Bridgetown: Government of Barbados.

Mittermeier, R.A., Robles-Gil, P., Hoffmann, M., Pilgrim, J.D., Brooks, T.B., Mittermeier, C.G., Lamoreux, J.L. and Fonseca, G.A.B. (2004) *Hotspots Revisited: Earth's biologically richest and most endangered terrestrial ecoregions*. Mexico D.F.: CEMEX.

Morton, M. (2009) *Management of critical species on Saint Lucia: Species profiles and management recommendations*. Technical Report No. 13 to the National Forest Demarcation and Bio-Physical Resource Inventory, Helsinki: FCG International Ltd.

Mumby, P.J. and Fitzsimmons, J.F.M. (2014) *Towards reef resilience and sustainable livelihoods: A handbook for Caribbean coral reef managers*. Exeter: University of Exeter.

Munro-Knight, S. (2013) *Caribbean civil society and sustainable Caribbean development: Initial discussion paper for the 3rd Conference on Small Island Developing (SIDS 2014)* Caribbean Consultative Working Group. Bridgetown: Caribbean Policy Development Centre.

Myers, N., Mittermeier, R., Mittermeier, C., da Fonseca, G., and Kent, J. (2000) Biodiversity hotspots for conservation priorities. *Nature, 403(6772), 853*. doi:10.1038/35002501

Myers, R., O'Brien, J., Mehlman D., and Bergh, C. (2004a) *Fire management assessment of the highland ecosystems of the Dominican Republic*. GFI publication no. 2004-2. Arlington, VA: The Nature Conservancy.

Myers, R., Wade, D. and Bergh, C. (2004b) *Fire management assessment of the Caribbean Pine (Pinus caribea) forest ecosystems on Andros and Abaco Islands, Bahamas*. GFI publication no. 2004-1. Arlington, VA: The Nature Conservancy.

Narcisse, C. (2017, September 5) CSOs and governance in Jamaica and the Caribbean. *Telephone interview* with Nicole A. Brown.

National Environment and Planning Agency. (2016) *National strategy and action plan on biological diversity in Jamaica 2016-2021*. Kingston: National Environment and Planning Agency.

National Oceanic and Atmospheric Administration (NOAA) (2015, October 8) *NOAA declares third ever global coral bleaching event. Bleaching intensifies in Hawaii; high ocean temperatures threaten Caribbean corals*. [Web page]. Retrieved from http://www.noaanews.noaa.gov/stories2015/100815-noaa-declares-third-ever-global-coral-bleaching-event.html on 8 October 2015.

National Oceanic and Atmospheric Administration (NOAA) (n.d.*) Global coral bleaching 2014-2017: Status and an appeal for observations*. [Web page]. Retrieved from https://coralreefwatch.noaa.gov/satellite/analyses_guidance/global_coral_bleaching_2014-17_status.php

National Renewable Energy Laboratory. (2015*) Energy snapshot Dominican Republic*. Energy Transitions Initiative Islands. Washington, D.C.: U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy.
NDP Secretariat. (2017) *Vision 2040: National development plan of The Bahamas (Second working draft)* Nassau: Government of the Commonwealth of The Bahamas.
Nieto-Blázquez, M., Antonelli, A., and Roncal, J. (2017) Historical biogeography of endemic seed plant genera in the Caribbean: Did GAARlandia play a role? *Ecology and Evolution*, 7(23), 10158–10174. doi:https://doi.org/10.1002/ece3.3521
Now Grenada. (2017, May 28) *Grand Anse Marine Protected Area established*. [Web page]. Retrieved from http://www.nowgrenada.com/2017/05/grand-anse-marine-protected-area-gampa-established/
Now Grenada. (2018, January 22) *Grenada launches its newest protected area: Grand Anse*. [Web page]. Retrieved from http://www.nowgrenada.com/2018/01/grenada-launches-its-newest-marine-protected-area-grand-anse/
Oceans 5. (n.d.) *Grants database.* [Data file]. Retrieved from http://oceans5.org/grants/ on February 24, 2018.
Ogawa, S., Park, J., Singh, D., and Thacker, N. (2013) *Financial interconectedness and financial sector reform in the Caribbean.* Washington, D.C.: International Monetary Fund. Retrieved from https://www.imf.org/external/pubs/ft/wp/2013/wp13175.pdf on November 18, 2017.
Onestini, M. (2017*) Strengthening the operational and financial sustainability of the national protected area system - Terminal evaluation*. Retrieved from https://erc.undp.org/evaluation/evaluations/detail/8896
Organisation of Eastern Caribbean States (OECS) (2011) *Common tourism policy*. Castries: OECS Secretariat.
Palasi, J.P., Martinez, C., and Laudon, A. I. (2006*) Financements publics et biodiversité en outre-mer : Quelle ambition pour le développement durable ?* IUCN French National Committee
Pan American Health Organization/World Health Organization (PAHO/WHO) (2017, May 4) *Epidemiological Update: Cholera.* http://www.paho.org/hq/index.php?option=com_docmanandtask=doc_viewandgid=39836andItemid=270andlang=en
Pantin, D., and Reid, V. (2005) *Economic valuation study: Action-learning project on incentives for improved watershed services in the Buff Bay/ Pencar Watershed.* CANARI Who Pays for Water Project Document No.2. Laventille: CANARI
Parra-Torrado, M. (2014) *Youth unemployment in the Caribbean.* Caribbean Knowledge Series. Washington, D.C.: World Bank. Retrieved from http://documents.worldbank.org/curated/en/756431468012643544/Youth-unemployment-in-the-Caribbean
Petit, J., and Prudent, G. (2010) *Climate change and biodiversity in the European Union overseas entities*. Gland, Switzerland and Brussels, Belgium: IUCN.
Planning Institute of Jamaica. (2009) *Vision 2030 Jamaica: national development plan.* Kingston: Planning Institute of Jamaica.
Polunin, N., and Williams, I. (1999) *Reef condition and recovery in the Caribbean.* Marine Systems Research Group Technical Report 6. A Subject Review for the Department for

International Development (DFID) NRSP LWI Project R6783. Government of the United Kingdom.
Population Reference Bureau (2008) *World population data sheet 2008*. Washington D.C.: Population Reference Bureau http://www.prb.org/pdf08/08WPDS_Eng.pdf
Population Reference Bureau (2017) *World population data sheet 2017*. Washington D.C.: Population Reference Bureau Retrieved from https://assets.prb.org/pdf17/2017_World_Population.pdf
Posner, S., Michel, G. and J. R. Toussaint. (2010) *Haiti biodiversity and tropical forest assessment.* Washington, D.C.: USAID, USDA Forest Service.
Pressey, R. L. (1994) Ad hoc reservations: forward or backward steps in developing representative reserve systems. *Conservation Biology*, 8, 662–668.
Proctor, C., Inman, S., Zeiger, J., and Graves, G. (2017) Last search for the Jamaican golden swallow (*Tachycineta e. euchrysea*) *The Journal of Caribbean Ornithology*, 30(1), 69-74. Retrieved from www.birdscaribbean.org/jco
Puerto Rico Climate Change Council (PRCCC) (2013) *Puerto Rico's State of the Climate 2010-2013: Assessing Puerto Rico's social-ecological vulnerabilities in a changing climate.* Puerto Rico Coastal Zone Management Program. San Juan: Department of Natural and Environmental Resources, NOAA Office of Ocean and Coastal Resource Management.
Quarless, D. (2015) *Ageing in the Caribbean and the rights of older persons.* Briefing Note by ECLAC Caribbean Chief. Retrieved from https://www.cepal.org/en/notas/ageing-caribbean-and-rights-older-persons
Quarless, D. (2017) *Caribbean economies.* Briefing note by ECLAC Caribbean Chief. Retrieved from https://www.cepal.org/en/notes/caribbean-economies
Quiñones Rosado, R. E. (2002) *Regulación de las organizaciones de la sociedad civil (OSC): Legislación y propuestas.* Santo Domingo: Instituto Tecnológico de Santo Domingo, Banco Interamericano de Desarrollo.
Quiroga, R.; Perazza, Maria, C.; Corderi, D.; Banerjee, O.; Cotta, J.; Watkins, G. G.; López Sancho, J.L. (2016) *Environment and biodiversity: Priorities for protecting natural capital and competitiveness in Latin America and the Caribbean.* Retrieved from https://publications.iadb.org/handle/11319/7885#sthash.WrChH0vR.dpuf
Rawwida Baksh and Associates. (2016) *Country gender assessments (CGAs) synthesis report.* Bridgetown: Caribbean Development Bank. Retrieved from http://www.caribank.org/wp-content/uploads/2016/05/SynthesisReportCountryGenderAssessment.pdf
Renard, Y., and Borobia, M. (2015) *Terminal evaluation of the UNEP Project Caribbean Biological Corridor*. Evaluation Report, UNEP.
Reynolds, R., Puente-Rolón, A., Geneva, A., Aviles-Rodriguez, K., and Herrmann, N. (2016) Discovery of a remarkable new boa from the Conception Island Bank, Bahamas. *BREVIORA*, 519(1), 1-19. Retrieved from http://dx.doi.org/10.3099/brvo-549-00-1-19.1
Roberts, C.M., McClean, C.J., Veron, J.E.N., Hawkins, J.P., Allen, G.R., McAllister, D.E., Mittermeier, C.G., Schueler, F.W., Spalding, M., Wells, F., Vynne, C., and Werner, T.B. (2002) Marine biodiversity hotspots and conservation priorities for tropical reefs. *Science*, 295, 1280-1284.
Rojas. E., Wirshafter, R.M., Radke, J., and Hosier, R. (1988) Land conservation in small developing countries: computer assisted studies in Saint Lucia. *Ambio* 17: 282-288.
Scalley, T.H. (2012) Freshwater resources in the insular Caribbean: an environmental perspective. *Caribbean Studies* 40(2), 63-93.

Schwartz, M. (1999) Choosing the appropriate scale of reserves for conservation. *Annual Review of Ecology and Systematics*, 30(1), 83–108.
Seavy, N.E., Gardali, T., Golet, G.H., Griggs, F.T., Howell, C.A., Kelsey, R., Small, S.L., Viers, J.H. and Weigand, J.F. (2009) Why climate change makes riparian restoration more important than ever: Recommendations for practice and research. *Ecological Restoration*, 27(3), 330–338.
Secretariat for the Convention on Biodiversity. (2018) *Country profiles*. [Web page]. Retrieved from https://www.cbd.int/countries/
Seddon, N., Hou-Jones, X., Pye T., Reid H., Roe D., Mountain, D. and Raza Rizv, A. (2016) *Ecosystem-based adaptation: A win–win formula for sustainability in a warming world*? IIED Briefing. London: International Institute for Environment and Development.
Simpson M.C.; Scott D.; Harrison M.; Silver, N., O'Keeffe, E., Sim, R., Harrison, S., Taylor, M., Lizcano, G., Rutty, M., Stager, H., Oldham, J., Wilson, M., New, M., Clarke, J., Day, O.J., Fields, N., Georges, J., Waithe, R. and McSharry, P. (2010) *Quantification and magnitude of losses and damages resulting from the impacts of climate change: Modelling the transformational impacts and costs of sea level rise in the Caribbean (Summary Document)* Barbados: United Nations Development Programme (UNDP)
Singh, R. (2017, June 26) *New benchmarks to assess press freedom in the Caribbean. Guyana Chronicle*. Retrieved from https://guyanachronicle.com/2017/06/26/new-benchmarks-to-assess-press-freedom-in-caribbean on September 15, 2017.
Skean, J.D. (2000) Mecranium juddii (Melastomataceae: Miconieae), a new species from the Massif de la Hotte, Haiti *Brittonia* 52: 191. Retrieved from https://doi.org/10.2307/2666511
Skerratt L.F., Berger L., Speare R., Cashins S., McDonald, K.R., Phillot, A.D., Hines, H.B., and Kenyon, N. (2007) Spread of chytridiomycosis has caused the rapid global decline and extinction of frogs. *EcoHealth* 4: 125-134.
Smith, M. L. (2004) Caribbean Islands. In Mittermeier, R.A., Gil, P.G., Hoffman, M., Pilgrim, J., Brooks, T.M., Mittermeier, C.G., Lamoreux, J., Da Fonseca, G.A.B., (Eds.), *Hotspots revisited: Earth's biologically richest and most endangered terrestrial ecoregions*. Mexico DF, Mexico: CEMEX.
Smucker, G.R., Bannister, M., D'Agnes, H., Gossin, Y., Portnoff, M., Timyan, J., Tobias, S., and Toussaint, R. (2007) *Environmental vulnerability in Haiti: Findings and recommendations*. Washington, D.C.: USAID.
Smulders, F.O.H, Vonk, J.A., Engel, M. S. and Christianen M. J. A. (2017) Expansion and fragment settlement of the non-native seagrass Halophila stipulacea in a Caribbean bay, *Marine Biology Research*, 13:9, 967-974, DOI: 10.1080/17451000.2017.1333620
Soulé, M., and Terborgh, J. (1999) *Continental conservation: Scientific foundations of regional reserve networks*. Washington, D.C., USA: Island Press.
Spalding, H. (n.d.) *Cuba's evolving civil society*. [Web page]. NACLA. Retrieved from https://nacla.org/article/cuba%E2%80%99s-evolving-civil-society
Spalding, M., Green, E., and Ravilious, C. (2001) *World atlas of coral reefs*. California: UNEP World Conservation Monitoring Centre. University of California Press.
Springer, C. 2005. *Cost pricing for water production and water protection services in Jamaica: a situational analysis.* Impact Consultancy Services Incorporated on behalf of The Caribbean Natural Resources Institute (CANARI) and International Institute for Environment and Development.

Springer, S. (1950) An outline for a Trinidad shark fishery. *Proceedings of the Gulf and Caribbean Fisheries Institute second annual session* (pp. 17-26) Coral Gables: University of Miami.

Stattersfield, A., Crosby, M., Long, A., and Wege, D. (1998) *Endemic Bird Areas of the world: priorities for biodiversity conservation.* Cambridge, U.K.: BirdLife International.

Stein, B. A., Staudt, A., Cross, M. S. Dubois, N. S., Enquist C., Griffis, R. Hansen, L. J. Hellmann, J. J., Lawler, J. J., Nelson, E. J., and Pairis. A. (2013) Preparing for and managing change: climate adaptation for biodiversity and ecosystems. *Frontiers in Ecology*, 11(9), 502–510.

Stephen, C. L., Reynoso, V. H., Collett, W. S., Hasbun, C. R., and Breinholt, J. W. (2013) Geographical structure and cryptic lineages within common green iguanas, *Iguana iguana*. *Journal of Biogeography*, 40(1), 50-62.

Stephenson, T.S., Vincent, L., Allen, T. Van Meerbeeck, C.J., McLean, N., Peterson, T.C., Taylor, M.A.; Aaron-Morrison, A. P., Auguste, T., Bernard, D., Boekhoudt, J.R.I., Blenman, R.C., Braithwaite, G.C., Brown, G., Butler, M., Cumberbatch, C.J.M., Etienne-Leblanc, S., Lake, D.E., Martin, D.E., McDonald, J.L., Zaruela, M.O., Porter, A.O., Ramirez, M.S., Tamar, G.A., Roberts, B.A., Mitro, S.S., Shaw, A., Spence, J.M., Winter, A., and Trotman A.R. (2014) Changes in extreme temperature and precipitation in the Caribbean region, 1961-2010. *International Journal of Climatology*, 34(9), 2957–2971.

Suárez, A.G., Garraway, E., Vilamajó, D., Mujica, L., Gerhartz, J., Capote, R. T. and Blake, N. (2008) *Climate change impacts on terrestrial biodiversity in the insular Caribbean.* Report of Working Group III, Climate. Port of Spain: Caribbean Natural Resources Institute (CANARI)

Sutton, H. and Alvarez, L. (2017) Who is most likely to be a victim of Crime? In H. Sutton and I. Ruprah (Eds.), *Restoring paradise in the Caribbean: Combatting violence with numbers*, (pp.33– 2009) Washington, D.C.: Inter-American Development Bank

Sutton, H., Jaitman, L. and Khadan, J. (2017) Violence in the Caribbean: Cost and impact. In T. Alleyne, İ. Ötker, U. Ramakrishnan, and K. Srinivasan (Eds.), *Unleashing growth and strengthening resilience in the Caribbean*. (pp. 329 – 345) Washington, DC: International Monetary Fund

Sutton, H., Ruprah, I., and Pecha. C. (2017) The Effects of Crime on Economic Growth, Tourism, Fear, Emigration, and Life Satisfaction. In H. Sutton and I. Ruprah (Eds.), *Restoring paradise in the Caribbean: Combatting violence with numbers*, (pp.197– 209) Washington, D.C.: Inter-American Development Bank.

Taylor, M. (2017) *Climate change and the Caribbean - The take away messages.* Video File. Kingston: Panos Caribbean. Retrieved from https://www.youtube.com/watch?v=G15y6UmBfFI

The Daily Observer. (2017, May 22) Yida agreement deemed a sign of desperation. *The Daily Observer*. Retrieved 31 January 2018 from: https://antiguaobserver.com/yida-agreement-deemed-a-sign-of-desperation/.

The Economist Intelligence Unit Limited. (2015) *Private sector development in the Caribbean: A regional overview.* London: The Economist Intelligence Unit Limited.

The Economics of Ecosystems and Biodiversity (TEEB) (2018) *Ecosystem services*. [Web page]. Retrieved from http://www.teebweb.org/resources/ecosystem-services/ on April 4, 2018.

The MacArthur Foundation (n.d.) *Our work*. [Web page]. Retrieved from https://www.macfound.org/programs/conservation/ February 24, 2018.

The Mohamed bin Zayed Species Conservation Fund (n.d.) *Supported projects*. [Web page] Retrieved from https://www.speciesconservation.org on February 24, 2018.
The Nature Conservancy. (2015) *CEPF Final project completion report: A campaign to promote private sector sustainable finance mechanisms to support Jamaica's protected areas system. Project Report.*
The Nature Conservancy. (2016) *2016 Caribbean impact report*. Coral Gables: The Nature Conservancy
The Nature Conservancy. (n.d.) *Caribbean. The Caribbean Challenge Initiative*. Retrieved from https://www.nature.org/ourinitiatives/regions/caribbean/caribbean-challenge.xml
The World Bank. (2012) *Expanding financing for biodiversity conservation experiences from Latin America and the Caribbean.* Latin America and Caribbean Region. Environment and Water Resources Occasional Paper Series. Washington, D.C.: The World Bank. http://www.worldbank.org/content/dam/Worldbank/document/LAC-Biodiversity-Finance.pdf
The World Bank. (2014) *Saint Lucia disaster vulnerability reduction project* (English) Washington, D.C.: The World Bank.
The World Bank. (2016) *Jamaica disaster vulnerability reduction project* (English) Washington, D.C.: The World Bank. http://documents.worldbank.org/curated/en/282911467999736588/pdf/PAD1233-R2016-0008-1-Box394844B-OUO-9.pdf
The World Bank. (2017a) *List of economies June 2017*. [Data file]. Retrieved from http://databank.worldbank.org.
The World Bank. (2017b) *World Bank open data*. [Data file]. Retrieved from https://datacatalog.worldbank.org between August and November, 2017.
The World Bank. (2017c) *World development indicators*. Washington, D.C.: The World Bank.
The World Bank. (2017d) *Global economic prospects, June 2017: A fragile recovery*. Washington, D.C.: World Bank. doi: 10.1596/978-1-4648-1024-4. http://documents.worldbank.org/curated/en/503571468301159147/Saint-Lucia-Disaster-Vulnerability-Reduction-Project
The World Bank. (2017e) *Organization of Eastern Caribbean States - Caribbean regional oceanscape project* (English) Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/624081505229928094/Organization-of-Eastern-Caribbean-States-Caribbean-Regional-Oceanscape-Proje
The World Bank. (2017f) St. Vincent and the Grenadines - Regional disaster vulnerability reduction project: restructuring (English) Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/124731487559623984/St-Vincent-and-the-Grenadines-Regional-Disaster-Vulnerability-Reduction-Project-restructuring
Theile, S., Steiner, A. and Kecse-Nagy, K. (2004) *Expanding borders: New challenges for wildlife trade controls in the European Union*. Brussels: TRAFFIC Europe.
Thompson. (1944) *The fisheries of British Honduras*. Development and Welfare in the West Indies, Bulletin 21.
Timyan, J. (2011) *Key Biodiversity Areas of Haiti*. Port au Prince: Société Audubon Haïti. Retrieved from http://audubonhaiti.org/wordpress/wp-content/uploads/2012/09/KEY-BIODIVERSITY-AREAS-OF-HAITI_FINAL.pdf

Tornabene, L., Robertson, D., and Baldwin, C. (2016) *Varicus lacerta*, a new species of goby (*Teleostei, Gobiidae, Gobiosomatini, Nes* subgroup) from a mesophotic reef in the southern Caribbean. *ZooKeys*, 596, 143–156. doi:10.3897/zookeys.596.8217

Toussaint, R. (n.d.) *Profile of the Haiti national biodiversity strategy and action plan with implications for bi-national actions with the Dominican Republic*. Port au Prince: NEAP Secretariat/Ministry of Environment.

Towle, J. A., Moody, W. S., and Randall, A. (2010) *Philanthropy, civil society, and law in the Caribbean: A preliminary overview of the legal framework supporting philanthropy and the non-profit sector in the insular Caribbean.* A report of the Caribbean Philanthropy Network. St. Thomas: USVI.

Towle, J. (2017) *Implementation of the Virgin Islands Non-Profit (NPO) Act, 2012: Implications for NPOs, civil society and philanthropy in the Virgin Islands*. Caribbean Philanthropy Network and Community Foundation of the Virgin Islands.

United Nations. (2015) *The Millennium Development Goals report 2015-Regional backgrounder: Latin America and the Caribbean*. Retrieved from www.un.org/millenniumgoals/2015_MDG_Report/pdf/backgrounders/MDG%202015%20PR%20Bg%20LAC.pdf November 18, 2017.

United Nations. (2016) *World statistics pocketbook 2016 edition, V (2)* New York, NY: Department of Economic and Social Affairs Statistics Division, United Nations

United Nations Convention to Combat Desertification. (2017) Global land outlook. First edition. Bonn: UNCCD.

United Nations Department of Economic and Social Affairs, Population Division. (2014) *World urbanization prospects: The 2014 revision, highlights.* (ST/ESA/SER.A/352) New York: United Nations.

United Nations Development Programme (UNDP) (2016a) *Human development report: Human development for everyone.* New York: United Nations Development Programme.

United Nations Development Programme (UNDP) (2016b) *Regional human development report 2016: Caribbean. Multidimensional progress: Human resilience beyond income.* Retrieved from http://hdr.undp.org/sites/default/files/undp_bb_chdr_2016.pdf on November 18, 2017.

United Nations Educational, Scientific and Cultural Organisation (UNESCO) (2006) *The use of desalination plants in the Caribbean*. Documentos Técnicos del PHI-LAC, N°5. Caribbean Environmental Health Institute.

United Nations Educational, Scientific and Cultural Organisation (UNESCO (2018) *World Heritage List Blue and John Crow Mountains.* [Web page]. Retrieved from http://whc.unesco.org/en/list/1356

United Nations Educational, Scientific and Cultural Organisation (UNESCO. (n.d.) *Free media contribute to good governance, empowerment and eradicating poverty*. [Web page]. Retrieved from http://www.unesco.org/new/en/unesco/events/prizes-and-celebrations/celebrations/international-days/world-press-freedom-day/2014-themes/free-media-contribute-to-good-governance-empowerment-and-eradicating-poverty/ on September 18, 2017.

United Nations Environment Programme (UNEP) (2002) *Global Environment Outlook* 2002. London: Earthscan.

United Nations Environment Programme (UNEP) (2004a) Villasol, A. and Beltrán, J. *Caribbean islands, GIWA regional assessment 4.* Fortnam, M. and P. Blime (Eds.) Kalmar, Sweden: University of Kalmar.
United Nations Environment Programme (UNEP) (2004b) Bernal, M.C., Londoño, L.M., Troncoso, W., Sierra-Correa, P.C. and Arias-Isaza, F.A. (Eds.), *Caribbean Sea/small islands, GWA Regional Assessment 3a*. Kalmar, Sweden: University of Kalmar.
United Nations Environment Programme (UNEP) (2008) *Climate change in the Caribbean and the challenge of adaptation*. United Nations Environment Programme, Regional Office for Latin America and the Caribbean.
United Nations Environment Programme (UNEP) (2011) *Towards a green economy: Pathways to sustainable development and poverty eradication*. *A synthesis for policy makers*. Nairobi: UNEP. Retrieved from https://sustainabledevelopment.un.org/content/documents/126GER_synthesis_en.pdf
United Nations Environment Programme (UNEP) (2014) *Integrating water, land and ecosystems management in Caribbean Small Island Developing States project document. Project no. GFL/4932.* Nairobi: UNEP.
United Nations Environment Programme (UNEP) (2016a*) Enhancing cooperation among the seven biodiversity related agreements and conventions at the national level using national biodiversity strategies and action plans*. Nairobi: UNEP.
United Nations Environment Programme (UNEP) (2016b) *Environment in the 2030 agenda for LAC. Elements for session 1: Sustainable development.* Twentieth Meeting of the Forum of Ministers of Environment of Latin America and the Caribbean, Cartagena de Indias, Colombia. *UNEP/LAC-XX/3 Rev.1*. New York: UNEP
United Nations Environment Programme (UNEP) (2016c) *Haiti South Department forest energy supply chains*. UNEP Haiti, September 2016. Nairobi: UNEP.
United Nations Environment Programme - Caribbean Regional Coordinating Unit (UNEP RCU) (2001) *Coastal Zone Management, Environmental Issues in the Caribbean, Caribbean Environment Programme*. [Web page]. Retrieved from http://www.cep.unep.org/issues/czm.html
United Nations Environment Programme/Convention on Biological Diversity (UNEP/CBD) (2009) *Capacity-development workshop for the Caribbean region on national biodiversity strategies and action plans and mainstreaming of biodiversity and integration of climate change.* Port-of-Spain, Trinidad and Tobago: UNEP/CBD.
United Nations Environment Programme/Regional Office on Latin America and the Caribbean (UNEP/ROLAC) (2012) Bi-*annual report on the implementation of the UNEP/EC project entitled "The demarcation and establishment of the Caribbean biological corridor (CBC): as a framework for biodiversity conservation, environmental rehabilitation and development of livelihoods*." Panama City: UNEP/ROLAC. Retrieved from https://cbcinfo.files.wordpress.com/2012/09/cbc-final-report_050812.pdf
United Nations Environment Programme -World Conservation Monitoring Centre UNEP-(WCMC) (2016) *The state of biodiversity in Latin America and the Caribbean: A mid-term review of progress towards the Aichi Targets*. Cambridge, UK: UNEP-WCMC.
United Nations Programme on HIV and AIDS (UNAIDS) (2017) *Ending AIDS: Progress*. Geneva: UNAIDS.

United Nations Statistics Division. (2018) *2. Population, latest available census and estimates (2015 - 2016)* Retrieved from https://unstats.un.org/unsd/demographic-social/products/vitstats/seratab2.pdf.

United States Department of Agriculture (USDA) Caribbean Climate Hub (n.d.) *Drought effects on forests and rangelands in the US Caribbean*. [Web page].Retrieved from https://www.climatehubs.oce.usda.gov/hubs/caribbean/topic/drought-effects-forests-and-rangelands-us-caribbean on October 30, 2017.

Varty, N. (2016) *Terminal evaluation of the UNEP/GEF Project: "Project for Ecosystem Services (ProEcoServ)"* [GEF project ID: 3807*]*. Nairobi, Kenya: UNEP Evaluation Office.

Vaslet, A., and Renoux, R. (2016) *Regional ecosystem profile - Caribbean region. EU outermost regions and overseas countries and territories*. BEST Service Contract 07.-3-7.2013/666363/SER/B2. Brussels: European Commission.

Vergés, A., Steinberg, P.D., Hay, M.E., Poore, A.G.B., Campbell, A. H., Ballesteros, E. Heck, Jr. K.L., Booth, D.J. and Coleman, M.A. (2014) The tropicalization of temperate marine ecosystems: Climate-mediated changes in herbivory and community phase shifts. *Proceedings of the Royal Society B*. 281. (1789) Proc. R. Soc. B 281: 20140846.

Vidal, J. (2014, February 10) Wind of change sweeps through energy policy in the Caribbean. *Guardian Newspaper* (online version) Retrieved from https://www.theguardian.com/global-development/poverty-matters/2014/feb/10/wind-of-change-energy-policy-caribbean

Watson, C., Patel, S., Durand, A., and Schalatek. L. (2016) *Climate finance briefing: Small Island Developing States.* Climate Finance Fundamentals 12. London: Overseas Development Institute and Washington, D.C.: Heinrich Böll Stiftung North America.

Watson, J., Cross, M., Rowland, E., Joseph, L.N., Rao, M., and Seimon, A. (2011) Planning for species conservation in a time of climate change. In J. Blanco and H. Kheradmand (Eds.), *Climate change - Research and technology for adaptation and mitigation.* Rijeka: InTech

Weaver, D. B. (1993) Ecotourism in the small island Caribbean. *GeoJournal, 31*(4), 457-465.

Webson, W. A. (2010) *Philanthropy, civil society, and NGOs in the Caribbean: An overview of the dimensions of the NGO/civil society sector in the insular, English-speaking Caribbean. A report of the Caribbean Philanthropy Network*. St. Thomas: USVI: Caribbean Philanthropy Network.

Western Central Atlantic Fishery Commission. (2017) *Review of the state of fisheries in FAO Area 31*. Eighth Session of the Scientific Advisory Group (SAG). Merida, Mexico, 3-4 November 2017. Retrieved from http://www.fao.org/fi/static-media/MeetingDocuments/WECAFC/WECAFC17/3Reve.pdf

WIDECAST. (2018) *Conservation status - IUCN Red List*. Retrieved from http://www.widecast.org/conservation/iucn-red-list/

Wielgus, J., Cooper, E, Torres R. and Burke, L. (2010) *Coastal capital: Dominican Republic. Case studies on the economic value of coastal ecosystems in the Dominican Republic. Working Paper.* Washington, DC: World Resources Institute.

Wikipedia. (2016) *Papa Bois*. [Web page]. Retrieved from https://en.wikipedia.org/w/index.php?title=Papa_Boisandoldid=731460677 on February 23, 2018.

Wikipedia. (n.d.) *Carbon dioxide equivalent*. [Web page]. Retrieved from https://en.wikipedia.org/w/index.php?title=Carbon_dioxide_equivalentandoldid=828621821 on March 3, 2018

Wiley, J. W., and Wunderle, J. M. (1993) The effects of hurricanes on birds, with special reference to Caribbean islands. *Bird Conservation* 3: 319-349.

Wilkinson, C., and Souter, D. (2008) *Status of Caribbean Coral reefs after bleaching and hurricanes in 2005*. Townsville: Global Coral Reef Monitoring Network, and Reef and Rainforest Research Centre.

Wilson, E. O. (1992) *The diversity of life*. Harvard University Press.

Wilson, S., Sagewan-Alli, I. and Calatayud A. (2014) *The ecotourism industry in the Caribbean. A value chain analysis.* IDB-TN-710. Inter-American Development Bank.

Windsor Research Centre. (2014) *Cockpit Country watersheds Jamaica.* Retrieved from http://www.cockpitcountry.com/watersheds.html

Woods, C.A.and Sergile, F.E. (2001) *Biogeography of the West Indies: Patterns and perspectives*. CRC Press.

Wunderle, J.M., Lodge, D.J., and Waide, R.B. (1992) Short term effects of Hurricane Gilbert on terrestrial bird populations on Jamaica. *The Auk,* 109, 148–166.

World Travel and Tourism Council (WTTC) (2017a) *Travel and tourism. Economic impact 2017*. Caribbean. Retrieved from: https://www.wttc.org/-/media/files/reports/economic-impact-research/regions-2017/caribbean2017.pdf on November 18, 2017.

World Travel and Tourism Council (WTTC) (2017b) *WTTC country reports.* Retrieved from https://www.wttc.org/economic-impact/country-analysis/country-reports/ on November 18, 2017.

WWF and IUCN. (1997) *Centres of plant diversity: a guide and strategy for their conservation* (Vol. 3) (S. H. Davis, Ed.) Gland, Switzerland: World Wide Fund for Nature and International Union for Conservation of Nature.

APPENDICES

Appendix 1 List of Globally Threatened Species in the Caribbean Islands Biodiversity Hotspot

Based on the 2017-3 IUCN Red List of Threatened Species (www.redlist.org; downloaded on February 5, 2018).

Appendix 1.1 Mammals

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Balaenoptera borealis	Sei Whale	EN					X					X			X			X											X	
Balaenoptera musculus	Blue Whale	EN					X									X														
Physeter macrocephalus	Sperm Whale	VU			X		X	X	X				X	X	X	X		X	X					X	X	X	X	X		
Mormopterus minutus	Little Goblin Bat	VU	Yes									X																		
Natalus primus	Cuban Greater Funnel-eared Bat	VU	Yes									X																		
Natalus jamaicensis	Jamaican Greater Funnel-eared Bat	CR	Yes																X											
Chiroderma improvisum	Guadeloupean Big-eyed Bat	EN															X				X									
Leptonycteris curasoae	Curaçaoan Long-nosed Bat	VU				X			X				X																	
Phyllonycteris aphylla	Jamaican Flower Bat	CR	Yes																X											

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Eptesicus guadeloupensis	Guadeloupe Big Brown Bat	EN	Yes														X													
Myotis dominicensis	Dominican Myotis	VU												X			X													
Lasiurus degelidus	Jamaican Red Bat	VU	Yes																X											
Lasiurus minor	Minor Red Bat	VU					X								X			X				X								
Lasiurus insularis	Cuban Yellow Bat	VU	Yes									X																		
Myotis nyctor		VU						X								X														
Atopogale cubana	Cuban Solenodon	EN	yes									X																		
Solenodon paradoxus	Hispaniolan Solenodon	EN	Yes												X			X												
Geocapromys brownii	Brown's Hutia	VU	Yes																X											
Geocapromys ingrahami	Bahaman Hutia	VU	Yes				X																							
Mesocapromys angelcabrerai	Cabrera's Hutia	EN	Yes									X																		
Mesocapromys auritus	Eared Hutia	EN	Yes									X																		
Mesocapromys nanus	Dwarf Hutia	CR	Yes									X																		
Mesocapromys sanfelipensis	Little Earth Hutia	CR	Yes									X																		
Mysateles melanurus	Black-tailed Hutia	VU	Yes									X																		
Plagiodontia aedium	Cuvier's Hutia	EN	Yes												X			X												
Trichechus manatus	American Manatee	VU					X		X	X	X	X	X		X				X			X							X	X

Appendix 1.2 Birds

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Accipiter gundlachi	Gundlach's Hawk	EN	Yes									X																		
Buteo ridgwayi	Ridgway's Hawk	CR	Yes												X															
Chondrohierax wilsonii	Cuban Kite	CR	Yes									X																		
Dendrocygna arborea	West Indian Whistling-duck	VU			X		X			X	X	X			X			X	X			X		X					X	X
Siphonorhis americana	Jamaican Poorwill	CR	Yes																X											
Antrostomus noctitherus	Puerto Rican Nightjar	EN	Yes																			X								
Rissa tridactyla	Black-legged Kittiwake	VU					X																							
Numenius borealis	Eskimo Curlew	CR						X																						
Patagioenas caribaea	Ring-tailed Pigeon	VU	Yes																X											
Leptotila wellsi	Grenada Dove	CR	Yes													X														
Starnoenas cyanocephala	Blue-headed Quail-dove	EN	Yes									X																		
Geotrygon caniceps	Grey-headed Quail-dove	VU	Yes									X																		
Geotrygon leucometopia	White-fronted Quail-dove	EN	Yes												X			X												
Coccyzus rufigularis	Bay-breasted Cuckoo	EN	Yes												X			X												
Cyanolimnas cerverai	Zapata Rail	CR	Yes									X																		
Calyptophilus tertius	Western Chat-tanager	VU	Yes												X			X												

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Corvus leucognaphalus	White-necked Crow	VU													X			X												
Loxia megaplaga	Hispaniolan Crossbill	EN	Yes												X			X												
Tachycineta cyaneoviridis	Bahama Swallow	EN					X					X																		
Tachycineta euchrysea	Golden Swallow	VU													X			X	X											
Icterus oberi	Montserrat Oriole	VU	Yes																		X									
Icterus bonana	Martinique Oriole	VU	Yes																	X										
Nesopsar nigerrimus	Jamaican Blackbird	EN	Yes																X											
Agelaius xanthomus	Yellow-shouldered Blackbird	EN	Yes																			X								
Icterus northropi	Bahama Oriole	CR	Yes				X																							
Ramphocinclus brachyurus	White-breasted Thrasher	EN																		X					X					
Vermivora bachmanii	Bachman's Warbler	CR										X																		
Setophaga cerulea	Cerulean Warbler	VU					X	X				X							X											
Setophaga angelae	Elfin Woods Warbler	EN	Yes																			X								
Catharopeza bishopi	Whistling Warbler	EN	Yes																								X			
Leucopeza semperi	Semper's Warbler	CR	Yes																						X					
Torreornis inexpectata	Zapata Sparrow	EN	Yes									X																		
Xenoligea montana	White-winged Warbler	VU	Yes												X			X												

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Sitta insularis	Bahama Nuthatch	EN	Yes				X																							
Melanospiza richardsoni	Saint Lucia Black Finch	EN	Yes																						X					
Ferminia cerverai	Zapata Wren	EN	Yes									X																		
Turdus lherminieri	Forest Thrush	VU												X			X				X				X					
Turdus swalesi	La Selle Thrush	VU	Yes												X			X												
Catharus bicknelli	Bicknell's Thrush	VU										X			X			X	X	X		X								
Tyrannus cubensis	Giant Kingbird	EN	Yes									X																		
Colaptes fernandinae	Fernandina's Flicker	VU	Yes									X																		
Campephilus principalis	Ivory-billed Woodpecker	CR										X																		
Hydrobates leucorhous	Leach's Storm-petrel	VU			X		X	X	X	X		X	X	X	X		X	X		X	X	X		X	X	X	X	X	X	X
Pterodroma hasitata	Black-capped Petrel	EN												X	X		X	X												
Pterodroma caribbaea	Jamaican Petrel	CR					X							X			X		X											
Psittacara euops	Cuban Parakeet	VU	Yes									X																		
Psittacara chloropterus	Hispaniolan Parakeet	VU	Yes												X			X												
Amazona collaria	Yellow-billed Amazon	VU	Yes																X											
Amazona ventralis	Hispaniolan Amazon	VU	Yes												X			X												
Amazona agilis	Black-billed Amazon	VU	Yes																X											
Amazona vittata	Puerto Rican Amazon	CR	Yes																			X								

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Amazona barbadensis	Yellow-shouldered Amazon	VU							X																					
Amazona versicolor	Saint Lucia Amazon	VU	Yes																						X					
Amazona arausiaca	Red-necked Amazon	VU	Yes											X																
Amazona guildingii	St Vincent Amazon	VU	Yes																							X				
Amazona imperialis	Imperial Amazon	EN	Yes											X																

Appendix 1.3 Reptiles

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Crocodylus acutus	American Crocodile	VU										X			X			X	X											
Crocodylus rhombifer	Cuban Crocodile	CR	Yes									X																		
Amphisbaena hyporissor	Puerto Rican Dusky Amphisbaena	EN	Yes												X			X												
Amphisbaena caudalis	Cayemite Long-tailed Amphisbaena	EN	Yes															X												
Amphisbaena cayemite	Cayemite Short-tailed Amphisbaena	CR	Yes															X												
Amphisbaena fenestrata	Cope's Worm Lizard	EN								X																				X
Amphisbaena gonavensis	Gonave Worm Lizard	CR	Yes															X												
Amphisbaena innocens	Innocent Worm Lizard	VU	Yes												X			X												
Amphisbaena leali	Pestel Amphisbaena	CR	Yes															X												
Celestus duquesneyi	Blue-tailed Galliwasp	CR	yes																X											
Celestus fowleri	Bromeliad Galliwasp	VU	Yes																X											
Celestus microblepharis	Small-eyed Galliwasp	CR	Yes																X											
Celestus occiduus	Jamaica Giant Galliwasp	CR	yes																											

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Diploglossus montisserrati	Montserrat Galliwasp	CR	Yes																		X									
Celestus anelpistus	Giant Hispaniolan Galliwasp	CR	Yes												X															
Celestus warreni	Giant Hispaniolan Galliwasp	VU	Yes												X			X												
Celestus agasepsoides		EN	Yes												X			X												
Celestus barbouri		EN	Yes																X											
Celestus darlingtoni	Darlington's Galliwasp	EN	Yes												X															
Celestus haetianus		EN	Yes												X			X												
Celestus hewardi	Red-spotted Galliwasp	EN	yes																X											
Celestus macrotus	Thomas' Galliwasp	EN	Yes															X												
Celestus molesworthi	Portland Coast Galliwasp	EN	Yes																X											
Celestus maculatus		EN	Yes								X																			
Chilabothrus monensis	Mona Island Boa	EN	Yes																			X								
Chilabothrus subflavus	Jamaican Boa	VU	Yes																X											
Chilabothrus granti	Virgin Islands Boa	EN								X												X								X
Chilabothrus exsul	Northern Bahamas Boa	VU	Yes				X																							
Chilabothrus argentum	Conception Bank Silver Boa	CR	yes				X																							
Chironius vincenti	St Vincent Blacksnake	CR	Yes																							X				

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Anolis roosevelti	Culebra Giant Anole	CR								X												X								X
Anolis ahli	Ahl's Anole	EN	Yes									X																		
Anolis pogus	St Martin Anole	VU		X																						X		X		
Anolis juangundlachi	Finca Ceres Anole	CR	Yes									X																		
Anolis strahmi	Baoruco Cliff Anole	EN	Yes												X															
Anolis guafe	Cabo Cruz Banded Anole	EN	Yes									X																		
Anolis haetianus	Tiburon Stout Anole	EN	Yes															X												
Anolis marron	Jacmel Gracile Anole	EN	Yes															X												
Anolis koopmani	Brown Red-bellied Anole	EN	Yes															X												
Alsophis antiguae	Antiguan Racer	CR	Yes		X																									
Hypsirhynchus ater	Jamaican Racer	CR	Yes																X											
Alsophis rijgersmaei	Anguilla Racer	EN		X																			X			X		X		
Alsophis rufiventris	Orange-bellied Racer	VU							X																					
Erythrolamprus cursor	Lacépède's Ground Snake	CR	Yes																	X										
Erythrolamprus ornatus	Saint Lucia Racer	CR	Yes																						X					
Borikenophis sanctaecrucis	Saint Croix Racer	CR	Yes																											X
Alsophis sanctonum	Terre-de-Haut Racer	EN	Yes														X													

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Alsophis antillensis		CR	Yes														X													
Haitiophis anomalus	Hispaniola Racer	VU	Yes												X			X												
Hypsirhynchus melanichnus	La Vega Racer	CR	Yes												X			X												
Hypsirhynchus polylepis	Jamaican Long-tailed Racerlet	EN	Yes																X											
Hypsirhynchus scalaris		VU	Yes															X												
Ialtris agyrtes	Barreras Fanged Snake	EN	Yes												X															
Ialtris haetianus	Haitian Ground Snake	VU	Yes												X			X												
Ialtris parishi	Parish's Fanged Snake	CR	Yes												X			X												
Arrhyton tanyplectum	San Vincente Island Racer	EN	yes									X																		
Erythrolamprus triscalis	Three-scaled Ground Snake	EN	Yes										X																	
Cyclura carinata	Turks and Caicos Rock Iguana	CR					X																						X	
Cyclura collei	Jamaican Iguana	CR	Yes																X											
Cyclura nubila	Clouded Rock Iguana	VU									X	X																		
Cyclura pinguis	Anegada Rock Iguana	CR	Yes							X																				
Cyclura ricordii	Ricord's Iguana	CR	Yes												X			X												
Cyclura rileyi	Central Bahamian Rock Iguana	EN	Yes				X																							

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Cyclura cychlura	Northern Bahamian Rock Iguana	VU	Yes				X																							
Cyclura cornuta	Hispaniolan Rhinoceros Iguana	VU	Yes												X			X												
Iguana delicatissima	Lesser Antillean Green Iguana	EN		X					X					X			X			X			X							
Cyclura stejnegeri	Mona Rhinoceros Iguana	EN	Yes																			X								
Cyclura lewisi	Grand Cayman Blue Iguana	EN	Yes								X																			
Tetracheilostoma breuili	Saint Lucia Threadsnake	EN	Yes																						X					
Tetracheilostoma carlae	Barbados Threadsnake	CR	Yes					X																						
Mitophis asbolepis	Martin Garcia Threadsnake	CR	Yes												X															
Mitophis calypso	Samana Threadsnake	CR	Yes												X															
Mitophis leptepileptus	Haitian Border Threadsnake	CR	Yes															X												
Mitophis pyrites	Thomas' Blind Snake	EN	Yes												X			X												
Phyllodactylus pulcher	Barbados Leaf-toed Gecko	CR	Yes					X																						
Phyllodactylus hispaniolae	Dominican Leaf-toed Gecko	EN	Yes												X															
Phyllodactylus sommeri	Haiti Leaf-toed Gecko	CR	Yes															X												
Alinea lanceolata	Barbados Skink	CR	Yes					X																						

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Capitellum mariagalantae	Marie-Galante Skink	CR	Yes														X													
Capitellum metallicum	Lesser Martinique Skink	CR	Yes																	X										
Capitellum parvicruzae	Lesser Saint Croix Skink	CR	Yes																											X
Mabuya hispaniolae	Hispaniolan Two-lined Skink	CR	Yes												X															
Mabuya montserratae	Montserrat Skink	CR	Yes																		X									
Mabuya mabouya	Greater Martinique Skink	CR	Yes																	X										
Marisora aurulae	Lesser Windward Skink	VU														X											X			
Spondylurus anegadeae	Anegada Skink	CR	Yes							X																				
Spondylurus culebrae	Culebra Skink	CR	Yes																			X								
Spondylurus fulgida	Jamaican Skink	EN	Yes																X											
Spondylurus haitiae	Hispaniolan Four-lined Skink	CR	Yes															X												
Spondylurus lineolatus	Hispaniolan Ten-lined Skink	CR	Yes												X			X												
Spondylurus macleani	Carrot Rock Skink	CR	Yes							X																				
Spondylurus magnacruzae	Greater Saint Croix Skink	CR	Yes																											X
Spondylurus martinae	Saint Martin Skink	CR	Yes																						X		X			

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Spondylurus monae	Mona Skink	CR	Yes																			X								
Spondylurus monitae	Monito Skink	CR	Yes																			X								
Spondylurus nitidus	Puerto Rican Skink	EN	Yes																			X								
Spondylurus powelli	Anguilla Bank Skink	EN		X																			X							
Spondylurus semitaeniatus	Lesser Virgin Islands Skink	CR								X																				X
Spondylurus sloanii	Virgin Islands Bronze Skink	CR								X																				X
Spondylurus spilonotus	Greater Virgin Islands Skink	CR	Yes																											X
Spondylurus turksae	Turks Islands Skink	CR	Yes																										X	
Sphaerodactylus storeyae		EN	Yes									X																		
Sphaerodactylus torrei	Cuban Broad-banded Sphaero	EN	Yes									X																		
Sphaerodactylus streptophorus	Hispaniolan Small-eared Sphaero	VU	Yes												X			X												
Sphaerodactylus pimienta	Pepper Sphaero	EN	Yes									X																		
Sphaerodactylus armasi	Guantanamo Coastal Gecko	EN	Yes									X																		
Sphaerodactylus williamsi	Haitian Striped Sphaero	CR	Yes															X												
Sphaerodactylus callocricus	Rough-banded Sphaero	VU	Yes												X															

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Sphaerodactylus thompsoni	Barahona Limestone Sphaero	EN	Yes												X			X												
Gonatodes daudini	Grenadines Clawed Gecko	CR	Yes																								X			
Sphaerodactylus kirbyi	Grenadines Sphaero	VU														X											X			
Aristelliger hechti	Caicos Gecko	VU	Yes																										X	
Aristelliger reyesi	Reyes' Caribbean Gecko	CR	yes									X																		
Sphaerodactylus asterulus	Haitian Least Gecko	EN	Yes															X												
Sphaerodactylus beattyi	Saint Croix's Sphaero	EN	Yes																											X
Sphaerodactylus cinereus	Gray Gecko	VU	Yes															X												
Sphaerodactylus cochranae	Cochran's Least Gecko	CR	Yes												X															
Sphaerodactylus cryphius	Bakoruco Least Gecko	EN	Yes												X															
Sphaerodactylus dacnicolor	Jamaican Tailspot Sphaero	EN	Yes																X											
Sphaerodactylus dimorphicus		EN	Yes									X																		
Sphaerodactylus elasmorhynchus	Marche Leon Least Gecko	CR	Yes															X												
Sphaerodactylus epiurus	Hispaniolan Tailspot Sphaero	CR	Yes												X															
Sphaerodactylus inaguae	Inagua Sphaero	EN	yes				X																							

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Sphaerodactylus intermedius	Mantanzas Least Gecko	EN	yes									X																		
Sphaerodactylus ladae	Spotted Agave Geckolet	EN	Yes												X															
Sphaerodactylus lazelli	Cap-Haitien Least Gecko	CR	Yes															X												
Sphaerodactylus mariguanae	Southern Bahamas Sphaero	EN	yes				X																							
Sphaerodactylus nycteropus	Morne Dubois Least Gecko	CR	yes															X												
Sphaerodactylus ocoae	Peravia Least Gecko	EN	Yes												X															
Sphaerodactylus oliveri	Juventud Least Gecko	EN	yes									X																		
Sphaerodactylus omoglaux	Fond Parisien Least Gecko	EN	Yes															X												
Sphaerodactylus oxyrhinus	Jamaican Sharpnosed Sphaero	EN	Yes																X											
Sphaerodactylus parkeri	Southern Jamaica Banded Sphaero	EN	Yes																X											
Sphaerodactylus parthenopion	Virgin Gorda Least Gecko	EN	Yes							X																				
Sphaerodactylus perissodactylius	Martin Garcia Geckolet	EN	Yes												X															
Sphaerodactylus phyzacinus		EN	yes														X													
Sphaerodactylus plummeri	Barahona Big-Scaled Sphaero	EN	Yes												X															

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Sphaerodactylus randi	Pedernales Least Gecko	EN	Yes												X															
Sphaerodactylus rhabdotus	Two-striped Sphaero	EN	Yes												X															
Sphaerodactylus richardsoni	Northern Jamaica Banded Sphaero	EN	Yes																X											
Sphaerodactylus ruibali	Ruibal's Least Gecko	EN	yes									X																		
Sphaerodactylus samanensis	Samana Least Gecko	CR	Yes												X															
Sphaerodactylus schuberti	Neiba Agave Sphaero	CR	Yes												X															
Sphaerodactylus schwartzi	Guantanamo Collared Sphaero	EN	yes									X																		
Sphaerodactylus semasiops	Cockpit Eyespot Sphaero	EN	Yes																X											
Sphaerodactylus sommeri	TerreNueve Least Gecko	CR	Yes															X												
Sphaerodactylus zygaena	Dame-Marie Least Gecko	EN	Yes															X												
Pholidoscelis polops	St. Croix Ameiva	EN	Yes																											X
Cnemidophorus vanzoi	Saint Lucian Whiptail	CR	Yes																						X					
Pholidoscelis corax	Censky's Ameiva	EN	Yes	X																										
Pholidoscelis corvinus	Sombrero Ameiva	CR	Yes	X																										
Pholidoscelis dorsalis	Jamaica Ameiva	EN	yes																X											

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Pholidoscelis wetmorei	Puerto Rican Blue-tailed Ameiva	VU	yes																			X								
Pholidoscelis atratus	Redonda Ameiva	CR	Yes		X																									
Tropidophis hendersoni	Cuban Khaki Trope	CR	Yes									X																		
Leiocephalus greenwayi	East Plana Curlytail Lizard	VU	Yes				X																							
Leiocephalus altavelensis	Alto Velo Curlytail Lizard	CR	Yes												X															
Leiocephalus endomychus	Central Haitian Curlytail Lizard	CR	Yes															X												
Leiocephalus onaneyi	Sierra Curlytail Lizard	CR	yes									X																		
Leiocephalus pratensis	Atalaye Curlytail Lizard	CR	Yes															X												
Leiocephalus psammodromus	Turks and Caicos Curlytail Lizard	VU	Yes																										X	
Leiocephalus rhutidira	Lapierre Curlytail Lizard	CR	Yes															X												
Leiocephalus vinculum	Cochran's Curlytail Lizard	EN	Yes															X												
Typhlops monensis	Mona Blind Snake	EN	Yes																			X								
Typhlops syntherus	Barahona Peninsula Blindsnake	EN	Yes												X			X												
Typhlops capitulatus	Haitian Pale-Lipped Blindsnake	EN	Yes															X												
Typhlops hectus	Tiburon Peninsula Blindsnake	VU	Yes															X												

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Amerotyphlops tasymicris	Grenada Bank Blindsnake	EN														X											X			
Typhlops agoralionis	La Hotte Blindsnake	CR	Yes															X												
Typhlops caymanensis	Cayman Worm Snake	EN	Yes								X																			
Typhlops epactius	Cayman Brac Blindsnake	CR	Yes								X																			
Typhlops eperopeus	Bahoruco Blindsnake	VU	Yes												X			X												
Typhlops gonavensis	Gonave Island Worm Snake	EN	Yes															X												
Antillotyphlops granti	Grant's Worm Snake	EN	Yes																			X								
Typhlops naugus	Erica's Worm Snake	VU	Yes							X																				
Typhlops proancylops	La Selle Blindsnake	EN	Yes												X			X												
Typhlops sylleptor	Pestel Blindsnake	EN	Yes															X												
Typhlops tetrathyreus	Haitian Worm Snake	EN	Yes															X												
Typhlops titanops	Titan Worm Snake	EN	Yes												X			X												
Caretta caretta	Loggerhead Turtle	VU		X		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X	X		X		X	X
Chelonia mydas	Green Turtle	EN		X	X			X	X	X		X	X	X	X	X		X	X	X		X		X	X	X	X	X	X	X
Eretmochelys imbricata	Hawksbill Turtle	CR			X		X	X	X	X		X	X		X	X	X		X	X		X		X		X		X		
Lepidochelys olivacea	Olive Ridley	VU			X							X			X		X		X	X		X								

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Dermochelys coriacea	Leatherback	VU		X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X
Trachemys decorata	Hispaniolan Slider	VU	Yes												X			X												
Trachemys terrapen	Cat Island Freshwater Turtle	VU	Yes																X											

Appendix 1.4 Amphibians

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Allobates chalcopis	Martinique Volcano Frog	VU	Yes																	X										
Peltophryne lemur	Lowland Caribbean Toad	CR								X												X								
Peltophryne cataulaciceps	Cuban Pine Toad	EN	Yes									X																		
Peltophryne empusa	Cuban Small-eared Toad	VU	Yes									X																		
Peltophryne fluviatica	Hispaniolan Crestless Toad	CR	Yes												X															
Peltophryne fracta	Eastern Crested Toad	EN	Yes												X															
Peltophryne guentheri	Southern Crested Toad	VU	Yes												X			X												
Peltophryne gundlachi	Cuban High-crested Toad	VU	Yes									X																		
Peltophryne longinasus	Cuban Long-nosed Toad	EN	Yes									X																		
Peltophryne taladai	Cuban Spotted Toad	VU	Yes									X																		
Peltophryne florentinoi		CR	Yes									X																		
Pristimantis euphronides		EN	Yes													X														
Pristimantis shrevei		EN	Yes																							X				
Eleutherodactylus jasperi	Cayey Robber Frog	CR	Yes																			X								

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Eleutherodactylus cavernicola		CR	Yes																X											
Eleutherodactylus fuscus		CR	Yes																X											
Eleutherodactylus junori		CR	Yes																X											
Eleutherodactylus karlschmidti	Karl's Robber Frog	CR	Yes																			X								
Eleutherodactylus semipalmatus	Foothill Robber Frog	CR	Yes															X												
Eleutherodactylus sisyphodemus		CR	Yes																X											
Eleutherodactylus cooki		VU	Yes																			X								
Eleutherodactylus eneidae	Villalba Robber Frog	CR	Yes																			X								
Eleutherodactylus principalis		EN	Yes									X																		
Eleutherodactylus tonyi		CR	Yes									X																		
Eleutherodactylus casparii		EN	Yes									X																		
Eleutherodactylus goini		VU	Yes									X																		
Eleutherodactylus acmonis		EN	Yes									X																		
Eleutherodactylus adelus		EN	Yes									X																		
Eleutherodactylus albipes		CR	Yes									X																		

Scientific Name	English Name	Red List Status	Island endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Eleutherodactylus alcoae	Barahona Rock Frog	EN	Yes												X			X												
Eleutherodactylus amadeus	Haitian Robber Frog	CR	Yes															X												
Eleutherodactylus amplinympha		EN	Yes											X																
Eleutherodactylus andrewsi	Jamaican Rumpspot Frog	EN	Yes																X											
Eleutherodactylus apostates	Apostates Robber Frog	CR	Yes															X												
Eleutherodactylus armstrongi	Baoruco Hammer Frog	EN	Yes												X			X												
Eleutherodactylus audanti	South Island Telegraph Frog	VU	Yes												X			X												
Eleutherodactylus auriculatoides		EN	Yes												X															
Eleutherodactylus bakeri	La Hotte Bush Frog	CR	Yes															X												
Eleutherodactylus barlagnei		EN	Yes														X													
Eleutherodactylus bartonsmithi	Barton's Robber Frog	CR	Yes									X																		
Eleutherodactylus blairhedgesi		CR	Yes									X																		
Eleutherodactylus bresslerae		CR	Yes									X																		
Eleutherodactylus brevirostris	Short-nosed Green Frog	CR	Yes															X												
Eleutherodactylus caribe		CR	Yes															X												

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Eleutherodactylus chlorophenax	False Green Robber Frog	CR	Yes															X												
Eleutherodactylus corona		CR	Yes															X												
Eleutherodactylus counouspeus		EN	Yes															X												
Eleutherodactylus cubanus		CR	Yes									X																		
Eleutherodactylus darlingtoni		CR	Yes															X												
Eleutherodactylus dolomedes		CR	Yes															X												
Eleutherodactylus emiliae		EN	Yes									X																		
Eleutherodactylus etheridgei		EN	Yes									X																		
Eleutherodactylus eunaster	Les Cayes Robber Frog	CR	Yes															X												
Eleutherodactylus fowleri	Fowler's Robber Frog	CR	Yes												X			X												
Eleutherodactylus furcyensis	La Selle Red-legged Frog	CR	Yes												X			X												
Eleutherodactylus glamyrus		EN	Yes									X																		
Eleutherodactylus glandulifer	Doris' Robber Frog	CR	Yes															X												
Eleutherodactylus glanduliferoides	La Visite Robber Frog	CR	Yes															X												
Eleutherodactylus glaphycompus		EN	Yes															X												

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Eleutherodactylus grabhami		EN	Yes																X											
Eleutherodactylus grahami		EN	Yes															X												
Eleutherodactylus greyi		EN	Yes									X																		
Eleutherodactylus griphus		CR	Yes																X											
Eleutherodactylus gryllus	Cricket Coqui	EN	Yes																			X								
Eleutherodactylus guanahacabibes		EN	Yes									X																		
Eleutherodactylus guantanamera		VU	Yes									X																		
Eleutherodactylus gundlachi		EN	Yes									X																		
Eleutherodactylus haitianus		EN	Yes												X															
Eleutherodactylus hedricki	Hedrick's Coqui	EN	Yes																			X								
Eleutherodactylus heminota	Half-stripe Bromeliad Frog	EN	Yes												X			X												
Eleutherodactylus hypostenor	Baoruco Burrowing Frog	EN	Yes												X			X												
Eleutherodactylus iberia		CR	Yes									X																		
Eleutherodactylus intermedius		EN	Yes									X																		
Eleutherodactylus ionthus		EN	Yes									X																		

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Eleutherodactylus jamaicensis		EN	Yes																X											
Eleutherodactylus jaumei		CR	Yes									X																		
Eleutherodactylus jugans	La Selle Dusky Frog	CR	Yes												X			X												
Eleutherodactylus klinikowskii		EN	Yes									X																		
Eleutherodactylus lamprotes	Castillon Robber Frog	CR	Yes															X												
Eleutherodactylus leberi		EN	Yes									X																		
Eleutherodactylus lentus	Yellow Mottled Coqui	EN	Yes																											X
Eleutherodactylus leoncei	Southern Pastel Frog	CR	Yes												X			X												
Eleutherodactylus limbatus		VU	Yes									X																		
Eleutherodactylus locustus	Interior Robber Frog	CR	Yes																			X								
Eleutherodactylus lucioi		CR	Yes															X												
Eleutherodactylus luteolus		EN	Yes																X											
Eleutherodactylus mariposa		CR	Yes									X																		
Eleutherodactylus melacara		EN	Yes									X																		
Eleutherodactylus minutus		EN	Yes												X															

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Eleutherodactylus monensis	Mona Coqui	VU	Yes																			X								
Eleutherodactylus montanus		EN	Yes												X															
Eleutherodactylus nortoni	Spiny Giant Frog	CR	Yes												X			X												
Eleutherodactylus nubicola		EN	Yes																X											
Eleutherodactylus orcutti	Arntully Robber Frog	CR	Yes																X											
Eleutherodactylus orientalis		CR	Yes									X																		
Eleutherodactylus oxyrhyncus	Rednose Robber Frog	CR	Yes												X			X												
Eleutherodactylus parabates	Independencia Robber Frog	CR	Yes												X			X												
Eleutherodactylus parapelates	Casillon Robber Frog	CR	Yes															X												
Eleutherodactylus patriciae		EN	Yes												X															
Eleutherodactylus paulsoni	Paulson's Robber Frog	CR	Yes															X												
Eleutherodactylus pentasyringos		VU	Yes																X											
Eleutherodactylus pezopetrus		CR	Yes									X																		
Eleutherodactylus pictissimus	Hispaniolan Yellow-mottled Frog	VU	Yes												X			X												

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Eleutherodactylus pinarensis		EN	Yes									X																		
Eleutherodactylus pinchoni		EN	Yes														X													
Eleutherodactylus pituinus		EN	Yes												X															
Eleutherodactylus poolei		CR	Yes															X												
Eleutherodactylus portoricensis	Puerto Rican Robber Frog	EN	Yes																			X								
Eleutherodactylus probolaeus		EN	Yes												X															
Eleutherodactylus rhodesi		CR	Yes															X												
Eleutherodactylus richmondi	Richmond's Coqui	CR	Yes																			X								
Eleutherodactylus ricordii		VU	Yes									X																		
Eleutherodactylus rivularis		CR	Yes									X																		
Eleutherodactylus ronaldi		VU	Yes									X																		
Eleutherodactylus rufifemoralis	Red-legged Robber Frog	CR	Yes												X															
Eleutherodactylus ruthae		EN	Yes												X			X												
Eleutherodactylus schmidti	Schmidt's Robber Frog	CR	Yes												X			X												
Eleutherodactylus schwartzi	Virgin Islands Coqui	EN	Yes							X																				

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Eleutherodactylus sciagraphus		CR	Yes															X												
Eleutherodactylus simulans		EN	Yes									X																		
Eleutherodactylus symingtoni	Symington's Robber Frog	CR	Yes									X																		
Eleutherodactylus tetajulia		CR	Yes									X																		
Eleutherodactylus thomasi		EN	Yes									X																		
Eleutherodactylus thorectes		CR	Yes															X												
Eleutherodactylus toa		EN	Yes									X																		
Eleutherodactylus turquinensis		CR	Yes									X																		
Eleutherodactylus unicolor	Dull Robber Frog	VU	Yes																			X								
Eleutherodactylus varians		VU	Yes									X																		
Eleutherodactylus ventrilineatus		CR	Yes															X												
Eleutherodactylus warreni	Warren's Robber Frog	CR	Yes															X												
Eleutherodactylus wetmorei	Tiburon Whistling Frog	VU	Yes												X			X												
Eleutherodactylus wightmanae	Melodius Coqui	EN	Yes																			X								
Eleutherodactylus zeus		EN	Yes									X																		

Scientific Name	English Name	Red List Status	Island endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Eleutherodactylus zugi		EN	Yes									X																		
Eleutherodactylus michaelschmidi		EN	Yes									X																		
Eleutherodactylus juanariveroi		CR	Yes																			X								
Eleutherodactylus diplasius	Patternless Whistling Frog	EN	Yes															X												
Eleutherodactylus notidodes	Neiba Telegraph Frog	EN	Yes												X			X												
Eleutherodactylus sommeri		EN	Yes												X			X												
Osteopilus vastus	Hispaniolan Giant Treefrog	VU	Yes												X			X												
Hypsiboas heilprini	Hispaniolan Green Treefrog	VU	Yes												X			X												
Osteopilus crucialis	Jamaican Snoring Frog	EN	Yes																X											
Osteopilus marianae	Yellow Bromeliad Frog	EN	Yes																X											
Osteopilus pulchrilineatus	Hispaniolan Yellow Treefrog	VU	Yes												X			X												
Osteopilus wilderi	Green Bromeliad Frog	EN	Yes																X											
Leptodactylus fallax	Mountain Chicken	CR												X							X									

Appendix 1.5 Fish

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Anguilla rostrata	American Eel	EN		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Neoopisthopterus cubanus	Cuban Longfin Herring	VU					X					X																		
Gambusia dominicensis	Domingo Mosquito Fish	EN	Yes												X			X												
Megalops atlanticus	Tarpon	VU		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X
Coryphaenoides rupestris	Roundnose Grenadier	CR					X																							
Lucifuga spelaeotes	Bahama Cavefish	VU	Yes				X																							
Lucifuga simile	Blind Cave Brotula	CR	Yes									X																		
Lucifuga subterranea		VU	Yes									X																		
Lucifuga teresinarum		VU	Yes									X																		
Stygicola dentata		VU	Yes									X																		
Lucifuga lucayana	Lucayan Cave Brotula	EN	Yes				X																							
Hyporthodus nigritus	Warsaw Grouper	CR					X	X			X	X			X			X	X						X		X		X	
Hyporthodus niveatus	Snowy Grouper	VU				X	X	X	X			X	X			X									X		X			
Epinephelus striatus	Nassau Grouper	EN		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	X	X	X	X
Hyporthodus flavolimbatus	Yellowedge Grouper	VU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	X	X	X	X

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Mycteroperca interstitialis	Yellowmouth Grouper	VU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	X	X	X	X
Epinephelus itajara	Atlantic Goliath Grouper	CR		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	X	X	X	X
Coryphopterus hyalinus	Glass Goby	VU					X					X						X											X	
Psilotris boehlkei	Boehlke's Goby	VU							X														X							X
Coryphopterus thrix	Bartail Goby	VU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Coryphopterus eidolon	Pallid Goby	VU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Coryphopterus tortugae	Patch-reef Goby	VU		X	X	X	X	X	X	X	X		X	X		X	X		X	X	X	X	X	X	X	X	X	X	X	X
Coryphopterus venezuelae	Sand-canyon Goby	VU		X	X	X	X		X	X	X		X	X			X				X	X	X	X		X		X	X	X
Coryphopterus lipernes	Peppermint Goby	VU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Coryphopterus personatus	Masked Goby	VU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Coryphopterus alloides	Barfin Goby	VU		X	X		X		X	X	X	X	X	X	X		X	X			X	X	X			X		X	X	X
Elacatinus atronasus	Exuma Goby	EN	Yes				X																							
Elacatinus prochilos	Broadstripe Goby	VU		X	X			X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Elacatinus cayman	Cayman Cleaner Goby	EN	Yes								X																			
Tigrigobius harveyi	Cayman Greenbanded Goby	EN	Yes								X																			

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Elacatinus centralis	Cayman Sponge Goby	EN	Yes								X																			
Makaira nigricans	Blue Marlin	VU		X	X		X	X	X	X		X	X	X	X	X	X	X	X		X	X		X	X	X	X	X	X	X
Kajikia albida	White Marlin	VU		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	X	X	X	
Lachnolaimus maximus	Hogfish	VU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X
Lutjanus cyanopterus	Cubera Snapper	VU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X
Rhomboplites aurorubens	Vermilion Snapper	VU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Pomatomus saltatrix	Bluefish	VU				X			X			X	X																	
Thunnus obesus	Bigeye Tuna	VU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Thunnus thynnus	Atlantic Bluefin Tuna	EN		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hippocampus erectus	Lined Seahorse	VU					X					X						X						X						
Balistes capriscus	Gray Triggerfish	VU		X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X
Mola mola	Ocean Sunfish	VU		X	X		X	X	X	X	X	X		X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X

Appendix 1.6 Sharks and Rays

Scientific Name	English Name	Red List Status	Island endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Carcharhinus obscurus	Dusky Shark	VU					X					X																		
Carcharhinus plumbeus	Sandbar Shark	VU					X					X																		
Carcharhinus falciformis	Silky Shark	VU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Carcharhinus longimanus	Oceanic Whitetip Shark	VU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
Carcharhinus signatus	Night Shark	VU										X																		
Sphyrna lewini	Scalloped Hammerhead	EN		X	X	X	X	X			X	X		X	X	X	X	X	X			X		X	X		X			
Sphyrna mokarran	Great Hammerhead	EN		X	X	X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Alopias vulpinus	Common Thresher	VU					X			X		X			X				X			X								X
Alopias superciliosus	Bigeye Thresher	VU					X					X																		
Carcharodon carcharias	Great White Shark	VU					X	X																						
Isurus oxyrinchus	Shortfin Mako	VU		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X
Isurus paucus	Longfin Mako	VU										X																		
Carcharias taurus	Sand Tiger Shark	VU					X																							
Rhincodon typus	Whale Shark	EN		X	X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X		X	X	X	X	X	X	X
Mobula tarapacana	Sicklefin Devil Ray	VU																							X					
Manta birostris	Giant Manta Ray	VU							X		X	X	X		X				X							X		X		
Pristis pectinata	Smalltooth Sawfish	CR		X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	X		X	X	X	X	X	X	X
Squalus acanthias	Spiny Dogfish	VU					X					X																		

Appendix 1.7 Corals and Fire Corals

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Acropora palmata	Elkhorn Coral	CR		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	
Acropora cervicornis	Staghorn Coral	CR		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	
Agaricia lamarcki	Lamarck's Sheet Coral	VU		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	
Montastraea franksi		VU		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	
Montastraea annularis	Boulder Star Coral	EN		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	
Montastraea faveolata		EN		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	
Fungia curvata		VU															X													
Dichocoenia stokesii	Elliptical Star Coral	VU		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	
Dendrogyra cylindrus	Pillar Coral	VU		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	
Mycetophyllia ferox	Rough Cactus Coral	VU		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	
Oculina varicosa	Large Ivory Coral	VU		X	X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	
Pocillopora elegans		VU															X													
Pocillopora inflata		VU															X													
Psammocora stellata		VU															X													
Millepora striata		EN			X				X				X	X			X				X		X		X					

Appendix 1.8 Flowering plants (Magnoliopsida)

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Megalopanax rex		CR	Yes									X																		
Dendropanax ovalifolius		VU	Yes																X											
Schefflera stearnii		EN	Yes																X											
Dendropanax cordifolius		CR	Yes																X											
Dendropanax grandis		CR	Yes																X											
Dendropanax portlandianus		VU	Yes																X											
Dendropanax grandiflorus		CR	Yes																X											
Dendropanax filipes		CR	Yes																X											
Dendropanax blakeanus		VU	Yes																X											
Schefflera troyana		VU	Yes																X											
Schefflera urbaniana		VU	Yes																	X										
Schefflera gleasonii		VU	Yes																			X								
Verbesina rupestris		VU	Yes																X											
Verbesina caymanensis		CR	Yes								X																			
Buxus vahlii	Vahl's Boxwood	CR																	X			X								
Buxus arborea		VU	Yes																X											
Lepidium filicaule		EN	Yes																										X	
Leptocereus quadricostatus	Sebucan	EN								X												X								

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Leptocereus arboreus		EN	Yes									X																		
Consolea spinosissima		EN	Yes																X											
Pereskia quisqueyana		CR	Yes												X															
Leptocereus grantianus		CR	Yes																			X								
Pereskia marcanoi		VU	Yes												X			X												
Leptocereus leonii		CR	Yes									X																		
Melocactus matanzanus	Dwarf Turk's Cap Cactus	EN	Yes									X																		
Pseudorhipsalis alata		EN	Yes																X											
Dendrocereus nudiflorus		EN	Yes									X																		
Cylindropuntia hystrix		CR	Yes									X																		
Leptocereus wrightii		CR	Yes									X																		
Pereskia zinniiflora		VU	Yes									X																		
Leptocereus paniculatus		VU	Yes												X			X												
Melocactus stramineus		EN	Yes			X																								
Pereskia portulacifolia		VU	Yes												X			X												
Escobaria cubensis	Holguín Dwarf Cactus	EN	Yes									X																		

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Leptocereus scopulophilus		CR	Yes									X																		
Leptocereus carinatus		CR	Yes									X																		
Consolea falcata		CR	Yes															X												
Neea ekmanii		EN	Yes									X																		
Pisonia ekmani		EN	Yes									X																		
Pisonia margaretiae		CR	Yes								X																			
Ilex puberula		VU	Yes																X											
Ilex florifera		VU	Yes																X											
Ilex jamaicana		EN	Yes																X											
Ilex subtriflora		CR	Yes																X											
Ilex sintenisii	Sintenis' Holly	EN	Yes																			X								
Ilex vaccinoides		VU	Yes																X											
Ilex cookii	Cook's Holly	CR	Yes																			X								
Maytenus cymosa	Caribbean Mayten	EN								X												X								X
Maytenus ponceana		VU	Yes																			X								
Gyminda orbicularis		VU	Yes									X																		
Maytenus harrisii		CR	Yes																X											
Tetrasiphon jamaicensis		EN	Yes																X											
Maytenus microcarpa		VU	Yes																X											
Tapura orbicularis		VU	Yes									X																		

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Mappia racemosa		VU										X			X			X	X			X								
Viburnum arboreum		VU	Yes																X											
Chrysophyllum claraense		CR	Yes									X																		
Manilkara excisa		EN	Yes																X											
Pouteria semecarpifolia		VU												X			X			X					X		X			
Sideroxylon bullatum		VU	Yes																X											
Manilkara gonavensis		CR	Yes															X												
Manilkara pleeana		VU	Yes																			X								
Chrysophyllum pauciflorum		VU																				X								X
Manilkara mayarensis		EN	Yes									X																		
Manilkara valenzuelana		VU										X			X			X												
Micropholis polita		VU	Yes									X																		
Pouteria aristata		VU	Yes									X																		
Pouteria cubensis		EN	Yes									X																		
Pouteria micrantha		EN	Yes									X																		
Pouteria moaensis		EN	Yes									X																		
Sideroxylon acunae		VU	Yes									X																		
Sideroxylon angustum		EN	Yes									X																		

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Sideroxylon anomalum		VU	Yes												X															
Sideroxylon confertum		VU	Yes									X																		
Sideroxylon dominicanum		VU	Yes												X															
Sideroxylon jubilla		VU	Yes									X																		
Sideroxylon rubiginosum		CR	Yes												X															
Pouteria pallida		EN												X			X			X					X					
Pouteria hotteana		EN																X				X								
Styrax portoricensis		CR	Yes																			X								
Symplocos tubulifera		VU	Yes																X											
Lyonia elliptica		EN	Yes									X																		
Lyonia maestrensis		EN	Yes									X																		
Vaccinium bissei		VU	Yes									X																		
Stahlia monosperma		EN													X							X								X
Acacia belairioides		CR	Yes									X																		
Acacia daemon		EN	Yes									X																		
Acacia roigii		CR	Yes									X																		
Acacia zapatensis		EN	Yes									X																		
Pithecellobium savannarum		VU	Yes									X																		
Cynometra cubensis		EN	Yes									X																		

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Ateleia salicifolia		VU	Yes									X																		
Belairia parvifolia		VU	Yes									X																		
Erythrina elenae		VU	Yes									X																		
Harpalyce maisiana		VU	Yes									X																		
Inga dominicensis		VU	Yes											X																
Hymenaea torrei		VU	Yes									X																		
Ateleia gummifera		EN	Yes									X																		
Behaimia cubensis		EN	Yes									X																		
Acacia bucheri		EN	Yes									X																		
Acacia villosa		VU	Yes																X											
Ormosia jamaicensis		EN	Yes																X											
Erythrina eggersii	Cock's-spur	EN																				X								X
Calliandra comosa		VU	Yes																X											
Calliandra pilosa		VU	Yes																X											
Abarema abbottii		VU	Yes												X															
Pseudosamanea cubana		VU	Yes									X																		
Albizia leonardii		VU	Yes															X												
Calliandra paniculata		VU	Yes																X											
Sophora saxicola		EN	Yes																X											
Inga martinicensis		VU	Yes																	X										
Albizia berteriana		VU										X			X			X	X											
Chamaecrista bucherae		VU	Yes									X																		

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Senna domingensis		VU										X			X			X												
Acacia anegadensis	Pokemeboy	CR	Yes							X																				
Mimosa domingensis		VU	Yes												X			X												
Mora ekmanii		VU	Yes												X			X												
Chamaecrista caribaea		VU					X											X											X	
Cameraria microphylla		EN	Yes									X																		
Tabernaemontana apoda		CR	Yes									X																		
Strempeliopsis arborea		VU	Yes																X											
Tabernaemontana ochroleuca		VU	Yes																X											
Tabernaemontana ovalifolia		EN	Yes																X											
Tabernaemontana oppositifolia		VU	Yes																			X								
Metastelma anegadense		CR	Yes							X																				
Macrocarpaea thamnoides		VU	Yes																X											
Stenostomum portoricense		VU	Yes																			X								
Psychotria cathetoneura		VU	Yes									X																		

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Palicourea wilesii		VU	Yes																X											
Psychotria domatiata		VU	Yes																X											
Rondeletia brachyphylla		EN	Yes																X											
Exostema triflorum		VU	Yes																X											
Exostema orbiculatum		CR	Yes																X											
Rondeletia amplexicaulis		EN	Yes																X											
Rondeletia subsessilifolia		VU	Yes																X											
Psychotria clusioides		EN	Yes																X											
Psychotria bryonicola		CR	Yes																X											
Psychotria siphonophora		EN	Yes																X											
Psychotria foetens		VU	Yes																X											
Rondeletia adamsii		VU	Yes																X											
Rondeletia portlandensis		VU	Yes																X											
Rondeletia dolphinensis		EN	Yes																X											
Rondeletia cincta		CR	Yes																X											
Phialanthus revolutus		EN	Yes																X											
Phialanthus jamaicensis		EN	Yes																X											

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Scolosanthus howardii		EN	Yes																X											
Stenostomum tomentosum		CR	Yes																X											
Guettarda longiflora		CR	Yes																X											
Psychotria hanoverensis		CR	Yes																X											
Psychotria dasyophthalma		VU	Yes																X											
Psychotria clarendonensis		EN	Yes																X											
Psychotria plicata		VU	Yes																X											
Hamelia papillosa		VU	Yes																X											
Stenostomum sintenisii		VU	Yes																			X								
Psychotria danceri		CR	Yes																X											
Erithalis quadrangularis		VU	Yes																X											
Guettarda frangulifolia		VU	Yes																X											
Portlandia albiflora		CR	Yes																X											
Rondeletia elegans		VU	Yes																X											
Rondeletia hirsuta		VU	Yes																X											
Rondeletia hirta		VU	Yes																X											
Rondeletia pallida		VU	Yes																X											
Rondeletia racemosa		VU	Yes																X											

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Portlandia harrisii		VU	Yes																X											
Rondeletia clarendonensis		EN	Yes																X											
Stenostomum radiatum		VU										X			X			X												
Machaonia woodburyana		CR								X																				X
Rondeletia buxifolia	Pribby	CR	Yes																		X									
Rondeletia anguillensis		CR	Yes	X																										
Spermacoce capillaris		EN	Yes																										X	
Scolosanthus roulstonii		EN	Yes								X																			
Huertea cubensis		VU										X			X			X												
Juglans insularis		VU	Yes									X																		
Juglans jamaicensis	West Indian Walnut	VU										X			X			X				X								
Varronia wagnerorum	Wagners' Cordia	CR	Yes																			X								
Cordia valenzuelana		VU	Yes									X																		
Rochefortia acrantha		VU	Yes																X											
Cordia troyana		VU	Yes																X											
Cordia harrisii		VU	Yes																X											
Bourreria velutina		EN	Yes																X											
Varronia clarendonensis		VU	Yes																X											

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Varronia rupicola		CR	Yes							X																				
Varronia bellonis		CR	Yes																			X								
Salvia caymanensis		CR	Yes								X																			
Callicarpa ampla		CR																				X								X
Cornutia obovata		CR	Yes																			X								
Citharexylum ternatum		VU	Yes									X																		
Clerodendrum denticulatum		VU	Yes									X																		
Vitex acunae		VU	Yes									X																		
Clerodendrum calcicola		VU	Yes									X																		
Aegiphila caymanensis		CR	Yes								X																			
Hernandia cubensis		CR	Yes									X																		
Hernandia catalpifolia		VU	Yes																X											
Nectandra krugii		EN			X				X					X	X		X			X		X				X		X		
Ocotea harrisii		CR	Yes																X											
Ocotea staminoides		EN	Yes																X											
Nectandra caudatoacuminata		CR	Yes															X	X											
Nectandra minima		CR	Yes									X																		
Nectandra pulchra		CR	Yes															X												

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Ocotea robertsoniae		VU	Yes																X											
Cinnamomum parviflorum		VU										X			X			X												
Licaria cubensis		VU	Yes									X																		
Erythroxylum jamaicense		VU	Yes																X											
Erythroxylum incrassatum		VU	Yes																X											
Annona cristalensis		VU	Yes									X																		
Annona ekmanii		VU	Yes									X																		
Xylopia ekmanii		VU	Yes									X																		
Annona praetermissa	Wild Sour Sop	VU	Yes																X											
Pleodendron macranthum		CR	Yes																			X								
Cinnamodendron cubense		EN	Yes									X																		
Cinnamodendron corticosum		VU	Yes																X											
Magnolia minor		VU	Yes									X																		
Magnolia cubensis		VU	Yes									X																		
Magnolia dodecapetala		VU												X			X			X							X			
Magnolia domingensis		CR	Yes												X			X												
Magnolia ekmanii		CR	Yes															X												
Magnolia emarginata		CR	Yes															X												

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Magnolia hamorii		EN	Yes												X															
Magnolia pallescens		EN	Yes												X															
Magnolia portoricensis		EN	Yes																			X								
Magnolia splendens		EN	Yes																			X								
Magnolia cristalensis		EN	Yes									X																		
Rheedia aristata		EN	Yes									X																		
Clusia clarendonensis		VU	Yes																X											
Clusia portlandiana		VU	Yes																X											
Garcinia decussata		VU	Yes																X											
Cnidoscolus matosii		EN	Yes									X																		
Cnidoscolus rangel		EN	Yes									X																		
Victorinia regina		CR	Yes									X																		
Acidocroton verrucosus		VU	Yes																X											
Sebastiania fasciculata		EN	Yes																X											
Sebastiania spicata		EN	Yes																X											
Sebastiania alpina		VU	Yes																X											
Sebastiania crenulata		CR	Yes																X											
Sebastiania howardiana		CR	Yes																X											

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Lasiocroton harrisii		VU	Yes																X											
Grimmeodendron jamaicense		VU	Yes																X											
Lasiocroton fawcettii		VU	Yes																X											
Gymnanthes glandulosa		VU										X							X											
Bernardia trelawniensis		EN	Yes																X											
Argythamnia argentea		EN	Yes																										X	
Jatropha divaricata	Wild Oil Nut	VU									X								X											
Hieronima crassistipula		CR	Yes									X																		
Phyllanthus cauliflorus		VU	Yes																X											
Phyllanthus eximius		VU	Yes																X											
Hyeronima jamaicensis		VU	Yes																X											
Phyllanthus axillaris		EN	Yes																X											
Phyllanthus caymanensis		EN	Yes								X																			
Carpodiptera mirabilis		CR	Yes									X																		
Carpodiptera ophiticola		EN	Yes									X																		

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Wercklea flavovirens		CR	Yes																X											
Atkinsia cubensis		EN	Yes									X																		
Hildegardia cubensis		VU	Yes									X																		
Terminalia eriostachya		EN	Yes									X																		
Terminalia intermedia		EN	Yes									X																		
Terminalia arbuscula	White Olive	EN	Yes																X											
Bucida ophiticola		EN	Yes									X																		
Henriettea punctata		VU	Yes									X																		
Henriettea squamata		VU	Yes									X																		
Miconia perelegans		VU	Yes									X																		
Tetrazygia elegans		VU	Yes									X																		
Henriettea granularis		CR	Yes									X																		
Conostegia subprocera		EN	Yes																X											
Tetrazygia albicans		EN	Yes																X											
Miconia nubicola		EN	Yes																X											
Henriettea membranifolia		CR	Yes																			X								
Conostegia superba		VU	Yes																X											
Miconia pseudorigida		EN	Yes																X											

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Calyptranthes luquillensis	Luquillo Forest Lidflower	VU	Yes																			X								
Eugenia haematocarpa		EN	Yes																			X								
Marlierea sintenisii		VU	Yes																			X								
Psidium sintenisii		CR	Yes																			X								
Calyptranthes arenicola		CR	Yes									X																		
Calyptranthes flavo-viridis		CR	Yes									X																		
Calyptranthes polyneura		VU	Yes									X																		
Calyptranthes pozasiana		CR	Yes									X																		
Calyptranthes rostrata		EN	Yes									X																		
Eugenia aceitillo		EN	Yes									X																		
Eugenia acunai		EN	Yes									X																		
Eugenia acutissima		CR	Yes									X																		
Eugenia bayatensis		EN	Yes									X																		
Eugenia excisa		EN	Yes									X																		
Pimenta cainitoides		VU	Yes									X																		
Krokia pilotoana		VU	Yes									X																		
Mozartia emarginata		EN	Yes									X																		
Mozartia manacalensis		EN	Yes									X																		
Myrtus claraensis		CR	Yes									X																		

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Plinia rupestris		CR	Yes									X																		
Psidium havanense		EN	Yes									X																		
Myrcia paganii		CR	Yes																			X								
Calycolpus excisus		VU	Yes									X																		
Mozartia maestrensis		EN	Yes									X																		
Mitranthes clarendonensis		VU	Yes																X											
Mitranthes nivea		EN	Yes																X											
Mitranthes macrophylla		CR	Yes																X											
Calyptranthes discolor		EN	Yes																X											
Calyptranthes uniflora		CR	Yes																X											
Calyptranthes ekmanii		VU																X	X											
Calyptranthes nodosa		VU	Yes																X											
Calyptranthes acutissima		CR	Yes																X											
Calyptranthes capitata		VU	Yes																X											
Myrcia calcicola		VU	Yes																X											
Pimenta obscura	Wild Pimento	VU	Yes																X											
Pimenta richardii		EN	Yes																X											
Eugenia acutisepala		EN	Yes																X											

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Eugenia heterochroa		VU	Yes																X											
Eugenia sachetae		EN	Yes																X											
Eugenia lamprophylla		VU	Yes																X											
Eugenia brachythrix		VU	Yes																X											
Eugenia abbreviata		EN	Yes																X											
Eugenia schulziana		VU	Yes																X											
Eugenia sulcivenia		EN	Yes																X											
Eugenia rendlei		CR	Yes																X											
Eugenia nicholsii		EN	Yes																X											
Eugenia polypora		CR	Yes																X											
Eugenia brownei		VU	Yes																X											
Eugenia pycnoneura		EN	Yes																X											
Eugenia eperforata		EN	Yes																X											
Eugenia aboukirensis		CR	Yes																X											
Eugenia crassicaulis		EN	Yes																X											
Eugenia hanoverensis		CR	Yes																X											
Eugenia kellyana		CR	Yes																X											
Eugenia laurae		EN	Yes																X											
Eugenia woodburyana		CR	Yes																			X								

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Calyptranthes portoricensis		EN	Yes																			X								
Pimenta haitiensis		VU	Yes												X															
Calyptranthes kiaerskovii		CR								X												X								
Calyptranthes umbelliformis		VU	Yes																X											
Calyptranthes wilsonii		VU	Yes																X											
Eugenia crenata		VU	Yes																X											
Pimenta adenoclada		VU	Yes									X																		
Pimenta ferruginea		EN	Yes									X																		
Pimenta odiolens		VU	Yes									X																		
Pimenta oligantha		VU	Yes									X																		
Pimenta podocarpoides		EN	Yes									X																		
Pimenta filipes		VU	Yes									X																		
Calyptranthes thomasiana	Thomas' Lidflower	EN								X												X								X
Daphnopsis calcicola		VU	Yes									X																		
Weinmannia portlandiana		VU	Yes																X											
Peperomia simplex		VU									X								X											
Limonium bahamense	Heather	EN	Yes																										X	
Bunchosia linearifolia		VU	Yes									X																		

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Malpighia harrisii		VU	Yes																X											
Malpighia cauliflora		EN	Yes																X											
Malpighia proctorii		CR	Yes																X											
Malpighia obtusifolia		VU	Yes																X											
Bunchosia jamaicensis		VU	Yes																X											
Coccoloba proctorii		EN	Yes																X											
Coccoloba rugosa		EN	Yes																			X								
Coccoloba troyana		VU	Yes																X											
Coccoloba coriacea		VU	Yes									X																		
Coccoloba retirensis		CR	Yes									X																		
Ardisia urbanii		VU	Yes																X											
Ardisia brittonii		EN	Yes																X											
Wallenia sylvestris		VU	Yes																X											
Wallenia erythrocarpa		VU	Yes																X											
Ardisia jamaicensis		VU	Yes																X											
Ardisia byrsonimae		CR	Yes																X											
Wallenia elliptica		VU	Yes																X											
Wallenia fawcettii		VU	Yes																X											
Wallenia xylosteoides		VU	Yes																X											
Jacquinia proctorii	Wash Wood	VU									X								X											

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Doerpfeldia cubensis		EN	Yes									X																		
Sarcomphalus havanensis		EN	Yes									X																		
Rhamnidium dictyophyllum		EN	Yes																X											
Reynosia jamaicensis		CR	Yes																X											
Colubrina obscura		VU	Yes																X											
Auerodendron pauciflorum		CR	Yes																			X								
Auerodendron jamaicense		VU	Yes																X											
Cassipourea brittoniana		EN	Yes																X											
Cassipourea subsessilis		CR	Yes																X											
Cassipourea subcordata		CR	Yes																X											
Dendropemon caymanensis		CR	Yes								X																			
Schoepfia arenaria		EN	Yes																			X								
Ximenia roigii		VU	Yes									X																		
Schoepfia harrisii		VU	Yes																X											
Comocladia parvifoliola		CR	Yes																X											
Comocladia cordata		VU	Yes																X											
Bursera aromatica		VU	Yes																X											

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Bursera hollickii		EN	Yes																X											
Trichilia triacantha		CR	Yes																			X								
Trichilia pungens		EN	Yes									X																		
Cedrela odorata	Spanish Cedar	VU			X			X			X	X		X	X	X	X	X	X		X			X	X					
Swietenia macrophylla	Big Leaf Mahogany	VU												X																
Swietenia mahagoni	American Mahogany	EN		X	X		X				X	X		X	X	X	X		X	X	X		X	X	X	X	X		X	
Trichilia trachyantha		EN	Yes									X																		
Guarea jamaicensis		VU	Yes																X											
Guarea sphenophylla		VU	Yes												X			X												
Amyris polymorpha		VU	Yes									X																		
Helietta glaucescens		EN	Yes									X																		
Zanthoxylum flavum	West Indian Satinwood	VU		X			X					X			X				X			X			X					
Ravenia swartziana		CR	Yes																X											
Spathelia coccinea		CR	Yes																X											
Zanthoxylum harrisii		VU	Yes																X											
Zanthoxylum hartii		VU	Yes																X											
Zanthoxylum negrilense		EN	Yes																X											
Zanthoxylum thomasianum	St Thomas Prickly-ash	EN								X												X								X

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Allophylus roigii		VU	Yes									X																		
Euchorium cubense		EN	Yes									X																		
Allophylus pachyphyllus		VU	Yes																X											
Alvaradoa jamaicensis		VU	Yes																X											
Picrasma excelsa		VU										X			X			X	X			X					X			
Stenandrium carolinae	Caroline's Pink	CR	Yes																										X	
Catalpa brevipes		VU										X			X			X												
Tabebuia anafensis		VU	Yes									X																		
Tabebuia bibracteolata		VU	Yes									X																		
Tabebuia furfuracea		VU	Yes									X																		
Tabebuia jackiana		VU	Yes									X																		
Tabebuia oligolepis		VU	Yes									X																		
Ekmanianthe longiflora		EN										X			X			X												
Jacaranda arborea		VU	Yes									X																		
Spirotecoma apiculata		VU	Yes									X																		
Spirotecoma holguinensis		EN	Yes									X																		
Tabebuia arimaoensis		VU	Yes									X																		
Tabebuia dubia		VU	Yes									X																		

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Tabebuia elongata		EN	Yes									X																		
Tabebuia hypoleuca		VU	Yes									X																		
Tabebuia polymorpha		VU	Yes									X																		
Tabebuia shaferi		VU	Yes									X																		
Chionanthus proctorii		CR	Yes																X											
Chionanthus adamsii		EN	Yes																X											
Chionanthus jamaicensis		VU	Yes																X											
Chionanthus caymanensis	Ironwood	EN	Yes								X																			
Fraxinus caroliniana	Carolina Ash	EN										X																		
Synapsis ilicifolia		EN	Yes									X																		
Agalinis kingsii		CR	Yes								X																			
Goetzea elegans	Beautiful Goetzea	EN	Yes																			X								
Brunfelsia portoricensis	Puerto Rico Raintree	EN	Yes																			X								
Solanum drymophilum		CR	Yes																			X								
Brunfelsia jamaicensis		VU	Yes																X											
Brunfelsia splendida		VU	Yes																X											
Brunfelsia membranacea		VU	Yes																X											

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Ouratea elegans		CR	Yes																X											
Ternstroemia luquillensis		CR	Yes																			X								
Ternstroemia subsessilis		CR	Yes																			X								
Freziera cordata		VU												X			X			X										
Ternstroemia calycina		EN	Yes																X											
Ternstroemia granulata		CR	Yes																X											
Ternstroemia howardiana		VU	Yes																X											
Ternstroemia bullata		CR	Yes																X											
Ternstroemia glomerata		CR	Yes																X											
Cleyera vaccinioides		VU	Yes												X			X												
Cleyera bolleana		VU	Yes												X			X												
Laplacea curtyana		CR	Yes									X																		
Gordonia villosa		EN	Yes																X											
Ficus meizonochlamys		EN	Yes									X																		
Lunania dodecandra		EN	Yes									X																		
Lunania elongata		EN	Yes									X																		
Xylosma proctorii		VU	Yes																X											
Xylosma pachyphyllum	Spiny Logwood	CR	Yes																			X								

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Banara wilsonii		EN	Yes									X																		
Casearia crassinervis		VU	Yes									X																		
Lunania cubensis		VU	Yes									X																		
Lunania polydactyla		VU	Yes																X											
Lunania racemosa		VU	Yes																X											
Samyda glabrata		VU	Yes																X											
Samyda villosa		VU	Yes																X											
Banara vanderbiltii		CR	Yes																			X								
Xylosma serrata		CR	Yes																		X									
Casearia staffordiae		CR	Yes								X																			
Banara caymanensis		CR	Yes								X																			
Guaiacum officinale	Commoner Lignum Vitae	EN		X	X		X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X

Appendix 1.9 Monocotyledon (Liliopsida)

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Attalea crassispatha		CR	Yes															X												
Bactris jamaicana	Prickly Pole	VU	Yes																X											
Coccothrinax borhidiana		CR	Yes									X																		
Coccothrinax pauciramosa		VU	Yes									X																		
Colpothrinax wrightii		VU	Yes									X																		
Copernicia brittonorum		VU	Yes									X																		
Copernicia ekmanii		EN	Yes															X												
Copernicia gigas		VU	Yes									X																		
Gaussia attenuata		VU	Yes																			X								
Gaussia spirituana		EN	Yes									X																		
Pseudophoenix ekmanii		CR	Yes												X															
Pseudophoenix lediniana		CR	Yes															X												
Roystonea lenis		VU	Yes									X																		
Roystonea stellata		EN	Yes									X																		
Hemithrinax ekmaniana		CR	Yes									X																		
Coccothrinax proctorii	Thatch Palm	EN	Yes								X																			
Halophila baillonii		VU				X			X				X				X													X

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Agave caymanensis		EN	Yes								X																			
Encyclia caicensis	Wild Shallot	EN	Yes																										X	
Epidendrum montserratense	Montserrat Orchid	CR	Yes																		X									
Psychilis olivacea		VU	Yes												X			X												
Acianthera compressicaulis		EN	Yes												X			X												
Dendrophylax fawcettii		CR	Yes								X																			
Encyclia kingsii		CR	Yes								X																			
Myrmecophila thomsoniana	Banana Orchid	EN	Yes								X																			
Galeandra bicarinata	Two-Keeled Hooded Orchid	EN										X																		
Wittmackia caymanensis	Old George	CR	Yes								X																			

Appendix 1.10 Conifers (Pinopsida)

Scientific Name	English Name	Red List Status	Island endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten
Juniperus saxicola		CR	Yes									X																
Juniperus barbadensis	West Indies Juniper	VU					X					X							X						X			
Juniperus gracilior		EN	Yes												X			X										
Pinus occidentalis	Hispaniolan Pine	EN	Yes												X			X										
Pinus tropicalis	Tropical Pine	VU	Yes									X																
Podocarpus hispaniolensis		EN	Yes												X													
Podocarpus purdieanus	Yacca	EN	Yes																X									
Podocarpus urbanii	Blue Mountain Yacca	CR	Yes																X									
Podocarpus buchii		EN	Yes												X			X										
Podocarpus angustifolius		VU	Yes									X																

Appendix 1.11 Cycads (Cycadopsida)

Scientific Name	English Name	Red List Status	Isand endemic	Anguilla	Antigua and Barbuda	Aruba	The Bahamas	Barbados	Bonaire, Sint Eustatius and Saba	British Virgin Islands	Cayman Islands	Cuba	Curaçao	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin	Saint Vincent and the Grenadines	Sint Maarten	Turks and Caicos Islands	US Virgin Islands
Microcycas calocoma		CR	Yes									X																		
Zamia portoricensis		EN	Yes																			X								
Zamia lucayana		EN	Yes				X																							
Zamia angustifolia		VU					X					X																		
Zamia pygmaea		CR	Yes									X																		
Zamia stricta		VU	Yes									X																		
Zamia erosa		VU										X							X			X								

Appendix 2 KBA Identification Methodology

Global Standard for the Identification of Key Biodiversity Areas: Current Criteria and Differences to Previous KBA Processes

Key Biodiversity Areas (KBAs) are 'sites contributing significantly to the global persistence of biodiversity' in terrestrial, freshwater and marine ecosystems. The recent Global Standard for the Identification of Key Biodiversity Areas (IUCN 2016) sets out the agreed criteria for the identification of KBAs worldwide and establishes baselines for the identification process.

This Standard replaces the former KBA methodology set out in Langhammer *et al*., 2007. It expands the two former criteria (vulnerability and irreplaceability) and five sub-criteria into 11 criteria and ten sub-criteria, clustered in five categories.

Summary of KBA categories and criteria:

Category	Criteria	Definition
A. Threatened biodiversity	A1: Threatened species. S*ub-criteria: A1a, A1b, A1c, A1, A1e.*	Sites qualifying as KBAs under criterion A1 hold a significant proportion of the global population size of a species facing a high risk of extinction and so contribute to the global persistence of biodiversity at genetic and species levels.
	A2: Threatened ecosystem types	Sites qualifying as KBAs under criterion A2 hold a significant proportion of the global extent of an ecosystem type facing a high risk of collapse and so contribute to the global persistence of biodiversity at the ecosystem level.
B. Geographically restricted biodiversity	B1: Individual geographically restricted species	Sites qualifying as KBAs under criterion B1 hold a significant proportion of the global population size of a geographically restricted species and so contribute significantly to the global persistence of biodiversity at the genetic and species level.
	B2: Co-occurring geographically restricted species	Sites qualifying as KBAs under criterion B2 hold a significant proportion of the global population size of multiple restricted-range species, and so contribute significantly to the global persistence of biodiversity at the genetic and species level
	B3: Geographically restricted assemblages *Sub-criteria: B1a; B1b; B1c.*	Sites qualifying as KBAs under criterion B3 hold assemblages of species within a taxonomic group that are globally restricted and so contribute significantly to the global persistence of biodiversity at the genetic, species and ecosystem levels.
	B4: Geographically restricted ecosystem types	Sites qualifying as KBAs under criterion B4 hold a significant proportion of the global extent of a geographically restricted ecosystem type and so contribute significantly to the global persistence of biodiversity at the species and ecosystem level.
C. Ecological integrity	C	Sites qualifying as KBAs under criterion C hold wholly intact ecological communities with supporting large-scale ecological processes and so contribute significantly to the global persistence of biodiversity at the ecosystem level.

Category	Criteria	Definition
D. Biological processes	D1: Demographic aggregations. *Sub-criteria*: D1a, D1b	Sites qualifying as KBAs under criterion D1 hold a significant proportion of the global population size of a species during one or more life history stages or processes, and so contribute significantly to the global persistence of biodiversity at the species level.
	D2: Ecological refugia	Sites qualifying as KBAs under criterion D2 hold a significant proportion of the global population size of a species during periods of environmental stress, and so contribute significantly to the global persistence of biodiversity at the species level
	D3: Recruitment sources	Sites qualifying as KBAs under criterion D3 are where a significant proportion of the global population size of a species is produced, and so contribute significantly to the global persistence of biodiversity at the species level.
E. Irreplaceability through quantitative analysis.	E	Sites qualifying as KBAs under criterion E have very high irreplaceability for the global persistence of biodiversity as identified through a complementarity based quantitative analysis of irreplaceability.

The criteria can be applied to ecosystems (criteria A2 and B4) and taxa at the macroscopic level in terrestrial, inland water and marine environments, although all KBA criteria may not be relevant to all elements of biodiversity.

Beyond changes in the criteria, the new Standard establishes new thresholds (i.e., a given percentage of the species' global population at the site, plus a minimum number of *reproductive units*) and additional documentation requirements (see link below). KBA identification processes have to be highly inclusive, consultative, bottom-up exercises involving stakeholders at the national level. KBA identification should build on the existing network of KBAs, including Important Bird and Biodiversity Areas (IBAs) and Alliance for Zero Extinction (AZE) sites, and new data should seek to strengthen and expand the network of these sites. All site proposals must undergo independent, scientific review.

Another important change that comes with the new Standard is the formalization of the KBA identification process into *proposal*, *review*, *nomination* and *confirmation* steps. And according to this process, which has been endorsed by the KBA Partnership,[63] a site can only can be officially confirmed as a KBA by the KBA Secretariat, which has now been established. In addition to KBA Secretariat involvement, only sites that meet the required documentation standards can be confirmed as KBAs.

For more details on KBAs and the new Standard, please consult the following links:

- World Database of KBAs: http://www.keybiodiversityareas.org
- KBA Standard: https://portals.iucn.org/library/node/46259
- Documentation Standards: http://www.keybiodiversityareas.org/userfiles/files/Draft_KBA_documentation_standards_for_KBA_website.pdf

[63] The members of the KBA Partnership are: Amphibian Survival Alliance, BirdLife International, CI, CEPF. Global Wildlife Conservation, IUCN, Natureserve, Rainforest Trust, RSPB, Wildlife Conservation Society, and WWF.

KBA Identification Process in the CEPF-eligible Countries

The introduction of the 2016 KBA Standard (including the formalization of the four-step KBA identification process) has two important implications for any CEPF ecosystem profiling exercise, both of which mark a departure from previous practice. First, unlike under the former process, the presence of a trigger species is not enough to confirm a site as a global KBA. Second, the formal confirmation of a site as a global KBA is now the sole responsibility of the KBA Secretariat.

The review of site outcomes for the 2017 CEPF Caribbean ecosystem profile update was limited to CEPF-eligible countries. KBAs in the other countries and territories, identified under the previous criteria (Langhammer *et al.* 2007), are presented in Section 5.2. At some point in the future, these KBAs should be re-assessed against the new KBA Standard in order to resolve their global/regional status.

During the CEPF re-profiling process, information from existing datasets (IBAs, previously identified KBAs, AZE sites and protected areas) was updated with new data provided by national experts between July 20107 and January 2018 via e-mail and an interactive microsite created for stakeholder review and feedback. As part of this process, overlapping boundaries between KBAs (IBAs, previously identified KBAs, AZEs etc.) were addressed. This was an important and challenging aspect of the process but according to the new guidance, KBAs cannot overlap each other. The delimitation and information about some sites in CEPF-eligible countries are still under discussion and this is an issue that will also have to be resolved for the other KBAs in the Caribbean and elsewhere: unlike before, a KBA can no longer be confirmed without agreed site delimitation.

Criterion A1 (threatened species) was used primarily for this KBA identification/update but the following criteria were also applied when possible, and particularly with birds:

- B1 (individual geographically restricted species).
- B2 (co-occurring geographically restricted species).
- D1: (demographic aggregations).

The remaining criteria and sub-criteria could not be applied due to the lack of data and formal guidance on their application. At the time of completing this ecosystem profile, additional guidelines were being developed. The database and structures (Regional Focal Points) needed for completing the process/application were also not in place at the time of writing. This means that the Caribbean ecosystem profile update could only propose sites as KBAs and their formal confirmation by the KBA Secretariat is still pending.

The proposal process entailed gathering information from the review of existing KBAs (including IBAs, and AZEs) and protected areas to update the species and site datasets and carrying out analyses based on the criteria of the new Standard, as described above. This verified whether or not a site triggered the KBA criteria and met the required documentation standards. Sites not meeting the minimum information requirement under the documentation standards (which goes far beyond confirmed presence of a species in a given site) have not been included in the outcomes section in this ecosystem profile (Chapter 5). According to the new Global Standard, any site that has at least one species with enough information available (population figures and references) to

trigger one of the KBA criteria can be proposed as a KBA, pending review, nomination and confirmation. This is an important departure and technical distinction from former KBA identification processes, in which the confirmed presence of a qualifying species was enough to trigger the KBA criteria and, therefore, the confirmation of a KBA by the profiling team without any external involvement.

Compiling and documenting additional information for sites, such as complete bibliographies, delineation rationale, and KBA nomination history is beyond the scope of this profiling process and will require additional national consultation. Therefore, the sites presented in this ecosystem profile as KBAs are, technically speaking, proposed KBAs.

All proposed KBAs in this document are expected to be formally confirmed as global KBAs once the KBA identification process can be completed, in keeping with the requirements of the new Global Standard. This includes the compilation of population estimates, consultation processes, review by external experts, nomination, and formal confirmation by the KBA Secretariat. It is possible that this may lead to some minor changes and updates, including site name updates, amendments to the number of trigger species, and small adjustments to site boundaries. It is important to note that some of the sites that did not trigger any KBA criteria during our assessment could later be proposed and confirmed as KBAs when more information about them becomes available.

Even though additional steps are needed to confirm the site outcomes in CEPF-eligible countries as global KBAs, the process undertaken as part of the ecosystem profile update ensures that the sites identified for CEPF investment meet the new KBA Standard. In addition to identifying sites for CEPF investment, the ecosystem profile update for the Caribbean Islands Biodiversity Hotspot has laid the groundwork for comprehensive national KBA identification processes once additional resources are invested.

Appendix 3 Site Outcomes in the Caribbean Islands Biodiversity Hotspot

Appendix 3.1 KBAs in the CEPF-eligible Countries

Country	CEPF Codes	Site Name	KBA Criteria	Area (ha)	Percentage in Protected Area(s)	Protection Status	CEPF Priority Site	Mammals	Birds	Reptiles	Amphibians	Fish	Sharks and Rays	Flowering plants	Monocotyledons	Conifers	Cycads
Antigua and Barbuda	ATG1	Bethesda Dam	A1b	1	0	Not protected		X									
Antigua and Barbuda	ATG2	Codrington Lagoon and the Creek	A1b	6,710	100	Protected		X									
Antigua and Barbuda	ATG3	Hanson's Bay – Flashes	A1b	187	0	Not protected		X									
Antigua and Barbuda	ATG4	McKinnons Salt Pond	A1b	78	0	Not protected		X									
Antigua and Barbuda	ATG5	North East Marine Management Area and Fitches Creek Bay	A1abce;B1	11,115	98	Mostly	Yes	X	X								
Antigua and Barbuda	ATG6	Redonda	A1ae; B1	2,130	0	Not protected	Yes		X								
The Bahamas	BHS1	Allen's Cays	A1b	747	0	Not protected				X							
The Bahamas	BHS2	Andros Blue Holes National Park	A1ab	13,479	100	Protected	Yes		X					X			
The Bahamas	BHS3	Andros West Side National Park	A1bc; B1	512,990	100	Protected				X			X	X			
The Bahamas	BHS4	Bight of Acklins National Park	A1a	24,942	100	Protected				X							
The Bahamas	BHS5	Bitter Guana Cay	A1b	393	0	Not protected				X							
The Bahamas	BHS6	Booby Cay	A1a	2,345	2	Minimaly				X							
The Bahamas	BHS7	Cat Island Wetlands	A1b	1,850	0	Not protected				X							
The Bahamas	BHS8	Cay Sal Marine Management Area	A1d; D1a	1,671,651	100	Protected				X							
The Bahamas	BHS9	Conception Island National Park	A1ae; B1	10,242	100	protected				X							
The Bahamas	BHS10	Driggs Hill to Mars Bay	A1a	11,849	0	Not protected			X								
The Bahamas	BHS11	East Plana Cay	A1b; B1	2,509	71	Partially		X		X							
The Bahamas	BHS12	Exuma Cays Land and Sea Park	A1abc	60,223	97	Mostly	Yes	X		X		X					

Country	CEPF Codes	Site Name	KBA Criteria	Area (ha)	Percentage in Protected Area(s)	Protection Status	CEPF Priority Site	Mammals	Birds	Reptiles	Amphibians	Fish	Sharks and Rays	Flowering plants	Monocotyledons	Conifers	Cycads
The Bahamas	BHS13	Graham's Harbour National Park	A1ac	2,322	100	Protected				X		X					
The Bahamas	BHS14	Green Cay Marine Park	A1a	1,094	100	Protected				X							
The Bahamas	BHS15	Long Island and Hog Cay	A1abe; B1; D1a	81,205	0	Not protected			X								X
The Bahamas	BHS16	Lucayan National Park	A1ab; B1	1,167	67	Partially						X					
The Bahamas	BHS17	Mangrove Cay	A1ab	2,496	0	Not protected			X	X							
The Bahamas	BHS18	Owenstown (abandoned)	A1a	1,539	0	Not protected			X								
The Bahamas	BHS19	Pigeon Creek and Snow Bay National Park	A1a	2,055	100	Protected				X							
The Bahamas	BHS20	Southern Great Lake	A1a	1,784	95	Mostly				X							
The Bahamas	BHS21	Stafford Creek to Andros Town	A1ab	8,214	0	Not protected			X	X							
The Bahamas	BHS22	White Bay, Noddy, North Adderley and Leaf Cays	A1b	329	0	Not protected				X							
The Bahamas	BHS23	White Cay	A1a	18	0	Not protected				X							
Barbados	BRB1	Bath Beach	A1c	2	0	Not protected				X							
Barbados	BRB2	Hilton Beach	A1c; D1a	2	0	Not protected				X							
Barbados	BRB3	North East Coast	A1a	244	0	Not protected				X							
Barbados	BRB4	Scotland District	A1abd;B1	5,711	2	Minimaly		X		X							
Barbados	BRB5	South Coast Beaches	A1c; D1a	5	0	Not protected				X							
Barbados	BRB6	South East Coast	A1a	752	0	Not protected				X							
Barbados	BRB7	West Coast Beaches	A1c; D1a	77	23	Minimaly				X							
Dominica	DMA1	Morne Diablotin National Park	A1abd;B1	3,347	100	Protected	Yes		X	X	X						
Dominica	DMA2	Morne Trois Pitons National Park	A1abd;B1	6,718	100	Protected			X					X			
Dominica	DMA3	Pointe Des Fous	A1a	573	0	Not protected				X							
Dominica	DMA4	West coast shrub woodland	A1c	12,214	0	Not protected					X						

Country	CEPF Codes	Site Name	KBA Criteria	Area (ha)	Percentage in Protected Area(s)	Protection Status	CEPF Priority Site	Mammals	Birds	Reptiles	Amphibians	Fish	Sharks and Rays	Flowering plants	Monocotyledons	Conifers	Cycads
Dominican Republic	DOM1	Arroyo Lebrón, El Seybo	A1a	833	0	Not protected								X			
Dominican Republic	DOM2	Bahía de las Calderas y el Derrumbao	A1d	1,179	0	Not protected				X							
Dominican Republic	DOM3	Honduras	A1b	525	16	Minimaly					X						
Dominican Republic	DOM4	Monumento Natural Cabo Samaná	A1a	931	100	Protected	Yes	X		X	X						
Dominican Republic	DOM5	Monumento Natural Hoyo Claro	A1a	3,945	100	Protected					X						
Dominican Republic	DOM6	Monumento Natural Las Caobas	A1a; B1	10,565	100	Protected				X							
Dominican Republic	DOM7	Monumento Natural Las Dunas de Las Calderas	A1bd	1,754	100	Protected				X				X			
Dominican Republic	DOM8	Monumento Natural Loma Isabel de Torres	A1b	1,665	100	Protected					X						
Dominican Republic	DOM9	Monumento Natural Salto de la Damajagua	A1ab	554	100	Protected		X			X						
Dominican Republic	DOM10	Parque Nacional Armando Bermúdez	A1abcd; B1	80,465	100	Protected		X	X		X					X	
Dominican Republic	DOM11	Parque Nacional Cabo Cabrón	A1a	3,576	100	Protected		X			X						
Dominican Republic	DOM12	Parque Nacional Cotubanamá	A1abcd	79,954	100	Protected		X	X	X	X			X			
Dominican Republic	DOM13	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	A1abcd; B1	90,915	100	Protected	Yes	X	X		X			X		X	
Dominican Republic	DOM14	Parque Nacional El Morro	A1a	1,840	100	Protected								X			
Dominican Republic	DOM15	Parque Nacional Francisco Alberto Caamaño Deñó	A1ab	28,973	100	Protected								X			
Dominican Republic	DOM16	Parque Nacional Jaragua	A1abcde; B1	156,092	100	Protected	Yes	X	X	X	X			X	X		
Dominican Republic	DOM17	Parque Nacional José del Carmen Ramírez	A1abc; B1	75,174	100	Protected					X					X	

Country	CEPF Codes	Site Name	KBA Criteria	Area (ha)	Percentage in Protected Area(s)	Protection Status	CEPF Priority Site	Mammals	Birds	Reptiles	Amphibians	Fish	Sharks and Rays	Flowering plants	Monocotyledons	Conifers	Cycads
Dominican Republic	DOM18	Parque Nacional Lago Enriquillo e Isla Cabritos	A1abcd	40,575	100	Protected	Yes		X	X	X	X		X			
Dominican Republic	DOM19	Parque Nacional Loma Nalga de Maco y Río Limpio	A1abd;B1	16,618	100	Protected			X		X					X	
Dominican Republic	DOM20	Parque Nacional Los Haitises	A1abcd; B1	63,408	100	Protected	Yes	X	X	X				X			
Dominican Republic	DOM21	Parque Nacional Manglares de Estero Balsa	A1bd	5,664	100	Protected				X	X						
Dominican Republic	DOM22	Parque Nacional Manglares del Bajo Yuna	A1c	12,160	100	Protected		X									
Dominican Republic	DOM23	Parque Nacional Montaña La Humeadora	A1abd	30,646	100	Protected	Yes		X		X			X		X	
Dominican Republic	DOM24	Parque Nacional Sierra de Bahoruco	A1abcd; B1	109,423	100	Protected	Yes	X	X	X	X			X		X	
Dominican Republic	DOM25	Parque Nacional Sierra de Neyba	A1abcd; B1	18,337	100	Protected		X	X		X			X		X	
Dominican Republic	DOM26	Parque Nacional Sierra Martín García	A1abde;B1;B2	26,224	100	Protected			X	X	X						
Dominican Republic	DOM27	Playa Bayahibe	A1a	10,050	0	Minimaly								X			
Dominican Republic	DOM28	Punta Cana	A1ad	1,114	0	Not protected			X								
Dominican Republic	DOM29	Refugio de Vida Silvestre Cayos Siete Hermanos	A1a	11,606	100	Protected								X			
Dominican Republic	DOM30	Refugio de Vida Silvestre Laguna Cabral o Rincón	A1bd	5,618	100	Protected			X	X	X			X			
Dominican Republic	DOM31	Refugio de Vida Silvestre Lagunas de Bávaro y el Caletón	A1ab	642	100	Protected					X						
Dominican Republic	DOM32	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	A1abcd	3,362	100	Protected	Yes	X	X		X			X		X	
Dominican Republic	DOM33	Reserva Biológica Loma Charco Azul	A1abc	17,455	100	Protected			X	X							
Dominican Republic	DOM34	Reserva Científica Ébano Verde	A1abcd	3,000	100	Protected	Yes	X	X		X			X		X	

Country	CEPF Codes	Site Name	KBA Criteria	Area (ha)	Percentage in Protected Area(s)	Protection Status	CEPF Priority Site	Mammals	Birds	Reptiles	Amphibians	Fish	Sharks and Rays	Flowering plants	Monocotyledons	Conifers	Cycads
Dominican Republic	DOM35	Reserva Científica Loma Barbacoa	A1c	1,376	100	Protected								X			
Dominican Republic	DOM36	Reserva Científica Loma Guaconejo	A1bc	2,345	100	Protected		X			X						
Dominican Republic	DOM37	Reserva Científica Loma Quita Espuela	A1abcd	7,600	100	Protected		X	X		X						
Dominican Republic	DOM38	Reserva Forestal Barrero	A1b	31,153	100	Protected								X			
Dominican Republic	DOM39	Río Anamuya	A1a	281	1	Minimaly								X			
Grenada	GRD1	Bathway Beach	A1d	5	0	Not protected				X							
Grenada	GRD2	Beausejour/Grenville Vale	A1a; B1	101	13	Minimaly			X								
Grenada	GRD3	Grand Etang National Park	A1a	1,733	100	Protected					X						
Grenada	GRD4	Levera Beach	A1d	3	0	Not protected				X							
Grenada	GRD5	Mount Hartman	A1a; B1	70	0	Minimaly			X								
Grenada	GRD6	Mount Saint Catherine	A1a; B1	1,162	34	Partially					X						
Grenada	GRD7	Perseverance	A1a	33	99	Mostly			X								
Grenada	GRD8	Woodford	A1a; B1	27	3	Minimaly			X								
Grenada	GRD9	Woodlands	A1a; B1	199	0	Not protected			X								
Haiti	HTI1	Aire Protégée de Ressources Naturelles Gérées de Cayemites - Barradères	A1ade; B1	87,920	0	Not protected	Yes			X							
Haiti	HTI2	Aire Protégée de Ressources Naturelles Gérées de Port Salut-Aquin	A1bd	87,788	0	Not protected				X							
Haiti	HTI3	Aire Protégée de Ressources Naturelles Gérées des Trois Baies	A1bcd	75,500	0	Not protected	Yes	X		X		X					
Haiti	HTI4	Anse-à-Pitres	A1c	3,702	0	Not protected				X							
Haiti	HTI5	Baie de l'Acul / Chouchou	A1bcd	116,609	0	Not protected		X	X	X	X	X		X			

Country	CEPF Codes	Site Name	KBA Criteria	Area (ha)	Percentage in Protected Area(s)	Protection Status	CEPF Priority Site	Mammals	Birds	Reptiles	Amphibians	Fish	Sharks and Rays	Flowering plants	Monocotyledons	Conifers	Cycads
Haiti	HTI6	Cavaillon	A1ab	13,406	0	Not protected					X				X		
Haiti	HTI7	Chaînes des Cahos	A1a	15,830	0	Not protected								X			
Haiti	HTI8	Citadelle – Grottes Dondon	A1abd;B1	9,975	25	Partially			X	X	X						
Haiti	HTI9	Dame Marie	A1abe; B1	866	0	Not protected				X	X			X			
Haiti	HTI10	Delta de l'Artibonite	A1bd	71,330	0	Not protected				X							
Haiti	HTI11	Dépression de Jacmel	A1abd	14,757	0	Not protected		X			X			X	X		
Haiti	HTI12	Dubedou – Morne Balance	A1abc	27,593	0	Not protected				X	X			X		X	
Haiti	HTI13	Fond des Nêgres – L'Etang Miragoane	A1abd;B1	79,137	0	Not protected					X			X	X		
Haiti	HTI14	Ile de la Tortue Est	A1bd	9,367	0	Not protected				X							
Haiti	HTI15	Ile de la Tortue Ouest	A1bd	5,391	0	Not protected				X				X			
Haiti	HTI16	Lac Azuéi – Trou Caiman	A1abd	16,317	1	Minimaly	Yes		X	X	X	X					
Haiti	HTI17	Môle Saint Nicolas	A1abd	25,034	0	Not protected				X				X	X		
Haiti	HTI18	Morne Bailly	A1b	4,091	0	Not protected			X	X							
Haiti	HTI19	Nan L'État	A1b	2,199	0	Not protected					X						
Haiti	HTI20	Neiba d'Haïti	A1ab	12,312	0	Minimaly			X		X						
Haiti	HTI21	Parc Marin la Gonâve - Nord	A1bd	37,374	0	Not protected		X		X				X			
Haiti	HTI22	Parc Marin la Gonâve - Sud	A1d	37,837	0	Not protected				X							
Haiti	HTI23	Parc National Naturel de Grand Bois	A1abc	372	0	Not protected	Yes		X		X			X			
Haiti	HTI24	Parc National Naturel Forêt des Pins Unité 1	A1ab	6,799	0	Not protected	Yes		X					X		X	
Haiti	HTI25	Parc National Naturel La Visite	A1abcd	11,455	100	Protected	Yes	X	X		X			X			
Haiti	HTI26	Parc National Naturel Macaya	A1abc; B1	13,486	74	Partially	Yes	X	X		X			X	X		
Haiti	HTI27	Pic Tête Boeuf	A1ab	15,689	0	Not protected			X						X		
Haiti	HTI28	Plaissance	A1b	15,962	0	Not protected			X	X							

Country	CEPF Codes	Site Name	KBA Criteria	Area (ha)	Percentage in Protected Area(s)	Protection Status	CEPF Priority Site	Mammals	Birds	Reptiles	Amphibians	Fish	Sharks and Rays	Flowering plants	Monocotyledons	Conifers	Cycads
Haiti	HTI29	Port-de-Paix	A1abde;B1	27,261	0	Not protected				X	X			X	X	X	
Haiti	HTI30	Saint Michel de l'Attalaye – Morne Basile	A1b	9,667	0	Not protected					X			X		X	
Jamaica	JAM1	Black River Great Morass	A1abd	17,826	43	Partially			X	X	X			X			
Jamaica	JAM2	Blue and John Crow Mountains Protected National Heritage and surroundings	A1abde;B1	60,497	77	Mostly	Yes	X	X	X	X			X	X	X	
Jamaica	JAM3	Bluefields	A1abd	4,675	9	Minimaly			X	X				X			
Jamaica	JAM4	Bull Bay	A1ab	11,211	9	Minimaly		X						X			
Jamaica	JAM5	Catadupa	A1abd	15,785	12	Minimaly	Yes		X					X	X		
Jamaica	JAM6	Caymanas	A1b	4,081	0	Not protected		X									
Jamaica	JAM7	Cockpit Country	A1abde;B1	64,139	40	Partially	Yes	X	X	X	X			X		X	
Jamaica	JAM8	Dolphin Head	A1abe; B1	5,389	19	Minimaly	Yes		X		X			X			
Jamaica	JAM9	Don Figuerero Mountains	A1ab	5,593	3	Minimaly								X			
Jamaica	JAM10	Font Hill	A1bd	983	0	Not protected		X	X	X							
Jamaica	JAM11	Great River	A1ab	3,156	0	Minimaly		X			X						
Jamaica	JAM12	Kellits Camperdown Area	A1b	4,545	17	Minimaly		X									
Jamaica	JAM13	Litchfield Mountain - Matheson's Run	A1abe; B1	16,013	35	Partially	Yes	X	X		X			X			
Jamaica	JAM14	Main Ridge	A1b	3,595	0	Not protected		X									
Jamaica	JAM15	May Pen	A1b	6,831	12	Minimaly		X									
Jamaica	JAM16	Milk River	A1b	98	13	Minimaly				X							
Jamaica	JAM17	Mount Diablo	A1ab	7,174	18	Minimaly		X	X	X				X		X	
Jamaica	JAM18	Negril and surroundings	A1abd;B1	39,651	58	Partially			X	X				X			X
Jamaica	JAM19	North Coast Forest	A1abd	44,080	1	Minimaly		X	X	X	X			X			
Jamaica	JAM20	Peckham Woods	A1abe; B1	239	28	Partially	Yes		X					X			

Country	CEPF Codes	Site Name	KBA Criteria	Area (ha)	Percentage in Protected Area(s)	Protection Status	CEPF Priority Site	Mammals	Birds	Reptiles	Amphibians	Fish	Sharks and Rays	Flowering plants	Monocotyledons	Conifers	Cycads
Jamaica	JAM21	Point Hill	A1ab; B1	4,738	0	Not protected		X									
Jamaica	JAM22	Portland Bight Protected Area	A1abde;B1	197,957	100	Protected	Yes	X		X	X			X			
Jamaica	JAM23	Red Ground	A1b	1,995	0	Not protected		X									
Jamaica	JAM24	Rio Cobre	A1b	5,744	0	Minimaly		X		X							
Jamaica	JAM25	Rio Grande	A1b	473	6	Minimaly				X							
Jamaica	JAM26	Rio Magno	A1b	1,927	0	Not protected		X									
Jamaica	JAM27	Rio Pedro	A1b	3,181	9	Minimaly		X									
Jamaica	JAM28	Santa Cruz Mountains	A1ab	1,937	0	Not protected		X						X			
Jamaica	JAM29	Stephney Johns Vale - Bull Head	A1ab; B1	12,642	54	Partially		X			X			X			
Jamaica	JAM30	Swift River	A1b	81	8	Minimaly				X							
Jamaica	JAM31	Wag Water River	A1b	285	0	Not protected				X							
Jamaica	JAM32	Yallahs	A1bd	8,106	3	Minimaly			X	X							
Saint Kitts and Nevis	KNA1	Cayon to Key	A1d	16	0	Not protected				X							
Saint Kitts and Nevis	KNA2	Nevis Peak	A1a	1,237	0	Not protected		X									
Saint Lucia	LCA1	Anse Cochon Protected Landscape	A1a	558	26	Partially			X	X							
Saint Lucia	LCA2	Castries and Dennery Waterworks Reserve and Marquis	A1abd;B1	7,886	100	Protected	Yes		X	X				X			
Saint Lucia	LCA3	Iyanola and Grande Anse, Esperance and Fond D'ors	A1a; B1	5,154	12	Minimaly			X	X							
Saint Lucia	LCA4	Mandelé Protected Landscape	A1ab; B1	2,561	16	Minimaly	Yes		X	X							
Saint Lucia	LCA5	Pitons (Qualibou and Canaries)	A1ab; B1	6,192	5	Minimaly			X	X				X		X	
Saint Lucia	LCA6	Pointe Sable	A1ae; B1	2,050	73	Partially	Yes			X							
Saint Lucia	LCA7	Rat Island	A1a	2	0	Not protected				X							
Saint Vincent and the Grenadines	VCT1	Chatham Bay, Union Island	A1abe; B1	350	0	Not protected	Yes			X							

Country	CEPF Codes	Site Name	KBA Criteria	Area (ha)	Percentage in Protected Area(s)	Protection Status	CEPF Priority Site	Mammals	Birds	Reptiles	Amphibians	Fish	Sharks and Rays	Flowering plants	Monocotyledons	Conifers	Cycads
Saint Vincent and the Grenadines	VCT2	Colonarie Forest Reserve	A1ab; B1	1,608	100	Protected			X	X							
Saint Vincent and the Grenadines	VCT3	Cumberland Forest Reserve	A1ab; B1	1,017	100	Protected	Yes		X	X	X						
Saint Vincent and the Grenadines	VCT4	Dalaway (Buccament) Watershed	A1ab; B1	584	100	Protected			X	X							
Saint Vincent and the Grenadines	VCT5	Kingstown Forest Reserve	A1ab	829	0	Minimaly			X	X							
Saint Vincent and the Grenadines	VCT6	La Soufrière National Park	A1ab; B1	4,978	0	Not protected			X		X						
Saint Vincent and the Grenadines	VCT7	Mount Pleasant Forest Reserve	A1ab; B1	1,183	100	Protected			X	X							
Saint Vincent and the Grenadines	VCT8	Richmond Forest Reserve	A1ab; B1	2,991	100	Protected			X	X	X						

Appendix 3.2 KBAs in the EU Overseas Regions and Territories

Country	Territory	KBA Code	Site Name	Area (ha)	Threatened Spp	Endemic Spp
France	St. Barthélemy	BLM1	Marine areas and ilets	2,260	17	13
France	St. Barthélemy	BLM2	Terrestrial areas and ponds	810	3	42
France	St. Barthélemy	BLM3	Cave	<1		1
France	St. Martin	MAF1	Marine, coastal areas and ponds	3,490	22	9
France	St. Martin	MAF2	Marine and coastal areas (outside the Réserve Naturelle and Conservatoire du Littoral areas)	180	2	
France	St. Martin	MAF3	Terrestrial areas (Hill tops and mangroves)	470	4	18
France	Guadeloupe	GLP1	Forests of Basse-Terre	42,590	19	106
France	Guadeloupe	GLP2	Northern Cliffs and sector from Port- Louis to Pointe de la Vigie - nothern Grande-Terre	4,100	5	38
France	Guadeloupe	GLP3	Lagoon of the Grand Cul-de-Sac Marin	29,500	18	27
France	Guadeloupe	GLP4	Windward side of Basse-Terre	8,850	16	4
France	Guadeloupe	GLP5	Leeward side of Basse-Terre	17,970	19	9
France	Guadeloupe	GLP6	Southern part of Grande-Terre	2,120	18	9
France	Guadeloupe	GLP7	Eastern part of Grande-Terre	1,410	17	13
France	Guadeloupe	GLP8	Ilets de Petite-Terre et La Désirade	8,790	17	31
France	Guadeloupe	GLP9	Marie-Galante	7,930	16	28
France	Guadeloupe	GLP10	Les Saintes	4,250	3	9
France	Martinique	MTQ1	Fort de France Bay	6,060	18	14
France	Martinique	MTQ2	Area of Prêcheur - Ilet La Perle	790	10	1
France	Martinique	MTQ3	Montagne Pelée - Pitons du Carbet - Case Pilote – Bellefontaine Lorrain	23,270	13	146
France	Martinique	MTQ4	Dufour - Diamant - Pointe Borgnèse	14,090	19	24
France	Martinique	MTQ5	Pointe Borgnèse - Macabou	5,370	20	33
France	Martinique	MTQ6	Baie du Robert - Ilets Boiseau et Petit Piton - Ilet Chancel	9,080	17	4
France	Martinique	MTQ7	Presqu'ile de la Caravelle - Pointe Pain de Sucre	11,610	19	25
France	Martinique	MTQ8	Dry forests	630	1	10
Netherlands	Aruba	ABW1	Parke Nacional Arikok	3,400	3	11
Netherlands	Aruba	ABW2	Marine areas and coastal bays	3,450	31	2
Netherlands	Aruba	ABW3	Spaans Lagoen and Mangrove areas	140	4	

Country	Territory	KBA Code	Site Name	Area (ha)	Threatened Spp	Endemic Spp
Netherlands	Aruba	ABW4	Sea turtle nesting sites	51	3	
Netherlands	Aruba	ABW5	Bubali and inland ponds of Tanki Sabana and Lake Noord Ponds	52		2
Netherlands	Aruba	ABW6	Lago Cave	<1	1	1
Netherlands	Aruba	ABW7	Tierra del Sol Saliña	<1		1
Netherlands	Bonaire	BON1	Bonaire Marine Park	2,700	12	3
Netherlands	Bonaire	BON2	Washington-Slagbaai and Dos Pos	7,940	6	27
Netherlands	Bonaire	BON3	Terrace Landscape Middle Bonaire	2,200	2	3
Netherlands	Bonaire	BON4	Klein Bonaire	1,970	3	4
Netherlands	Bonaire	BON5	Pekelmeer Saltworks	6,250	1	2
Netherlands	Bonaire	BON6	Washikemba- Onima and Bolivia area	7,800	1	2
Netherlands	Curaçao	CUW1	Christoffel-Shete Boka Terrestrial Parks and North-east coast	14,380	8	23
Netherlands	Curaçao	CUW2	Malpais-St Michiel and Rif-Mariel	2,500	7	13
Netherlands	Curaçao	CUW3	Curaçao Underwater Park to Eastpoint	4,080	22	8
Netherlands	Curaçao	CUW4	Klein Curaçao	1,220	20	3
Netherlands	Curaçao	CUW5	St Jorisbaai and Kueba di Noordkant	1,930	10	3
Netherlands	Curaçao	CUW6	San Juan - Santa Cruz and Pos Spaño	3,070		16
Netherlands	Saba	SAB1	Saba Terrestrial Park and Mount Scenery Reserve	150	3	33
Netherlands	Saba	SAB2	Saba Marine Park and coastal IBA	2,220	17	8
Netherlands	Saba	SAB3	Caves and inland bird areas	54		1
Netherlands	Saba	SAB4	Saba Bank National Park	268,000	20	1
Netherlands	St. Eustatius	STA1	Quill- Boven and Signal - Gilboa Hills	1,220	3	55
Netherlands	St. Eustatius	STA2	Zeelandia beach	4	2	
Netherlands	St. Eustatius	STA3	St. Eustatius National Marine Park	2,750	17	
Netherlands	St. Maarten	SXM1	Man of War Shoal Marine Park and Eastern islets	3,620	14	
Netherlands	St. Maarten	SXM2	Coastal areas and Seagrass beds (outside MPA and Eastern islets)	1,040	2	
Netherlands	St. Maarten	SXM3	Mangroves of Simpson Bay Lagoon	30	5	
Netherlands	St. Maarten	SXM4	Ponds and IBAs	140		5
Netherlands	St. Maarten	SXM5	Terrestrial areas	300	2	8

Country	Territory	KBA Code	Site Name	Area (ha)	Threatened Spp	Endemic Spp
United Kingdom	Anguilla	AIA1	Offshore cays and Marine Park system	8,060	18	9
United Kingdom	Anguilla	AIA2	Windward point- Junks Hole - Scrub and Little Scrub islets	1,110	8	10
United Kingdom	Anguilla	AIA3	Ponds and IBAs	270		4
United Kingdom	Anguilla	AIA4	Forest areas and bat caves	90	3	9
United Kingdom	Anguilla	AIA5	Marine areas (outside the MPA network)	190	4	
United Kingdom	British Virgin Islands	VGB1	Anegada	4,190	9	30
United Kingdom	British Virgin Islands	VGB2	Virgin Gorda and nearby islands	1,240	7	34
United Kingdom	British Virgin Islands	VGB3	Jost Van Dyke and Green Cay	1,340	5	31
United Kingdom	British Virgin Islands	VGB4	Tortola and nearby islands	1,820	10	49
United Kingdom	British Virgin Islands	VGB5	Great and Little Tobago	1,570	1	18
United Kingdom	British Virgin Islands	VGB6	Sisters Islands	1,270	2	30
United Kingdom	British Virgin Islands	VGB7	Marine space	2,530	26	
United Kingdom	Cayman Islands	CYM1	Terrestrial areas of Grand Cayman	5,520	22	86
United Kingdom	Cayman Islands	CYM2	Marine ecosystems of Grand Cayman	13,600	20	
United Kingdom	Cayman Islands	CYM3	Terrestrial areas of Little Cayman	940	17	75
United Kingdom	Cayman Islands	CYM4	Marine ecosystems of Little Cayman	2,070	20	
United Kingdom	Cayman Islands	CYM5	Terrestrial areas of Cayman Brac	1,270	16	74
United Kingdom	Cayman Islands	CYM6	Marine ecosystems of Cayman Brac	1,580	20	
United Kingdom	Cayman Islands	CYM7	Sea turtle nesting sites	1,470	3	
United Kingdom	Cayman Islands	CYM8	Offshore Banks	580	25	
United Kingdom	Montserrat	MSR1	Centre Hills - forest reserve boundary	1,320	11	272
United Kingdom	Montserrat	MSR2	Northern Forested Ghauts	170	1	12
United Kingdom	Montserrat	MSR3	Silver Hills reserve - dry forests	1,070	4	6
United Kingdom	Montserrat	MSR4	South Soufrière Hills	540	5	15
United Kingdom	Montserrat	MSR5	Marine ecosystems - Sea turtle nesting sites	5,080	25	
United Kingdom	Montserrat	MSR6	Wetlands	30	1	

Country	Territory	KBA Code	Site Name	Area (ha)	Threatened Spp	Endemic Spp
United Kingdom	Turks and Caicos Islands	TCA1	Wetlands and Ramsar site	57,580	7	12
United Kingdom	Turks and Caicos Islands	TCA2	Marine ecosystems	92,700	26	
United Kingdom	Turks and Caicos Islands	TCA3	Providenciales	3,880	3	4
United Kingdom	Turks and Caicos Islands	TCA4	North Caicos and Water-Pine Cays	4,560	4	12
United Kingdom	Turks and Caicos Islands	TCA5	Middle Caicos	2,280	1	8
United Kingdom	Turks and Caicos Islands	TCA6	East Caicos	30,500	9	20
United Kingdom	Turks and Caicos Islands	TCA7	South Caicos	1,100	3	2
United Kingdom	Turks and Caicos Islands	TCA8	Southern Cays	5,970	3	3
United Kingdom	Turks and Caicos Islands	TCA9	Grand Turk	160	3	2
United Kingdom	Turks and Caicos Islands	TCA10	Turks Bank and Salt Cay	2,860	5	6
United Kingdom	Turks and Caicos Islands	TCA11	French, Bush and Seal Cays	40	3	2

Appendix 3.3 KBAs in the US Overseas Territories

Territory	KBA Code	Site Name	KBA Criteria*
Puerto Rico	PR001	Mona y Monito	A1abce;B1;D1
Puerto Rico	PR002	Acantilados del Noroeste	A1abd
Puerto Rico	PR003	Caño Tiburones	A1ab
Puerto Rico	PR004	Karso del Norte	A1abde;B1
Puerto Rico	PR005	Maricao y Susúa	A1abcd; B1
Puerto Rico	PR006	Suroeste	A1ad; B1
Puerto Rico	PR007	Cordillera Central	A1abc; B1
Puerto Rico	PR008	Salinas de Punta Cucharas	A1ab
Puerto Rico	PR009	Baños de Coamo	A1abd
Puerto Rico	PR010	Bahía de Jobos	A1a; B1
Puerto Rico	PR011	Las Piedras Chiquitas	A1abd
Puerto Rico	PR012	Piñones	A1ad
Puerto Rico	PR013	El Yunque	A1abcde; B1
Puerto Rico	PR014	Culebra	A1ade; B1
Puerto Rico	PR015	Vieques	A1abc
Puerto Rico	PR016	Sierra de Pandura	A1c
Puerto Rico	PR017	Guaniquilla y Boquerón	A1ab
Puerto Rico	PR018	Sierra Bermeja y Laguna Cartagena	A1ab
Puerto Rico	PR019	Karso del Sur	A1abd;B1
Puerto Rico	PR020	Corredor Ecológico del Noreste	A1abd
Puerto Rico	PR021	Carite	A1abc; B1
Puerto Rico	PR022	Humacao	A1ac
Puerto Rico	PR023	Ciénaga Las Cucharillas	A1ab
Puerto Rico	PR024	Laguna Tortuguero	A1a
Puerto Rico	PR025	Bosque de Vega	A1a
Puerto Rico	PR026	Ceiba y Naguabo	A1abd
Puerto Rico	PR027	Sabana Seca	A1a
Virgin Islands (USA)	VI001	Protestant Cay	A1a
Virgin Islands (USA)	VI002	Magens Bay	A1ab
Virgin Islands (USA)	VI003	Hassel Island - Virgin Islands National Park	A1a
Virgin Islands (USA)	VI004	Virgin Islands National Park	A1abe; B1
Virgin Islands (USA)	VI005	Northwestern St Croix	A1a; B1
Virgin Islands (USA)	VI006	Ruth Cay	A1a
Virgin Islands (USA)	VI007	Southgate and Green Cay	A1a
Virgin Islands (USA)	VI008	Sandy Point National Wildlife Refuge	A1cd
Virgin Islands (USA)	VI009	Jack and Isaac Bays	A1c
Virgin Islands (USA)	VI010	Buck Island	A1ac; D1a
Virgin Islands (USA)	VI011	East End Bay	A1c

Note: * = The KBA criteria have not been assessed in detail; this is just an adaptation from existing information (based in the former KBA criteria).

Appendix 3.4 KBAs in Cuba

KBA Code	Site Name	Area (ha)	IBA Criteria	KBA Criteria*
CU001	Guanahacabibes	101,116	A1, A2, A3	A1;B2;B3b
CU002	Mil Cumbres	16,930	A1, A2, A3	A1;B2;B3b
CU003	Humedal Sur de Pinar del Río	66,691	A1, A4i, A4iii, B4i	A1;D1
CU004	Sierra del Rosario	26,686	A1, A2, A3	A1;B2;B3b
CU005	Cienaga de Lanier y Sur de la Isla de la Juventud	96,216	A1, A2, A3, A4i	A1;B2;B3a;D1
CU006	Ciénaga de Zapata	530,695	A1, A2, A3, A4i	A1;B2;B3a;D1
CU007	Las Picúa - Cayo del Cristo	56,290	A1, A4i, A4iii	A1;D1
CU008	Cayería Centro - Oriental de Villa Clara	284,091	A1, A4i, B4i	A1, D1
CU009	Humedal Sur de Sancti Spiritus	82,377	A1, A4i, A4iii	A1;D1
CU010	Topes de Collantes	29,425	A1, A3	A1;B3b
CU011	Alturas de Banao	6,126	A1, A3	A1, B3
CU012	Gran Humedal del Norte de Ciego de Ávila	268,728	A1, A2, A3, A4i, B4i, B4ii	A1;B2;B3a;D1
CU013	Cayo Sabinal, Ballenatos y Manglares de la Bahía de Nuevitas	66,490	A1, A2, A3, A4i, B4i	A1, B2,B3a;D1
CU014	Río Máximo	35,562	A1, A2, A3, A4i, A4iii, B4i	A1;B2;B3a;D1
CU015	Cayos Romano - Cruz - Megano Grande	241,161	A1, A2, A3, A4i	A1;B2;B3a;D1
CU016	Limones - Tuabaquey	1,962	A1, A3	A1;B3b
CU017	Sierra del Chorrillo	83,322	A1, A2, A3	A1;B2;B3b
CU018	Turquino - Bayamesa	48,462	A1, A3, A4ii	A1;B3a;D1
CU019	Desembarco del Granma	32,660	A1, A2, A3	A1;B2;B3b
CU020	Delta del Cauto	75,372	A1, A3, A4i, A4iii, B4i	A1;B3b
CU021	Gibara	40,564	A1, A2, A3	A1;B2;B3b
CU022	La Mensura	8,467	A1, A2, A3	A1;B2;B3b
CU023	Delta del Mayarí	4,660	A1, A3, B4i	A1;B3b
CU024	Pico Cristal	18,537	A1, A2, A3	A1;B2;B3b
CU025	Gran Piedra - Pico Mogote	4,532	A1, A3	A1;B3b
CU026	Siboney - Juticí	1,857	A1, A2, A3, A4iv	A1, B2,B3a;D1
CU027	Alejandro de Humboldt	70,835	A1, A2, A3	A1;B2;B3b
CU028	Hatibonico - Baitiquirí – Imías	16,764	A1, A2, A3	A1;B2;B3b

Note: * = The KBA criteria have not been assessed in detail; this is just an adaptation from the existing IBA information.

Appendix 4 KBA Trigger Species

This table includes records for CEPF-eligible countries, Puerto Rico and the US Virgin Islands and is limited to species triggering at least one of the criteria in the proposed KBAs. The detailed information (population figures, references, justifications when available) is too lengthy for inclusion in this document. Those details and an additional 1,000 records with information about other species reported for these sites that do not trigger the KBA criteria have been submitted to the KBA Secretariat for its consideration and formal assessments; and will be available for any future revision and update.

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Antigua and Barbuda	Bethesda Dam	Aves	*Dendrocygna arborea*	West Indian Whistling-duck	VU		X						X
Antigua and Barbuda	Codrington Lagoon and the Creek	Aves	*Dendrocygna arborea*	West Indian Whistling-duck	VU		X						
Antigua and Barbuda	Hanson's Bay – Flashes	Aves	*Dendrocygna arborea*	West Indian Whistling-duck	VU		X						
Antigua and Barbuda	McKinnons Salt Pond	Aves	*Dendrocygna arborea*	West Indian Whistling-duck	VU		X						
Antigua and Barbuda	North East Marine Management Area and Fitches Creek Bay	Reptilia	*Alsophis antiguae*	Antiguan Racer	CR	X				X	X		
Antigua and Barbuda	North East Marine Management Area and Fitches Creek Bay	Aves	*Dendrocygna arborea*	West Indian Whistling-duck	VU		X						
Antigua and Barbuda	North East Marine Management Area and Fitches Creek Bay	Reptilia	*Eretmochelys imbricata*	Hawksbill Turtle	CR			X					
Antigua and Barbuda	Redonda	Reptilia	*Anolis nubilis*	Redonda Anole	CR	X				X			
Antigua and Barbuda	Redonda	Reptilia	*Pholidoscelis atratus*	Redonda Ameiva	CR	X				X	X		
The Bahamas	Allen's Cays	Reptilia	*Cyclura cychlura*	Northern Bahamian Rock Iguana	VU		X						
The Bahamas	Andros Blue Holes National Park	Magnoliopsida	*Chamaecrista caribaea*	n/a	VU		X						
The Bahamas	Andros Blue Holes National Park	Aves	*Icterus northropi*	Bahama Oriole	CR	X							

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
The Bahamas	Andros Blue Holes National Park	Aves	*Tachycineta cyaneoviridis*	Bahama Swallow	EN	X							
The Bahamas	Andros West Side National Park	Magnoliopsida	*Chamaecrista caribaea*	n/a	VU		X				X		
The Bahamas	Andros West Side National Park	Reptilia	*Cyclura cychlura*	Northern Bahamian Rock Iguana	VU		X						
The Bahamas	Andros West Side National Park	Chondrichthyes	*Pristis pectinata*	Smalltooth Sawfish	CR			X					
The Bahamas	Andros West Side National Park	Reptilia	*Trachemys terrapen*	Cat Island Freshwater Turtle	VU		X						
The Bahamas	Bight of Acklins National Park	Reptilia	*Cyclura rileyi*	Central Bahamian Rock Iguana	EN	X							
The Bahamas	Bitter Guana Cay	Reptilia	*Cyclura cychlura*	Northern Bahamian Rock Iguana	VU		X						
The Bahamas	Booby Cay	Reptilia	*Cyclura carinata*	Turks and Caicos Rock Iguana	CR	X							
The Bahamas	Cat Island Wetlands	Reptilia	*Trachemys terrapen*	Cat Island Freshwater Turtle	VU		X						
The Bahamas	Cay Sal Marine Managenent Area	Reptilia	*Caretta caretta*	Loggerhead Turtle	VU				X				
The Bahamas	Conception Island National Park	Reptilia	*Chilabothrus argentum*	Conception Bank Silver Boa	CR	X				X			
The Bahamas	Driggs Hill to Mars Bay	Aves	*Icterus northropi*	Bahama Oriole	CR	X							
The Bahamas	East Plana Cay	Mammalia	*Geocapromys ingrahami*	Bahaman Hutia	VU		X						
The Bahamas	East Plana Cay	Reptilia	*Leiocephalus greenwayi*	East Plana Curlytail Lizard	VU		X				X		
The Bahamas	Exuma Cays Land and Sea Park	Reptilia	*Cyclura cychlura*	Northern Bahamian Rock Iguana	VU		X						
The Bahamas	Exuma Cays Land and Sea Park	Reptilia	*Cyclura rileyi*	Central Bahamian Rock Iguana	EN	X							
The Bahamas	Exuma Cays Land and Sea Park	Actinopterygii	*Epinephelus striatus*	Nassau Grouper	EN			X					
The Bahamas	Exuma Cays Land and Sea Park	Mammalia	*Geocapromys ingrahami*	Bahaman Hutia	VU		X						
The Bahamas	Graham's Harbour National Park	Reptilia	*Cyclura rileyi*	Central Bahamian Rock Iguana	EN	X							

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
The Bahamas	Graham's Harbour National Park	Actinopterygii	*Epinephelus striatus*	Nassau Grouper	EN			X					
The Bahamas	Green Cay Marine Park	Reptilia	*Cyclura rileyi*	Central Bahamian Rock Iguana	EN	X							
The Bahamas	Long Island and Hog Cay	Aves	*Dendrocygna arborea*	West Indian Whistling-duck	VU		X						X
The Bahamas	Long Island and Hog Cay	Cycadopsida	*Zamia lucayana*	n/a	EN	X				X	X		
The Bahamas	Lucayan National Park	Actinopterygii	*Lucifuga lucayana*	Lucayan Cave Brotula	EN	X					X		
The Bahamas	Lucayan National Park	Actinopterygii	*Lucifuga spelaeotes*	Bahama Cavefish	VU		X				X		
The Bahamas	Mangrove Cay	Reptilia	*Cyclura cychlura*	Northern Bahamian Rock Iguana	VU		X						
The Bahamas	Mangrove Cay	Aves	*Icterus northropi*	Bahama Oriole	CR	X							
The Bahamas	Owenstown (abandoned)	Aves	*Icterus northropi*	Bahama Oriole	CR	X							
The Bahamas	Pigeon Creek and SNo Bay National Park	Reptilia	*Cyclura rileyi*	Central Bahamian Rock Iguana	EN	X							
The Bahamas	Southern Great Lake	Reptilia	*Cyclura rileyi*	Central Bahamian Rock Iguana	EN	X							
The Bahamas	Stafford Creek to Andros Town	Reptilia	*Cyclura cychlura*	Northern Bahamian Rock Iguana	VU		X						
The Bahamas	Stafford Creek to Andros Town	Aves	*Icterus northropi*	Bahama Oriole	CR	X							
The Bahamas	Stafford Creek to Andros Town	Aves	*Tachycineta cyaneoviridis*	Bahama Swallow	EN	X							
The Bahamas	White Bay, Noddy, North Adderley and Leaf Cays	Reptilia	*Cyclura cychlura*	Northern Bahamian Rock Iguana	VU		X						
The Bahamas	White Cay	Reptilia	*Cyclura rileyi*	Central Bahamian Rock Iguana	EN	X							
Barbados	Bath Beach	Reptilia	*Eretmochelys imbricata*	Hawksbill Turtle	CR			X					
Barbados	Hilton Beach	Reptilia	*Eretmochelys imbricata*	Hawksbill Turtle	CR			X					X
Barbados	North East Coast	Reptilia	*Phyllodactylus pulcher*	Barbados Leaf-toed Gecko	CR	X							
Barbados	Scotland District	Reptilia	*Dermochelys coriacea*	Leatherback	VU				X				
Barbados	Scotland District	Mammalia	*Myotis nyctor*	n/a	VU		X				X		

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Barbados	Scotland District	Reptilia	*Tetracheilostoma carlae*	Barbados Threadsnake	CR	X					X		
Barbados	South Coast Beaches	Reptilia	*Eretmochelys imbricata*	Hawksbill Turtle	CR			X					X
Barbados	South East Coast	Reptilia	*Phyllodactylus pulcher*	Barbados Leaf-toed Gecko	CR	X							
Barbados	West Coast Beaches	Reptilia	*Eretmochelys imbricata*	Hawksbill Turtle	CR			X					X
Dominica	Morne Diablotin National Park	Aves	*Amazona arausiaca*	Red-necked Amazon	VU		X				X		
Dominica	Morne Diablotin National Park	Aves	*Amazona imperialis*	Imperial Amazon	EN	X					X		
Dominica	Morne Diablotin National Park	Amphibia	*Eleutherodactylus amplinympha*	n/a	EN	X					X		
Dominica	Morne Diablotin National Park	Reptilia	*Iguana delicatissima*	Lesser Antillean Green Iguana	EN	X							
Dominica	Morne Diablotin National Park	Aves	*Turdus lherminieri*	Forest Thrush	VU				X				
Dominica	Morne Trois Pitons National Park	Aves	*Amazona arausiaca*	Red-necked Amazon	VU		X				X		
Dominica	Morne Trois Pitons National Park	Aves	*Amazona imperialis*	Imperial Amazon	EN	X					X		
Dominica	Morne Trois Pitons National Park	Magnoliopsida	*Inga dominicensis*	n/a	VU		X						
Dominica	Morne Trois Pitons National Park	Magnoliopsida	*Pouteria pallida*	n/a	EN	X							
Dominica	Morne Trois Pitons National Park	Magnoliopsida	*Pouteria semecarpifolia*	Contrevent	VU		X						
Dominica	Morne Trois Pitons National Park	Aves	*Turdus lherminieri*	Forest Thrush	VU				X				
Dominica	Pointe Des Fous	Reptilia	*Iguana delicatissima*	Lesser Antillean Green Iguana	EN	X							
Dominica	West coast shrub woodland	Amphibia	*Leptodactylus fallax*	Mountain Chicken	CR			X					
Dominican Republic	Arroyo Lebrón, El Seybo	Magnoliopsida	*Stahlia monosperma*	Cóbana Polisandro	EN	X							
Dominican Republic	Bahía de las Calderas y el Derrumbao	Reptilia	*Cyclura cornuta*	Rhinoceros Iguana	VU				X				

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Dominican Republic	Honduras	Amphibia	*Peltophryne guentheri*	Southern Crested Toad	VU		X						
Dominican Republic	Monumento Natural Cabo Samaná	Reptilia	*Cyclura cornuta*	Rhinoceros Iguana	VU								
Dominican Republic	Monumento Natural Cabo Samaná	Amphibia	*Eleutherodactylus ruthae*	n/a	EN								
Dominican Republic	Monumento Natural Cabo Samaná	Reptilia	*Mitophis calypso*	Samana Threadsnake	CR	X							
Dominican Republic	Monumento Natural Cabo Samaná	Mammalia	*Plagiodontia aedium*	Hispaniolan Hutia	EN								
Dominican Republic	Monumento Natural Cabo Samaná	Mammalia	*Solenodon paradoxus*	Hispaniolan Solenodon	EN								
Dominican Republic	Monumento Natural Hoyo Claro	Amphibia	*Eleutherodactylus probolaeus*	n/a	EN	X							
Dominican Republic	Monumento Natural Hoyo Claro	Amphibia	*Eleutherodactylus ruthae*	n/a	EN	X							
Dominican Republic	Monumento Natural Las Caobas	Reptilia	*Sphaerodactylus schuberti*	Neiba Agave Sphaero	CR	X					X		
Dominican Republic	Monumento Natural Las Dunas de Las Calderas	Reptilia	*Cyclura cornuta*	Rhinoceros Iguana	VU				X				
Dominican Republic	Monumento Natural Las Dunas de Las Calderas	Magnoliopsida	*Senna domingensis*	n/a	VU		X						
Dominican Republic	Monumento Natural Loma Isabel de Torres	Amphibia	*Osteopilus pulchrilineatus*	Hispaniolan Yellow Treefrog	VU		X						
Dominican Republic	Monumento Natural Salto de la Damajagua	Amphibia	*Osteopilus pulchrilineatus*	Hispaniolan Yellow Treefrog	VU		X						
Dominican Republic	Monumento Natural Salto de la Damajagua	Mammalia	*Solenodon paradoxus*	Hispaniolan Solenodon	EN	X							
Dominican Republic	Parque Nacional Armando Bermúdez	Aves	*Amazona ventralis*	Hispaniolan Amazon	VU				X				
Dominican Republic	Parque Nacional Armando Bermúdez	Aves	*Coccyzus rufigularis*	Bay-breasted Cuckoo	EN	X					X		
Dominican Republic	Parque Nacional Armando Bermúdez	Aves	*Corvus leucognaphalus*	White-necked Crow	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Dominican Republic	Parque Nacional Armando Bermúdez	Amphibia	*Eleutherodactylus audanti*	South Island Telegraph Frog	VU		X				X		
Dominican Republic	Parque Nacional Armando Bermúdez	Amphibia	*Eleutherodactylus auriculatoides*	n/a	EN	X					X		
Dominican Republic	Parque Nacional Armando Bermúdez	Amphibia	*Eleutherodactylus haitianus*	n/a	EN	X							
Dominican Republic	Parque Nacional Armando Bermúdez	Amphibia	*Eleutherodactylus minutus*	n/a	EN	X							
Dominican Republic	Parque Nacional Armando Bermúdez	Amphibia	*Eleutherodactylus montanus*	n/a	EN	X					X		
Dominican Republic	Parque Nacional Armando Bermúdez	Amphibia	*Eleutherodactylus patriciae*	n/a	EN	X							
Dominican Republic	Parque Nacional Armando Bermúdez	Amphibia	*Eleutherodactylus pituinus*	n/a	EN	X							
Dominican Republic	Parque Nacional Armando Bermúdez	Amphibia	*Eleutherodactylus ruthae*	n/a	EN	X							
Dominican Republic	Parque Nacional Armando Bermúdez	Amphibia	*Hypsiboas heilprini*	Hispaniolan Green Treefrog	VU		X						
Dominican Republic	Parque Nacional Armando Bermúdez	Mammalia	*Lasiurus minor*	Minor Red Bat	VU				X				
Dominican Republic	Parque Nacional Armando Bermúdez	Aves	*Loxia megaplaga*	Hispaniolan Crossbill	EN	X					X		
Dominican Republic	Parque Nacional Armando Bermúdez	Amphibia	*Osteopilus vastus*	Hispaniolan Giant Treefrog	VU		X						
Dominican Republic	Parque Nacional Armando Bermúdez	Pinopsida	*Pinus occidentalis*	Hispaniolan Pine	EN	X							
Dominican Republic	Parque Nacional Armando Bermúdez	Mammalia	*Plagiodontia aedium*	Hispaniolan Hutia	EN			X					
Dominican Republic	Parque Nacional Armando Bermúdez	Pinopsida	*Podocarpus buchii*	Tachuela	EN			X					
Dominican Republic	Parque Nacional Armando Bermúdez	Pinopsida	*Podocarpus hispaniolensis*	n/a	EN	X					X		
Dominican Republic	Parque Nacional Armando Bermúdez	Aves	*Psittacara chloropterus*	Hispaniolan Parakeet	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Dominican Republic	Parque Nacional Armando Bermúdez	Mammalia	*Solenodon paradoxus*	Hispaniolan Solenodon	EN	X							
Dominican Republic	Parque Nacional Armando Bermúdez	Aves	*Tachycineta euchrysea*	Golden Swallow	VU		X						
Dominican Republic	Parque Nacional Armando Bermúdez	Aves	*Turdus swalesi*	La Selle Thrush	VU	X					X		
Dominican Republic	Parque Nacional Armando Bermúdez	Aves	*Xenoligea montana*	White-winged Warbler	VU		X				X		
Dominican Republic	Parque Nacional Cabo Cabrón	Amphibia	*Eleutherodactylus ruthae*	n/a	EN	X							
Dominican Republic	Parque Nacional Cabo Cabrón	Mammalia	*Solenodon paradoxus*	Hispaniolan Solenodon	EN	X							
Dominican Republic	Parque Nacional Cotubanamá	Aves	*Amazona ventralis*	Hispaniolan Amazon	VU				X				
Dominican Republic	Parque Nacional Cotubanamá	Aves	*Corvus leucognaphalus*	White-necked Crow	VU		X						
Dominican Republic	Parque Nacional Cotubanamá	Reptilia	*Cyclura cornuta*	Rhinoceros Iguana	VU				X				
Dominican Republic	Parque Nacional Cotubanamá	Amphibia	*Eleutherodactylus probolaeus*	n/a	EN	X							
Dominican Republic	Parque Nacional Cotubanamá	Magnoliopsida	*Pereskia quisqueyana*	n/a	CR	X							
Dominican Republic	Parque Nacional Cotubanamá	Mammalia	*Plagiodontia aedium*	Hispaniolan Hutia	EN			X					
Dominican Republic	Parque Nacional Cotubanamá	Mammalia	*Solenodon paradoxus*	Hispaniolan Solenodon	EN	X							
Dominican Republic	Parque Nacional Cotubanamá	Magnoliopsida	*Zanthoxylum flavum*	West Indian Satinwood	VU				X				
Dominican Republic	Parque Nacional El Morro	Magnoliopsida	*Limonium bahamense*	Heather	EN	X							
Dominican Republic	Parque Nacional Francisco Alberto Caamaño Deñó	Magnoliopsida	*Magnolia pallescens*	n/a	EN	X							
Dominican Republic	Parque Nacional Francisco Alberto Caamaño Deñó	Magnoliopsida	*Mimosa domingensis*	n/a	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Dominican Republic	Parque Nacional Jaragua	Aves	*Amazona ventralis*	Hispaniolan Amazon	VU				X		X		
Dominican Republic	Parque Nacional Jaragua	Aves	*Corvus leucognaphalus*	White-necked Crow	VU		X						
Dominican Republic	Parque Nacional Jaragua	Reptilia	*Cyclura cornuta*	Rhinoceros Iguana	VU				X				
Dominican Republic	Parque Nacional Jaragua	Reptilia	*Cyclura ricordii*	Ricord's Iguana	CR			X					
Dominican Republic	Parque Nacional Jaragua	Magnoliopsida	*Ekmanianthe longiflora*	n/a	EN	X							
Dominican Republic	Parque Nacional Jaragua	Amphibia	*Eleutherodactylus alcoae*	Barahona Rock Frog	EN	X					X		
Dominican Republic	Parque Nacional Jaragua	Reptilia	*Haitiophis anomalus*	Hispaniola Racer	VU		X						
Dominican Republic	Parque Nacional Jaragua	Reptilia	*Ialtris agyrtes*	Barreras Fanged Snake	EN	X							
Dominican Republic	Parque Nacional Jaragua	Reptilia	*Leiocephalus altavelensis*	Alto Velo Curlytail Lizard	CR	X				X	X		
Dominican Republic	Parque Nacional Jaragua	Magnoliopsida	*Mimosa domingensis*	n/a	VU		X						
Dominican Republic	Parque Nacional Jaragua	Magnoliopsida	*Pimenta haitiensis*	n/a	VU		X						
Dominican Republic	Parque Nacional Jaragua	Mammalia	*Plagiodontia aedium*	Hispaniolan Hutia	EN			X					
Dominican Republic	Parque Nacional Jaragua	Liliopsida	*Pseudophoenix ekmanii*	n/a	CR	X							
Dominican Republic	Parque Nacional Jaragua	Aves	*Psittacara chloropterus*	Hispaniolan Parakeet	VU		X						
Dominican Republic	Parque Nacional Jaragua	Mammalia	*Solenodon paradoxus*	Hispaniolan Solenodon	EN	X							
Dominican Republic	Parque Nacional Jaragua	Reptilia	*Sphaerodactylus randi*	Pedernales Least Gecko	EN	X					X		
Dominican Republic	Parque Nacional Jaragua	Reptilia	*Sphaerodactylus thompsoni*	Barahona Limestone Sphaero	EN	X							

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Dominican Republic	Parque Nacional Jaragua	Reptilia	*Trachemys decorata*	Hispaniolan Slider	VU		X						
Dominican Republic	Parque Nacional Jaragua	Mammalia	*Trichechus manatus*	American Manatee	VU		X						
Dominican Republic	Parque Nacional Jaragua	Reptilia	*Typhlops syntherus*	Barahona Peninsula Blindsnake	EN	X							
Dominican Republic	Parque Nacional José del Carmen Ramírez	Amphibia	*Eleutherodactylus audanti*	South Island Telegraph Frog	VU		X				X		
Dominican Republic	Parque Nacional José del Carmen Ramírez	Amphibia	*Eleutherodactylus auriculatoides*	n/a	EN	X					X		
Dominican Republic	Parque Nacional José del Carmen Ramírez	Amphibia	*Eleutherodactylus montanus*	n/a	EN	X							
Dominican Republic	Parque Nacional José del Carmen Ramírez	Amphibia	*Eleutherodactylus patriciae*	n/a	EN	X					X		
Dominican Republic	Parque Nacional José del Carmen Ramírez	Amphibia	*Hypsiboas heilprini*	Hispaniolan Green Treefrog	VU		X						
Dominican Republic	Parque Nacional José del Carmen Ramírez	Pinopsida	*Juniperus gracilior*	Sabina	EN	X							
Dominican Republic	Parque Nacional José del Carmen Ramírez	Amphibia	*Osteopilus pulchrilineatus*	Hispaniolan Yellow Treefrog	VU		X						
Dominican Republic	Parque Nacional José del Carmen Ramírez	Amphibia	*Osteopilus vastus*	Hispaniolan Giant Treefrog	VU		X						
Dominican Republic	Parque Nacional José del Carmen Ramírez	Pinopsida	*Pinus occidentalis*	Hispaniolan Pine	EN	X							
Dominican Republic	Parque Nacional José del Carmen Ramírez	Pinopsida	*Podocarpus buchii*	Tachuela	EN			X			X		
Dominican Republic	Parque Nacional Lago Enriquillo e Isla Cabritos	Aves	*Amazona ventralis*	Hispaniolan Amazon	VU				X				
Dominican Republic	Parque Nacional Lago Enriquillo e Isla Cabritos	Aves	*Corvus leucognaphalus*	White-necked Crow	VU		X						
Dominican Republic	Parque Nacional Lago Enriquillo e Isla Cabritos	Reptilia	*Crocodylus acutus*	American Crocodile	VU				X				
Dominican Republic	Parque Nacional Lago Enriquillo e Isla Cabritos	Reptilia	*Cyclura cornuta*	Rhinoceros Iguana	VU				X				
Dominican Republic	Parque Nacional Lago Enriquillo e Isla Cabritos	Reptilia	*Cyclura ricordii*	Ricord's Iguana	CR			X					

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Dominican Republic	Parque Nacional Lago Enriquillo e Isla Cabritos	Amphibia	*Eleutherodactylus pictissimus*	Hispaniolan Yellow-mottled Frog	VU		X						
Dominican Republic	Parque Nacional Lago Enriquillo e Isla Cabritos	Actinopterygii	*Gambusia dominicensis*	Domingo Mosquito Fish	EN	X							
Dominican Republic	Parque Nacional Lago Enriquillo e Isla Cabritos	Amphibia	*Peltophryne guentheri*	Southern Crested Toad	VU		X						
Dominican Republic	Parque Nacional Lago Enriquillo e Isla Cabritos	Magnoliopsida	*Pereskia portulacifolia*	n/a	VU		X						
Dominican Republic	Parque Nacional Lago Enriquillo e Isla Cabritos	Magnoliopsida	*Senna domingensis*	n/a	VU		X						
Dominican Republic	Parque Nacional Lago Enriquillo e Isla Cabritos	Reptilia	*Sphaerodactylus cryphius*	Bakoruco Least Gecko	EN	X							
Dominican Republic	Parque Nacional Lago Enriquillo e Isla Cabritos	Reptilia	*Trachemys decorata*	Hispaniolan Slider	VU		X						
Dominican Republic	Parque Nacional Loma Nalga de Maco y Río Limpio	Aves	*Amazona ventralis*	Hispaniolan Amazon	VU				X				
Dominican Republic	Parque Nacional Loma Nalga de Maco y Río Limpio	Aves	*Coccyzus rufigularis*	Bay-breasted Cuckoo	EN	X					X		
Dominican Republic	Parque Nacional Loma Nalga de Maco y Río Limpio	Aves	*Corvus leucognaphalus*	White-necked Crow	VU		X						
Dominican Republic	Parque Nacional Loma Nalga de Maco y Río Limpio	Amphibia	*Eleutherodactylus audanti*	South Island Telegraph Frog	VU		X						
Dominican Republic	Parque Nacional Loma Nalga de Maco y Río Limpio	Amphibia	*Eleutherodactylus auriculatoides*	n/a	EN	X							
Dominican Republic	Parque Nacional Loma Nalga de Maco y Río Limpio	Amphibia	*Eleutherodactylus montanus*	n/a	EN	X							
Dominican Republic	Parque Nacional Loma Nalga de Maco y Río Limpio	Amphibia	*Eleutherodactylus wetmorei*	Tiburon Whistling Frog	VU		X						
Dominican Republic	Parque Nacional Loma Nalga de Maco y Río Limpio	Amphibia	*Osteopilus pulchrilineatus*	Hispaniolan Yellow Treefrog	VU		X						
Dominican Republic	Parque Nacional Loma Nalga de Maco y Río Limpio	Pinopsida	*Podocarpus hispaniolensis*	n/a	EN	X							
Dominican Republic	Parque Nacional Loma Nalga de Maco y Río Limpio	Aves	*Psittacara chloropterus*	Hispaniolan Parakeet	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Dominican Republic	Parque Nacional Loma Nalga de Maco y Río Limpio	Aves	*Tachycineta euchrysea*	Golden Swallow	VU		X						
Dominican Republic	Parque Nacional Loma Nalga de Maco y Río Limpio	Aves	*Xenoligea montana*	White-winged Warbler	VU		X						
Dominican Republic	Parque Nacional Los Haitises	Magnoliopsida	*Abarema abbottii*	n/a	VU		X						
Dominican Republic	Parque Nacional Los Haitises	Aves	*Amazona ventralis*	Hispaniolan Amazon	VU				X				
Dominican Republic	Parque Nacional Los Haitises	Aves	*Buteo ridgwayi*	Ridgway's Hawk	CR	X					X		
Dominican Republic	Parque Nacional Los Haitises	Aves	*Corvus leucognaphalus*	White-necked Crow	VU		X				X		
Dominican Republic	Parque Nacional Los Haitises	Magnoliopsida	*Huertea cubensis*	n/a	VU		X						
Dominican Republic	Parque Nacional Los Haitises	Mammalia	*Plagiodontia aedium*	Hispaniolan Hutia	EN			X					
Dominican Republic	Parque Nacional Los Haitises	Magnoliopsida	*Senna domingensis*	n/a	VU		X						
Dominican Republic	Parque Nacional Los Haitises	Magnoliopsida	*Sideroxylon dominicanum*	n/a	VU		X						
Dominican Republic	Parque Nacional Los Haitises	Mammalia	*Solenodon paradoxus*	Hispaniolan Solenodon	EN	X							
Dominican Republic	Parque Nacional Los Haitises	Reptilia	*Sphaerodactylus cochranae*	Cochran's Least Gecko	CR	X					X		
Dominican Republic	Parque Nacional Los Haitises	Reptilia	*Sphaerodactylus samanensis*	Samana Least Gecko	CR	X					X		
Dominican Republic	Parque Nacional Los Haitises	Mammalia	*Trichechus manatus*	American Manatee	VU		X						
Dominican Republic	Parque Nacional Manglares de Estero Balsa	Reptilia	*Crocodylus acutus*	American Crocodile	VU				X				
Dominican Republic	Parque Nacional Manglares de Estero Balsa	Reptilia	*Cyclura cornuta*	Rhinoceros Iguana	VU				X				
Dominican Republic	Parque Nacional Manglares de Estero Balsa	Amphibia	*Peltophryne guentheri*	Southern Crested Toad	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Dominican Republic	Parque Nacional Manglares del Bajo Yuna	Mammalia	*Plagiodontia aedium*	Hispaniolan Hutia	EN			X					
Dominican Republic	Parque Nacional Montaña La Humeadora	Aves	*Amazona ventralis*	Hispaniolan Amazon	VU				X				
Dominican Republic	Parque Nacional Montaña La Humeadora	Amphibia	*Eleutherodactylus auriculatoides*	n/a	EN	X							
Dominican Republic	Parque Nacional Montaña La Humeadora	Amphibia	*Eleutherodactylus minutus*	n/a	EN	X							
Dominican Republic	Parque Nacional Montaña La Humeadora	Amphibia	*Eleutherodactylus patriciae*	n/a	EN	X							
Dominican Republic	Parque Nacional Montaña La Humeadora	Amphibia	*Eleutherodactylus pituinus*	n/a	EN	X							
Dominican Republic	Parque Nacional Montaña La Humeadora	Pinopsida	*Juniperus gracilior*	Sabina	EN	X							
Dominican Republic	Parque Nacional Montaña La Humeadora	Magnoliopsida	*Magnolia pallescens*	n/a	EN	X							
Dominican Republic	Parque Nacional Montaña La Humeadora	Amphibia	*Osteopilus vastus*	Hispaniolan Giant Treefrog	VU		X						
Dominican Republic	Parque Nacional Montaña La Humeadora	Pinopsida	*Podocarpus hispaniolensis*	n/a	EN	X							
Dominican Republic	Parque Nacional Montaña La Humeadora	Aves	*Psittacara chloropterus*	Hispaniolan Parakeet	VU		X						
Dominican Republic	Parque Nacional Montaña La Humeadora	Aves	*Turdus swalesi*	La Selle Thrush	VU	X							
Dominican Republic	Parque Nacional Sierra de Bahoruco	Aves	*Amazona ventralis*	Hispaniolan Amazon	VU				X				
Dominican Republic	Parque Nacional Sierra de Bahoruco	Aves	*Calyptophilus tertius*	Western Chat-tanager	VU		X				X		
Dominican Republic	Parque Nacional Sierra de Bahoruco	Aves	*Coccyzus rufigularis*	Bay-breasted Cuckoo	EN	X					X		
Dominican Republic	Parque Nacional Sierra de Bahoruco	Aves	*Corvus leucognaphalus*	White-necked Crow	VU		X						
Dominican Republic	Parque Nacional Sierra de Bahoruco	Reptilia	*Cyclura cornuta*	Rhinoceros Iguana	VU				X				

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Dominican Republic	Parque Nacional Sierra de Bahoruco	Magnoliopsida	*Ekmanianthe longiflora*	n/a	EN	X							
Dominican Republic	Parque Nacional Sierra de Bahoruco	Amphibia	*Eleutherodactylus alcoae*	Barahona Rock Frog	EN	X							
Dominican Republic	Parque Nacional Sierra de Bahoruco	Amphibia	*Eleutherodactylus armstrongi*	Baoruco Hammer Frog	EN	X							
Dominican Republic	Parque Nacional Sierra de Bahoruco	Amphibia	*Eleutherodactylus audanti*	South Island Telegraph Frog	VU		X				X		
Dominican Republic	Parque Nacional Sierra de Bahoruco	Amphibia	*Eleutherodactylus fowleri*	Fowler's Robber Frog	CR	X							
Dominican Republic	Parque Nacional Sierra de Bahoruco	Amphibia	*Eleutherodactylus furcyensis*	La Selle Red-legged Frog	CR	X							
Dominican Republic	Parque Nacional Sierra de Bahoruco	Amphibia	*Eleutherodactylus heminota*	Half-stripe Bromeliad Frog	EN	X							
Dominican Republic	Parque Nacional Sierra de Bahoruco	Amphibia	*Eleutherodactylus hypostenor*	Baoruco Burrowing Frog	EN	X							
Dominican Republic	Parque Nacional Sierra de Bahoruco	Amphibia	*Eleutherodactylus jugans*	La Selle Dusky Frog	CR	X							
Dominican Republic	Parque Nacional Sierra de Bahoruco	Amphibia	*Eleutherodactylus leoncei*	Southern Pastel Frog	CR	X							
Dominican Republic	Parque Nacional Sierra de Bahoruco	Amphibia	*Eleutherodactylus nortoni*	Spiny Giant Frog	CR			X					
Dominican Republic	Parque Nacional Sierra de Bahoruco	Amphibia	*Eleutherodactylus oxyrhyncus*	Rednose Robber Frog	CR	X							
Dominican Republic	Parque Nacional Sierra de Bahoruco	Amphibia	*Eleutherodactylus pictissimus*	Hispaniolan Yellow-mottled Frog	VU		X						
Dominican Republic	Parque Nacional Sierra de Bahoruco	Amphibia	*Eleutherodactylus rufifemoralis*	Red-legged Robber Frog	CR								
Dominican Republic	Parque Nacional Sierra de Bahoruco	Amphibia	*Eleutherodactylus semipalmatus*	Foothill Robber Frog	CR	X							

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Dominican Republic	Parque Nacional Sierra de Bahoruco	Amphibia	*Eleutherodactylus wetmorei*	Tiburon Whistling Frog	VU		X						
Dominican Republic	Parque Nacional Sierra de Bahoruco	Pinopsida	*Juniperus gracilior*	Sabina	EN	X							
Dominican Republic	Parque Nacional Sierra de Bahoruco	Mammalia	*Lasiurus minor*	Minor Red Bat	VU				X				
Dominican Republic	Parque Nacional Sierra de Bahoruco	Aves	*Loxia megaplaga*	Hispaniolan Crossbill	EN	X					X		
Dominican Republic	Parque Nacional Sierra de Bahoruco	Magnoliopsida	*Mimosa domingensis*	n/a	VU		X						
Dominican Republic	Parque Nacional Sierra de Bahoruco	Pinopsida	*Pinus occidentalis*	Hispaniolan Pine	EN	X							
Dominican Republic	Parque Nacional Sierra de Bahoruco	Mammalia	*Plagiodontia aedium*	Hispaniolan Hutia	EN			X			X		
Dominican Republic	Parque Nacional Sierra de Bahoruco	Pinopsida	*Podocarpus buchii*	Tachuela	EN			X					
Dominican Republic	Parque Nacional Sierra de Bahoruco	Aves	*Psittacara chloropterus*	Hispaniolan Parakeet	VU		X						
Dominican Republic	Parque Nacional Sierra de Bahoruco	Aves	*Pterodroma hasitata*	Black-capped Petrel	EN	X							
Dominican Republic	Parque Nacional Sierra de Bahoruco	Mammalia	*Solenodon paradoxus*	Hispaniolan Solenodon	EN	X							
Dominican Republic	Parque Nacional Sierra de Bahoruco	Aves	*Tachycineta euchrysea*	Golden Swallow	VU		X						
Dominican Republic	Parque Nacional Sierra de Bahoruco	Reptilia	*Trachemys decorata*	Hispaniolan Slider	VU		X						
Dominican Republic	Parque Nacional Sierra de Bahoruco	Aves	*Turdus swalesi*	La Selle Thrush	VU	X					X		
Dominican Republic	Parque Nacional Sierra de Bahoruco	Aves	*Xenoligea montana*	White-winged Warbler	VU		X				X		
Dominican Republic	Parque Nacional Sierra de Neyba	Aves	*Amazona ventralis*	Hispaniolan Amazon	VU				X				
Dominican Republic	Parque Nacional Sierra de Neyba	Aves	*Coccyzus rufigularis*	Bay-breasted Cuckoo	EN	X					X		
Dominican Republic	Parque Nacional Sierra de Neyba	Aves	*Corvus leucognaphalus*	White-necked Crow	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Dominican Republic	Parque Nacional Sierra de Neyba	Magnoliopsida	*Ekmanianthe longiflora*	n/a	EN	X							
Dominican Republic	Parque Nacional Sierra de Neyba	Amphibia	*Eleutherodactylus audanti*	South Island Telegraph Frog	VU		X						
Dominican Republic	Parque Nacional Sierra de Neyba	Amphibia	*Eleutherodactylus parabates*	Independencia Robber Frog	CR	X							
Dominican Republic	Parque Nacional Sierra de Neyba	Amphibia	*Eleutherodactylus wetmorei*	Tiburon Whistling Frog	VU		X						
Dominican Republic	Parque Nacional Sierra de Neyba	Pinopsida	*Juniperus gracilior*	Sabina	EN	X							
Dominican Republic	Parque Nacional Sierra de Neyba	Mammalia	*Lasiurus minor*	Minor Red Bat	VU				X				
Dominican Republic	Parque Nacional Sierra de Neyba	Mammalia	*Plagiodontia aedium*	Hispaniolan Hutia	EN			X					
Dominican Republic	Parque Nacional Sierra de Neyba	Pinopsida	*Podocarpus buchii*	Tachuela	EN			X					
Dominican Republic	Parque Nacional Sierra de Neyba	Pinopsida	*Podocarpus hispaniolensis*	n/a	EN	X							
Dominican Republic	Parque Nacional Sierra de Neyba	Mammalia	*Solenodon paradoxus*	Hispaniolan Solenodon	EN	X							
Dominican Republic	Parque Nacional Sierra de Neyba	Aves	*Tachycineta euchrysea*	Golden Swallow	VU		X						
Dominican Republic	Parque Nacional Sierra de Neyba	Aves	*Turdus swalesi*	La Selle Thrush	VU	X							
Dominican Republic	Parque Nacional Sierra de Neyba	Aves	*Xenoligea montana*	White-winged Warbler	VU		X						
Dominican Republic	Parque Nacional Sierra Martín García	Aves	*Amazona ventralis*	Hispaniolan Amazon	VU				X				
Dominican Republic	Parque Nacional Sierra Martín García	Reptilia	*Cyclura cornuta*	Rhinoceros Iguana	VU				X				
Dominican Republic	Parque Nacional Sierra Martín García	Amphibia	*Eleutherodactylus pictissimus*	Hispaniolan Yellow-mottled Frog	VU		X						
Dominican Republic	Parque Nacional Sierra Martín García	Reptilia	*Mitophis asbolepis*	Martin Garcia Threadsnake	CR	X					X	X	

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Dominican Republic	Parque Nacional Sierra Martín García	Amphibia	*Peltophryne guentheri*	Southern Crested Toad	VU		X						
Dominican Republic	Parque Nacional Sierra Martín García	Reptilia	*Phyllodactylus hispaniolae*	Dominican Leaf-toed Gecko	EN	X					X		
Dominican Republic	Parque Nacional Sierra Martín García	Reptilia	*Sphaerodactylus ladae*	Spotted Agave Geckolet	EN	X				X	X	X	
Dominican Republic	Parque Nacional Sierra Martín García	Reptilia	*Sphaerodactylus perissodactylius*	Martin Garcia Geckolet	EN	X					X	X	
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Aves	*Amazona ventralis*	Hispaniolan Amazon	VU				X				
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Magnoliopsida	*Cleyera bolleana*	n/a	VU		X						
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Magnoliopsida	*Cleyera vaccinioides*	n/a	VU		X						
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Amphibia	*Eleutherodactylus audanti*	South Island Telegraph Frog	VU		X				X		
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Amphibia	*Eleutherodactylus auriculatoides*	n/a	EN	X					X		
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Amphibia	*Eleutherodactylus haitianus*	n/a	EN	X					X		
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Amphibia	*Eleutherodactylus minutus*	n/a	EN	X					X		
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Amphibia	*Eleutherodactylus montanus*	n/a	EN	X					X		
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Amphibia	*Eleutherodactylus patriciae*	n/a	EN	X					X		
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Amphibia	*Eleutherodactylus pituinus*	n/a	EN	X					X		

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Amphibia	*Hypsiboas heilprini*	Hispaniolan Green Treefrog	VU		X						
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Pinopsida	*Juniperus gracilior*	Sabina	EN	X							
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Mammalia	*Lasiurus minor*	Minor Red Bat	VU				X				
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Aves	*Loxia megaplaga*	Hispaniolan Crossbill	EN	X					X		
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Magnoliopsida	*Magnolia pallescens*	n/a	EN	X					X		
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Amphibia	*Osteopilus vastus*	Hispaniolan Giant Treefrog	VU		X						
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Pinopsida	*Pinus occidentalis*	Hispaniolan Pine	EN	X							
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Mammalia	*Plagiodontia aedium*	Hispaniolan Hutia	EN			X					
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Pinopsida	*Podocarpus buchii*	Tachuela	EN			X					
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Pinopsida	*Podocarpus hispaniolensis*	n/a	EN	X					X		
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Aves	*Psittacara chloropterus*	Hispaniolan Parakeet	VU		X						
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Mammalia	*Solenodon paradoxus*	Hispaniolan Solenodon	EN	X							
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Aves	*Tachycineta euchrysea*	Golden Swallow	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Aves	*Turdus swalesi*	La Selle Thrush	VU	X					X		
Dominican Republic	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	Aves	*Xenoligea montana*	White-winged Warbler	VU		X				X		
Dominican Republic	Playa Bayahibe	Magnoliopsida	*Pereskia quisqueyana*	n/a	CR	X							
Dominican Republic	Punta Cana	Aves	*Amazona ventralis*	Hispaniolan Amazon	VU				X				
Dominican Republic	Punta Cana	Aves	*Buteo ridgwayi*	Ridgway's Hawk	CR	X							
Dominican Republic	Refugio de Vida Silvestre Cayos Siete Hermanos	Magnoliopsida	*Limonium bahamense*	Heather	EN	X							
Dominican Republic	Refugio de Vida Silvestre Laguna Cabral o Rincón	Reptilia	*Cyclura cornuta*	Rhinoceros Iguana	VU				X				
Dominican Republic	Refugio de Vida Silvestre Laguna Cabral o Rincón	Amphibia	*Peltophryne guentheri*	Southern Crested Toad	VU		X						
Dominican Republic	Refugio de Vida Silvestre Laguna Cabral o Rincón	Aves	*Psittacara chloropterus*	Hispaniolan Parakeet	VU		X						
Dominican Republic	Refugio de Vida Silvestre Laguna Cabral o Rincón	Magnoliopsida	*Senna domingensis*	n/a	VU		X						
Dominican Republic	Refugio de Vida Silvestre Laguna Cabral o Rincón	Reptilia	*Trachemys decorata*	Hispaniolan Slider	VU		X						
Dominican Republic	Refugio de Vida Silvestre Lagunas de Bávaro y el Caletón	Amphibia	*Eleutherodactylus pictissimus*	Hispaniolan Yellow-mottled Frog	VU		X						
Dominican Republic	Refugio de Vida Silvestre Lagunas de Bávaro y el Caletón	Amphibia	*Eleutherodactylus probolaeus*	n/a	EN	X							
Dominican Republic	Refugio de Vida Silvestre Lagunas de Bávaro y el Caletón	Amphibia	*Eleutherodactylus ruthae*	n/a	EN	X							
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Aves	*Amazona ventralis*	Hispaniolan Amazon	VU				X				

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Aves	*Calyptophilus tertius*	Western Chat-tanager	VU		X						
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Aves	*Corvus leucognaphalus*	White-necked Crow	VU		X						
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Amphibia	*Eleutherodactylus alcoae*	Barahona Rock Frog	EN	X							
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Amphibia	*Eleutherodactylus armstrongi*	Baoruco Hammer Frog	EN	X							
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Amphibia	*Eleutherodactylus audanti*	South Island Telegraph Frog	VU		X						
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Amphibia	*Eleutherodactylus heminota*	Half-stripe Bromeliad Frog	EN	X							
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Amphibia	*Eleutherodactylus hypostenor*	Baoruco Burrowing Frog	EN	X							
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Amphibia	*Eleutherodactylus leoncei*	Southern Pastel Frog	CR	X							
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Amphibia	*Eleutherodactylus nortoni*	Spiny Giant Frog	CR			X					
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Amphibia	*Eleutherodactylus pictissimus*	Hispaniolan Yellow-mottled Frog	VU		X						
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Amphibia	*Eleutherodactylus rufifemoralis*	Red-legged Robber Frog	CR	X							
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Amphibia	*Eleutherodactylus wetmorei*	Tiburon Whistling Frog	VU		X						
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Aves	*Geotrygon leucometopia*	White-fronted Quail-dove	EN	X							

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Magnoliopsida	*Huertea cubensis*	n/a	VU		X						
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Aves	*Loxia megaplaga*	Hispaniolan Crossbill	EN	X							
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Magnoliopsida	*Magnolia hamorii*	Caimoni	EN	X							
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Pinopsida	*Pinus occidentalis*	Hispaniolan Pine	EN	X							
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Mammalia	*Plagiodontia aedium*	Hispaniolan Hutia	EN			X					
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Pinopsida	*Podocarpus hispaniolensis*	n/a	EN	X							
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Aves	*Psittacara chloropterus*	Hispaniolan Parakeet	VU		X						
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Mammalia	*Solenodon paradoxus*	Hispaniolan Solenodon	EN	X							
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Magnoliopsida	*Stenostomum radiatum*	n/a	VU		X						
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Aves	*Tachycineta euchrysea*	Golden Swallow	VU		X						
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Aves	*Turdus swalesi*	La Selle Thrush	VU	X							
Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte	Aves	*Xenoligea montana*	White-winged Warbler	VU		X						
Dominican Republic	Reserva Biológica Loma Charco Azul	Aves	*Coccyzus rufigularis*	Bay-breasted Cuckoo	EN	X							

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Dominican Republic	Reserva Biológica Loma Charco Azul	Reptilia	*Cyclura ricordii*	Ricord's Iguana	CR			X					
Dominican Republic	Reserva Biológica Loma Charco Azul	Reptilia	*Haitiophis anomalus*	Hispaniola Racer	VU		X						
Dominican Republic	Reserva Biológica Loma Charco Azul	Reptilia	*Sphaerodactylus cryphius*	Bakoruco Least Gecko	EN	X							
Dominican Republic	Reserva Científica Ébano Verde	Magnoliopsida	*Cleyera bolleana*	n/a	VU		X						
Dominican Republic	Reserva Científica Ébano Verde	Amphibia	*Eleutherodactylus auriculatoides*	n/a	EN	X							
Dominican Republic	Reserva Científica Ébano Verde	Amphibia	*Eleutherodactylus minutus*	n/a	EN	X							
Dominican Republic	Reserva Científica Ébano Verde	Amphibia	*Eleutherodactylus pituinus*	n/a	EN	X							
Dominican Republic	Reserva Científica Ébano Verde	Aves	*Geotrygon leucometopia*	White-fronted Quail-dove	EN	X							
Dominican Republic	Reserva Científica Ébano Verde	Magnoliopsida	*Juglans jamaicensis*	West Indian Walnut	VU		X						
Dominican Republic	Reserva Científica Ébano Verde	Mammalia	*Lasiurus minor*	Minor Red Bat	VU				X				
Dominican Republic	Reserva Científica Ébano Verde	Magnoliopsida	*Magnolia pallescens*	n/a	EN	X							
Dominican Republic	Reserva Científica Ébano Verde	Pinopsida	*Podocarpus buchii*	Tachuela	EN			X					
Dominican Republic	Reserva Científica Ébano Verde	Mammalia	*Solenodon paradoxus*	Hispaniolan Solenodon	EN	X							
Dominican Republic	Reserva Científica Ébano Verde	Aves	*Tachycineta euchrysea*	Golden Swallow	VU		X						
Dominican Republic	Reserva Científica Ébano Verde	Aves	*Xenoligea montana*	White-winged Warbler	VU		X						
Dominican Republic	Reserva Científica Loma Barbacoa	Magnoliopsida	*Magnolia domingensis*	n/a	CR			X					
Dominican Republic	Reserva Científica Loma Guaconejo	Amphibia	*Osteopilus pulchrilineatus*	Hispaniolan Yellow Treefrog	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Dominican Republic	Reserva Científica Loma Guaconejo	Mammalia	*Plagiodontia aedium*	Hispaniolan Hutia	EN			X					
Dominican Republic	Reserva Científica Loma Quita Espuela	Aves	*Amazona ventralis*	Hispaniolan Amazon	VU				X				
Dominican Republic	Reserva Científica Loma Quita Espuela	Amphibia	*Osteopilus pulchrilineatus*	Hispaniolan Yellow Treefrog	VU		X						
Dominican Republic	Reserva Científica Loma Quita Espuela	Mammalia	*Plagiodontia aedium*	Hispaniolan Hutia	EN			X					
Dominican Republic	Reserva Científica Loma Quita Espuela	Aves	*Psittacara chloropterus*	Hispaniolan Parakeet	VU		X						
Dominican Republic	Reserva Científica Loma Quita Espuela	Mammalia	*Solenodon paradoxus*	Hispaniolan Solenodon	EN	X							
Dominican Republic	Reserva Forestal Barrero	Magnoliopsida	*Leptocereus paniculatus*	n/a	VU		X						
Dominican Republic	Río Anamuya	Magnoliopsida	*Stahlia monosperma*	Cóbana Polisandro	EN	X							
Grenada	Bathway Beach	Reptilia	*Dermochelys coriacea*	Leatherback	VU				X				
Grenada	Beausejour/Grenville Vale	Aves	*Leptotila wellsi*	Grenada Dove	CR	X					X		
Grenada	Grand Etang National Park	Amphibia	*Pristimantis euphronides*	n/a	EN	X							
Grenada	Levera Beach	Reptilia	*Dermochelys coriacea*	Leatherback	VU				X				
Grenada	Mount Hartman	Aves	*Leptotila wellsi*	Grenada Dove	CR	X					X		
Grenada	Mount Saint Catherine	Amphibia	*Pristimantis euphronides*	n/a	EN	X					X		
Grenada	Perseverance	Aves	*Leptotila wellsi*	Grenada Dove	CR	X							
Grenada	Woodford	Aves	*Leptotila wellsi*	Grenada Dove	CR	X					X		
Grenada	Woodlands	Aves	*Leptotila wellsi*	Grenada Dove	CR	X					X		
Haiti	Aire Protégée de Ressources Naturelles Gérées des Trois Baies	Actinopterygii	*Anguilla rostrata*	American Eel	EN			X					
Haiti	Aire Protégée de Ressources Naturelles Gérées des Trois Baies	Reptilia	*Celestus warreni*	Giant Hispaniolan Galliwasp	VU								

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Haiti	Aire Protégée de Ressources Naturelles Gérées des Trois Baies	Reptilia	*Crocodylus acutus*	American Crocodile	VU				X				
Haiti	Aire Protégée de Ressources Naturelles Gérées des Trois Baies	Reptilia	*Cyclura cornuta*	Rhinoceros Iguana	VU								
Haiti	Aire Protégée de Ressources Naturelles Gérées des Trois Baies	Actinopterygii	*Epinephelus striatus*	Nassau Grouper	EN			X					
Haiti	Aire Protégée de Ressources Naturelles Gérées des Trois Baies	Mammalia	*Trichechus manatus*	American Manatee	VU								
Haiti	Anse-à-Pitres	Reptilia	*Cyclura ricordii*	Ricord's Iguana	CR			X					
Haiti	Baie de l'Acul / Chouchou	Reptilia	*Celestus warreni*	Giant Hispaniolan Galliwasp	VU		X						
Haiti	Baie de l'Acul / Chouchou	Aves	*Corvus leucognaphalus*	White-necked Crow	VU		X						
Haiti	Baie de l'Acul / Chouchou	Reptilia	*Cyclura cornuta*	Rhinoceros Iguana	VU				X				
Haiti	Baie de l'Acul / Chouchou	Actinopterygii	*Epinephelus striatus*	Nassau Grouper	EN			X					
Haiti	Baie de l'Acul / Chouchou	Magnoliopsida	*Huertea cubensis*	n/a	VU		X						
Haiti	Baie de l'Acul / Chouchou	Amphibia	*Osteopilus pulchrilineatus*	Hispaniolan Yellow Treefrog	VU		X						
Haiti	Baie de l'Acul / Chouchou	Aves	*Psittacara chloropterus*	Hispaniolan Parakeet	VU		X						
Haiti	Baie de l'Acul / Chouchou	Magnoliopsida	*Senna domingensis*	n/a	VU		X						
Haiti	Baie de l'Acul / Chouchou	Mammalia	*Trichechus manatus*	American Manatee	VU								
Haiti	Cavaillon	Liliopsida	*Attalea crassispatha*	n/a	CR	X							
Haiti	Cavaillon	Amphibia	*Eleutherodactylus heminota*	Half-stripe Bromeliad Frog	EN	X							
Haiti	Cavaillon	Amphibia	*Eleutherodactylus paulsoni*	Paulson's Robber Frog	CR	X							

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Haiti	Cavaillon	Amphibia	*Eleutherodactylus wetmorei*	Tiburon Whistling Frog	VU		X						
Haiti	Cavaillon	Amphibia	*Osteopilus pulchrilineatus*	Hispaniolan Yellow Treefrog	VU		X						
Haiti	Aire Protégée de Ressources Naturelles Gérées de Baradères-Cayemites	Reptilia	*Amphisbaena caudalis*	Cayemite Long-tailed Amphisbaena	EN	X				X	X		
Haiti	Aire Protégée de Ressources Naturelles Gérées de Baradères-Cayemites	Reptilia	*Amphisbaena cayemite*	Cayemite Short-tailed Amphisbaena	CR	X				X	X		
Haiti	Aire Protégée de Ressources Naturelles Gérées de Baradères-Cayemites	Reptilia	*Cyclura cornuta*	Rhinoceros Iguana	VU				X				
Haiti	Chaînes des Cahos	Magnoliopsida	*Ekmanianthe longiflora*	n/a	EN	X							
Haiti	Citadelle – Grottes Dondon	Aves	*Amazona ventralis*	Hispaniolan Amazon	VU				X				
Haiti	Citadelle – Grottes Dondon	Reptilia	*Celestus warreni*	Giant Hispaniolan Galliwasp	VU		X						
Haiti	Citadelle – Grottes Dondon	Aves	*Corvus leucognaphalus*	White-necked Crow	VU		X						
Haiti	Citadelle – Grottes Dondon	Amphibia	*Eleutherodactylus poolei*	n/a	CR	X					X		
Haiti	Citadelle – Grottes Dondon	Aves	*Psittacara chloropterus*	Hispaniolan Parakeet	VU		X						
Haiti	Dame Marie	Reptilia	*Anolis haetianus*	Tiburon Stout Anole	EN	X					X		
Haiti	Dame Marie	Amphibia	*Eleutherodactylus caribe*	n/a	CR	X				X	X		
Haiti	Dame Marie	Amphibia	*Eleutherodactylus heminota*	Half-stripe Bromeliad Frog	EN	X							
Haiti	Dame Marie	Magnoliopsida	*Huertea cubensis*	n/a	VU		X						
Haiti	Dame Marie	Amphibia	*Osteopilus pulchrilineatus*	Hispaniolan Yellow Treefrog	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Haiti	Delta de l'Artibonite	Reptilia	*Crocodylus acutus*	American Crocodile	VU				X				
Haiti	Delta de l'Artibonite	Reptilia	*Cyclura cornuta*	Rhinoceros Iguana	VU				X				
Haiti	Delta de l'Artibonite	Reptilia	*Trachemys decorata*	Hispaniolan Slider	VU		X						
Haiti	Dépression de Jacmel	Amphibia	*Eleutherodactylus glaphycompus*	n/a	EN	X							
Haiti	Dépression de Jacmel	Amphibia	*Eleutherodactylus heminota*	Half-stripe Bromeliad Frog	EN	X							
Haiti	Dépression de Jacmel	Amphibia	*Eleutherodactylus paulsoni*	Paulson's Robber Frog	CR	X							
Haiti	Dépression de Jacmel	Magnoliopsida	*Guarea sphenophylla*	n/a	VU		X						
Haiti	Dépression de Jacmel	Mammalia	*Lasiurus minor*	Minor Red Bat	VU				X				
Haiti	Dépression de Jacmel	Magnoliopsida	*Mappia racemosa*	n/a	VU				X				
Haiti	Dépression de Jacmel	Magnoliopsida	*Picrasma excelsa*	n/a	VU				X				
Haiti	Dépression de Jacmel	Magnoliopsida	*Pouteria hotteana*	n/a	EN	X							
Haiti	Dépression de Jacmel	Liliopsida	*Pseudophoenix lediniana*	n/a	CR	X							
Haiti	Dubedou – Morne Balance	Magnoliopsida	*Albizia leonardii*	n/a	VU		X						
Haiti	Dubedou – Morne Balance	Reptilia	*Celestus warreni*	Giant Hispaniolan Galliwasp	VU		X						
Haiti	Dubedou – Morne Balance	Magnoliopsida	*Ekmanianthe longiflora*	n/a	EN	X							
Haiti	Dubedou – Morne Balance	Amphibia	*Osteopilus pulchrilineatus*	Hispaniolan Yellow Treefrog	VU		X						
Haiti	Dubedou – Morne Balance	Pinopsida	*Podocarpus buchii*	Tachuela	EN			X					

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Haiti	Fond des Nêgres – L'Etang Miragoane	Magnoliopsida	*Albizia berteriana*	n/a	VU		X						
Haiti	Fond des Nêgres – L'Etang Miragoane	Liliopsida	*Attalea crassispatha*	n/a	CR	X							
Haiti	Fond des Nêgres – L'Etang Miragoane	Magnoliopsida	*Catalpa brevipes*	n/a	VU		X						
Haiti	Fond des Nêgres – L'Etang Miragoane	Magnoliopsida	*Ekmanianthe longiflora*	n/a	EN	X							
Haiti	Fond des Nêgres – L'Etang Miragoane	Amphibia	*Eleutherodactylus glaphycompus*	n/a	EN	X					X		
Haiti	Fond des Nêgres – L'Etang Miragoane	Amphibia	*Eleutherodactylus heminota*	Half-stripe Bromeliad Frog	EN	X							
Haiti	Fond des Nêgres – L'Etang Miragoane	Amphibia	*Eleutherodactylus wetmorei*	Tiburon Whistling Frog	VU		X						
Haiti	Fond des Nêgres – L'Etang Miragoane	Amphibia	*Hypsiboas heilprini*	Hispaniolan Green Treefrog	VU		X						
Haiti	Fond des Nêgres – L'Etang Miragoane	Magnoliopsida	*Nectandra pulchra*	n/a	CR	X							
Haiti	Fond des Nêgres – L'Etang Miragoane	Magnoliopsida	*Picrasma excelsa*	n/a	VU				X				
Haiti	Parc National Naturel Forêt des Pins-Unité 1	Aves	*Calyptophilus tertius*	Western Chat-tanager	VU		X						
Haiti	Parc National Naturel Forêt des Pins-Unité 1	Aves	*Loxia megaplaga*	Hispaniolan Crossbill	EN	X							
Haiti	Parc National Naturel Forêt des Pins-Unité 1	Magnoliopsida	*Nectandra pulchra*	n/a	CR	X							
Haiti	Parc National Naturel Forêt des Pins-Unité 1	Pinopsida	*Podocarpus hispaniolensis*	n/a	EN	X							
Haiti	Parc National Naturel Forêt des Pins-Unité 1	Aves	*Pterodroma hasitata*	Black-capped Petrel	EN	X							
Haiti	Parc National Naturel Forêt des Pins-Unité 1	Aves	*Tachycineta euchrysea*	Golden Swallow	VU		X						
Haiti	Parc National Naturel Forêt des Pins-Unité 1	Aves	*Turdus swalesi*	La Selle Thrush	VU	X							

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Haiti	Parc National Naturel de Grand Bois	Aves	*Calyptophilus tertius*	Western Chat-tanager	VU		X						
Haiti	Parc National Naturel de Grand Bois	Amphibia	*Eleutherodactylus amadeus*	Haitian Robber Frog	CR	X							
Haiti	Parc National Naturel de Grand Bois	Amphibia	*Eleutherodactylus apostates*	Apostates Robber Frog	CR			X					
Haiti	Parc National Naturel de Grand Bois	Amphibia	*Eleutherodactylus audanti*	South Island Telegraph Frog	VU		X						
Haiti	Parc National Naturel de Grand Bois	Amphibia	*Eleutherodactylus brevirostris*	Short-nosed Green Frog	CR			X					
Haiti	Parc National Naturel de Grand Bois	Amphibia	*Eleutherodactylus counouspeus*	n/a	EN	X							
Haiti	Parc National Naturel de Grand Bois	Amphibia	*Eleutherodactylus eunaster*	Les Cayes Robber Frog	CR			X					
Haiti	Parc National Naturel de Grand Bois	Amphibia	*Eleutherodactylus glandulifer*	Doris' Robber Frog	CR			X					
Haiti	Parc National Naturel de Grand Bois	Amphibia	*Eleutherodactylus glaphycompus*	n/a	EN	X							
Haiti	Parc National Naturel de Grand Bois	Amphibia	*Eleutherodactylus nortoni*	Spiny Giant Frog	CR			X					
Haiti	Parc National Naturel de Grand Bois	Amphibia	*Eleutherodactylus oxyrhyncus*	Rednose Robber Frog	CR			X					
Haiti	Parc National Naturel de Grand Bois	Amphibia	*Eleutherodactylus paulsoni*	Paulson's Robber Frog	CR			X					
Haiti	Parc National Naturel de Grand Bois	Amphibia	*Eleutherodactylus semipalmatus*	Foothill Robber Frog	CR	X							
Haiti	Parc National Naturel de Grand Bois	Magnoliopsida	*Magnolia ekmanii*	n/a	CR			X					
Haiti	Parc National Naturel de Grand Bois	Aves	*Tachycineta euchrysea*	Golden Swallow	VU		X						
Haiti	Parc National Naturel de Grand Bois	Aves	*Xenoligea montana*	White-winged Warbler	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Haiti	Ile de la Tortue Est	Reptilia	*Celestus warreni*	Giant Hispaniolan Galliwasp	VU		X						
Haiti	Ile de la Tortue Est	Reptilia	*Cyclura cornuta*	Rhinoceros Iguana	VU				X				
Haiti	Ile de la Tortue Ouest	Magnoliopsida	*Albizia berteriana*	n/a	VU		X						
Haiti	Ile de la Tortue Ouest	Reptilia	*Cyclura cornuta*	Rhinoceros Iguana	VU				X				
Haiti	Parc National Naturel La Visite	Aves	*Calyptophilus tertius*	Western Chat-tanager	VU		X						
Haiti	Parc National Naturel La Visite	Amphibia	*Eleutherodactylus heminota*	Half-stripe Bromeliad Frog	EN	X							
Haiti	Parc National Naturel La Visite	Amphibia	*Eleutherodactylus jugans*	La Selle Dusky Frog	CR			X					
Haiti	Parc National Naturel La Visite	Amphibia	*Eleutherodactylus oxyrhyncus*	Rednose Robber Frog	CR			X					
Haiti	Parc National Naturel La Visite	Aves	*Loxia megaplaga*	Hispaniolan Crossbill	EN	X							
Haiti	Parc National Naturel La Visite	Magnoliopsida	*Mappia racemosa*	n/a	VU				X				
Haiti	Parc National Naturel La Visite	Mammalia	*Plagiodontia aedium*	Hispaniolan Hutia	EN			X					
Haiti	Parc National Naturel La Visite	Aves	*Psittacara chloropterus*	Hispaniolan Parakeet	VU		X						
Haiti	Parc National Naturel La Visite	Aves	*Pterodroma hasitata*	Black-capped Petrel	EN	X							
Haiti	Parc National Naturel La Visite	Aves	*Tachycineta euchrysea*	Golden Swallow	VU		X						
Haiti	Parc National Naturel La Visite	Aves	*Turdus swalesi*	La Selle Thrush	VU	X							
Haiti	Parc National Naturel La Visite	Aves	*Xenoligea montana*	White-winged Warbler	VU		X						
Haiti	Lac Azuéi – Trou Caiman	Aves	*Amazona ventralis*	Hispaniolan Amazon	VU				X				
Haiti	Lac Azuéi – Trou Caiman	Reptilia	*Celestus warreni*	Giant Hispaniolan Galliwasp	VU		X						
Haiti	Lac Azuéi – Trou Caiman	Aves	*Corvus leucognaphalus*	White-necked Crow	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Haiti	Lac Azuéi – Trou Caiman	Reptilia	*Crocodylus acutus*	American Crocodile	VU				X				
Haiti	Lac Azuéi – Trou Caiman	Reptilia	*Cyclura cornuta*	Rhinoceros Iguana	VU				X				
Haiti	Lac Azuéi – Trou Caiman	Actinopterygii	*Gambusia dominicensis*	Domingo Mosquito Fish	EN	X							
Haiti	Lac Azuéi – Trou Caiman	Amphibia	*Peltophryne guentheri*	Southern Crested Toad	VU		X						
Haiti	Lac Azuéi – Trou Caiman	Reptilia	*Trachemys decorata*	Hispaniolan Slider	VU		X						
Haiti	Parc National Naturel Macaya	Liliopsida	*Acianthera compressicaulis*	n/a	EN	X					X		
Haiti	Parc National Naturel Macaya	Aves	*Calyptophilus tertius*	Western Chat-tanager	VU		X						
Haiti	Parc National Naturel Macaya	Magnoliopsida	*Calyptranthes ekmanii*	n/a	VU		X						
Haiti	Parc National Naturel Macaya	Magnoliopsida	*Catalpa brevipes*	n/a	VU		X						
Haiti	Parc National Naturel Macaya	Amphibia	*Eleutherodactylus amadeus*	Haitian Robber Frog	CR	X							
Haiti	Parc National Naturel Macaya	Amphibia	*Eleutherodactylus audanti*	South Island Telegraph Frog	VU		X						
Haiti	Parc National Naturel Macaya	Amphibia	*Eleutherodactylus corona*	n/a	CR	X					X		
Haiti	Parc National Naturel Macaya	Amphibia	*Eleutherodactylus dolomedes*	n/a	CR	X					X		
Haiti	Parc National Naturel Macaya	Amphibia	*Eleutherodactylus glaphycompus*	n/a	EN	X							
Haiti	Parc National Naturel Macaya	Amphibia	*Eleutherodactylus heminota*	Half-stripe Bromeliad Frog	EN	X							
Haiti	Parc National Naturel Macaya	Amphibia	*Eleutherodactylus nortoni*	Spiny Giant Frog	CR			X					
Haiti	Parc National Naturel Macaya	Amphibia	*Eleutherodactylus oxyrhyncus*	Rednose Robber Frog	CR			X					

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Haiti	Parc National Naturel Macaya	Amphibia	*Eleutherodactylus parapelates*	Casillon Robber Frog	CR	X							
Haiti	Parc National Naturel Macaya	Amphibia	*Eleutherodactylus paulsoni*	Paulson's Robber Frog	CR			X					
Haiti	Parc National Naturel Macaya	Amphibia	*Eleutherodactylus pictissimus*	Hispaniolan Yellow-mottled Frog	VU		X						
Haiti	Parc National Naturel Macaya	Amphibia	*Eleutherodactylus thorectes*	n/a	CR	X							
Haiti	Parc National Naturel Macaya	Amphibia	*Eleutherodactylus ventrilineatus*	n/a	CR	X							
Haiti	Parc National Naturel Macaya	Amphibia	*Eleutherodactylus wetmorei*	Tiburon Whistling Frog	VU		X						
Haiti	Parc National Naturel Macaya	Aves	*Loxia megaplaga*	Hispaniolan Crossbill	EN	X							
Haiti	Parc National Naturel Macaya	Magnoliopsida	*Nectandra pulchra*	n/a	CR	X							
Haiti	Parc National Naturel Macaya	Amphibia	*Osteopilus pulchrilineatus*	Hispaniolan Yellow Treefrog	VU		X						
Haiti	Parc National Naturel Macaya	Mammalia	*Plagiodontia aedium*	Hispaniolan Hutia	EN			X					
Haiti	Parc National Naturel Macaya	Magnoliopsida	*Pouteria hotteana*	n/a	EN	X							
Haiti	Parc National Naturel Macaya	Aves	*Pterodroma hasitata*	Black-capped Petrel	EN	X							
Haiti	Parc National Naturel Macaya	Mammalia	*Solenodon paradoxus*	Hispaniolan Solenodon	EN	X							
Haiti	Parc National Naturel Macaya	Aves	*Tachycineta euchrysea*	Golden Swallow	VU		X						
Haiti	Parc National Naturel Macaya	Aves	*Xenoligea montana*	White-winged Warbler	VU		X						
Haiti	Môle Saint Nicolas	Magnoliopsida	*Albizia berteriana*	n/a	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Haiti	Môle Saint Nicolas	Magnoliopsida	*Catalpa brevipes*	n/a	VU		X						
Haiti	Môle Saint Nicolas	Liliopsida	*Copernicia ekmanii*	n/a	EN	X							
Haiti	Môle Saint Nicolas	Reptilia	*Cyclura cornuta*	Rhinoceros Iguana	VU				X				
Haiti	Morne Bailly	Reptilia	*Celestus warreni*	Giant Hispaniolan Galliwasp	VU		X						
Haiti	Morne Bailly	Aves	*Corvus leucognaphalus*	White-necked Crow	VU		X						
Haiti	Morne Bailly	Aves	*Psittacara chloropterus*	Hispaniolan Parakeet	VU		X						
Haiti	Nan L'État	Amphibia	*Osteopilus pulchrilineatus*	Hispaniolan Yellow Treefrog	VU		X						
Haiti	Neiba d'Haïti	Amphibia	*Eleutherodactylus audanti*	South Island Telegraph Frog	VU		X						
Haiti	Neiba d'Haïti	Amphibia	*Eleutherodactylus parabates*	Independencia Robber Frog	CR	X							
Haiti	Neiba d'Haïti	Aves	*Loxia megaplaga*	Hispaniolan Crossbill	EN	X							
Haiti	Neiba d'Haïti	Amphibia	*Osteopilus pulchrilineatus*	Hispaniolan Yellow Treefrog	VU		X						
Haiti	Neiba d'Haïti	Aves	*Turdus swalesi*	La Selle Thrush	VU	X							
Haiti	Neiba d'Haïti	Aves	*Xenoligea montana*	White-winged Warbler	VU		X						
Haiti	Parc Marin la Gonâve - Nord	Reptilia	*Cyclura cornuta*	Rhinoceros Iguana	VU				X				
Haiti	Parc Marin la Gonâve - Nord	Mammalia	*Lasiurus minor*	Minor Red Bat	VU				X				
Haiti	Parc Marin la Gonâve - Nord	Magnoliopsida	*Manilkara valenzuelana*	n/a	VU		X						
Haiti	Parc Marin la Gonâve - Sud	Reptilia	*Cyclura cornuta*	Rhinoceros Iguana	VU				X				
Haiti	Pic Tête Boeuf	Liliopsida	*Attalea crassispatha*	n/a	CR	X							
Haiti	Pic Tête Boeuf	Aves	*Corvus leucognaphalus*	White-necked Crow	VU		X						
Haiti	Plaissance	Reptilia	*Celestus warreni*	Giant Hispaniolan Galliwasp	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Haiti	Plaissance	Aves	*Corvus leucognaphalus*	White-necked Crow	VU		X						
Haiti	Plaissance	Aves	*Psittacara chloropterus*	Hispaniolan Parakeet	VU		X						
Haiti	Aire Protégée de Ressources Naturelles Gérées de Port-Salut/Aquin	Reptilia	*Crocodylus acutus*	American Crocodile	VU				X				
Haiti	Aire Protégée de Ressources Naturelles Gérées de Port-Salut/Aquin	Reptilia	*Trachemys decorata*	Hispaniolan Slider	VU		X						
Haiti	Port-de-Paix	Magnoliopsida	*Consolea falcata*	n/a	CR	X				X	X		
Haiti	Port-de-Paix	Liliopsida	*Copernicia ekmanii*	n/a	EN	X							
Haiti	Port-de-Paix	Reptilia	*Cyclura cornuta*	Rhinoceros Iguana	VU				X				
Haiti	Port-de-Paix	Magnoliopsida	*Ekmanianthe longiflora*	n/a	EN	X							
Haiti	Port-de-Paix	Amphibia	*Eleutherodactylus rhodesi*	n/a	CR	X					X		
Haiti	Port-de-Paix	Pinopsida	*Juniperus barbadensis*	West Indies Juniper	VU		X						
Haiti	Saint Michel de l'Attalaye – Morne Basile	Magnoliopsida	*Albizia leonardii*	n/a	VU		X						
Haiti	Saint Michel de l'Attalaye – Morne Basile	Pinopsida	*Juniperus barbadensis*	West Indies Juniper	VU		X						
Haiti	Saint Michel de l'Attalaye – Morne Basile	Amphibia	*Osteopilus pulchrilineatus*	Hispaniolan Yellow Treefrog	VU		X						
Jamaica	Black River Great Morass	Reptilia	*Crocodylus acutus*	American Crocodile	VU				X				
Jamaica	Black River Great Morass	Aves	*Dendrocygna arborea*	West Indian Whistling-duck	VU		X						
Jamaica	Black River Great Morass	Amphibia	*Eleutherodactylus luteolus*	n/a	EN	X							
Jamaica	Black River Great Morass	Magnoliopsida	*Eugenia brownei*	n/a	VU		X						
Jamaica	Black River Great Morass	Amphibia	*Osteopilus crucialis*	Jamaican Snoring Frog	EN	X							

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Jamaica	Black River Great Morass	Magnoliopsida	*Samyda glabrata*	n/a	VU		X						
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Aves	*Amazona agilis*	Black-billed Amazon	VU		X						
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Aves	*Amazona collaria*	Yellow-billed Amazon	VU		X						
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Annona praetermissa*	Wild Sour Sop	VU		X						
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Ardisia brittonii*	n/a	EN	X							
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Liliopsida	*Bactris jamaicana*	Prickly Pole	VU				X				
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Reptilia	*Chilabothrus subflavus*	Jamaican Boa	VU				X				
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Clusia portlandiana*	n/a	VU		X						
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Dendropanax blakeanus*	n/a	VU		X						
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Amphibia	*Eleutherodactylus andrewsi*	Jamaican Rumpspot Frog	EN	X					X		

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Amphibia	*Eleutherodactylus jamaicensis*	n/a	EN	X					X		
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Amphibia	*Eleutherodactylus pentasyringos*	n/a	VU		X				X		
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Eugenia rendlei*	n/a	CR	X				X			
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Mammalia	*Geocapromys brownii*	Jamaican Hutia	VU		X				X		
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Hernandia catalpifolia*	n/a	VU		X						
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Ilex jamaicana*	n/a	EN	X							
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Maytenus harrisii*	n/a	CR	X				X			
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Miconia nubicola*	n/a	EN	X							
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Myrcia calcicola*	n/a	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Aves	*Nesopsar nigerrimus*	Jamaican Blackbird	EN	X					X		
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Amphibia	*Osteopilus wilderi*	Green Bromeliad Frog	EN	X							
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Aves	*Patagioenas caribaea*	Ring-tailed Pigeon	VU		X				X		
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Peperomia simplex*	n/a	VU		X						
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Phyllanthus eximius*	n/a	VU		X						
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Pinopsida	*Podocarpus urbanii*	Blue Mountain Yacca	CR	X				X	X		
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Psychotria bryonicola*	n/a	CR	X				X			
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Psychotria clusioides*	n/a	EN	X							
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Psychotria foetens*	n/a	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Rondeletia brachyphylla*	n/a	EN	X							
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Rondeletia hirsuta*	n/a	VU		X						
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Rondeletia portlandensis*	n/a	VU		X						
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Sebastiania alpina*	n/a	VU		X						
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Sideroxylon bullatum*	n/a	VU		X						
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Ternstroemia howardiana*	n/a	VU		X						
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Verbesina rupestris*	n/a	VU		X						
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Wallenia fawcettii*	n/a	VU		X						
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Wallenia sylvestris*	n/a	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Weinmannia portlandiana*	n/a	VU		X						
Jamaica	Blue and John Crow Mountains Protected National Heritage and surroundings	Magnoliopsida	*Zanthoxylum harrisii*	n/a	VU		X						
Jamaica	Bluefields	Aves	*Amazona collaria*	Yellow-billed Amazon	VU		X						
Jamaica	Bluefields	Reptilia	*Chilabothrus subflavus*	Jamaican Boa	VU				X				
Jamaica	Bluefields	Magnoliopsida	*Eugenia abbreviata*	n/a	EN	X							
Jamaica	Bull Bay	Magnoliopsida	*Brunfelsia membranacea*	n/a	VU		X						
Jamaica	Bull Bay	Magnoliopsida	*Bursera hollickii*	n/a	EN	X							
Jamaica	Bull Bay	Magnoliopsida	*Consolea spinosissima*	n/a	EN	X							
Jamaica	Bull Bay	Mammalia	*Lasiurus degelidus*	Jamaican Red Bat	VU		X						
Jamaica	Bull Bay	Magnoliopsida	*Phialanthus jamaicensis*	n/a	EN	X							
Jamaica	Bull Bay	Magnoliopsida	*Portlandia albiflora*	n/a	CR	X							
Jamaica	Bull Bay	Magnoliopsida	*Tetrasiphon jamaicensis*	n/a	EN	X							
Jamaica	Catadupa	Aves	*Amazona agilis*	Black-billed Amazon	VU		X						
Jamaica	Catadupa	Aves	*Amazona collaria*	Yellow-billed Amazon	VU		X						
Jamaica	Catadupa	Liliopsida	*Bactris jamaicana*	Prickly Pole	VU				X				
Jamaica	Catadupa	Magnoliopsida	*Guarea jamaicensis*	n/a	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Jamaica	Catadupa	Magnoliopsida	*Guettarda longiflora*	n/a	CR	X							
Jamaica	Catadupa	Magnoliopsida	*Jatropha divaricata*	Wild Oil Nut	VU		X						
Jamaica	Catadupa	Magnoliopsida	*Malpighia obtusifolia*	n/a	VU		X						
Jamaica	Catadupa	Magnoliopsida	*Ouratea elegans*	n/a	CR	X							
Jamaica	Catadupa	Aves	*Patagioenas caribaea*	Ring-tailed Pigeon	VU		X						
Jamaica	Catadupa	Magnoliopsida	*Phyllanthus cauliflorus*	n/a	VU		X						
Jamaica	Catadupa	Magnoliopsida	*Pimenta obscura*	Wild Pimento	VU		X						
Jamaica	Catadupa	Magnoliopsida	*Ternstroemia glomerata*	n/a	CR	X							
Jamaica	Caymanas	Mammalia	*Geocapromys brownii*	Jamaican Hutia	VU		X						
Jamaica	Cockpit Country	Magnoliopsida	*Alvaradoa jamaicensis*	n/a	VU		X						
Jamaica	Cockpit Country	Aves	*Amazona agilis*	Black-billed Amazon	VU		X				X		
Jamaica	Cockpit Country	Aves	*Amazona collaria*	Yellow-billed Amazon	VU		X				X		
Jamaica	Cockpit Country	Magnoliopsida	*Bernardia trelawniensis*	n/a	EN	X							
Jamaica	Cockpit Country	Magnoliopsida	*Brunfelsia splendida*	n/a	VU		X						
Jamaica	Cockpit Country	Magnoliopsida	*Bursera aromatica*	n/a	VU		X						
Jamaica	Cockpit Country	Magnoliopsida	*Buxus arborea*	n/a	VU		X						
Jamaica	Cockpit Country	Magnoliopsida	*Calliandra comosa*	n/a	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Jamaica	Cockpit Country	Magnoliopsida	*Calyptranthes nodosa*	n/a	VU		X						
Jamaica	Cockpit Country	Magnoliopsida	*Cassipourea brittoniana*	n/a	EN	X							
Jamaica	Cockpit Country	Magnoliopsida	*Cassipourea subcordata*	n/a	CR	X				X			
Jamaica	Cockpit Country	Reptilia	*Celestus fowleri*	Bromeliad Galliwasp	VU		X				X		
Jamaica	Cockpit Country	Reptilia	*Chilabothrus subflavus*	Jamaican Boa	VU				X				
Jamaica	Cockpit Country	Magnoliopsida	*Coccoloba troyana*	n/a	VU		X						
Jamaica	Cockpit Country	Magnoliopsida	*Colubrina obscura*	n/a	VU		X						
Jamaica	Cockpit Country	Magnoliopsida	*Comocladia cordata*	n/a	VU		X						
Jamaica	Cockpit Country	Magnoliopsida	*Cordia harrisii*	n/a	VU		X						
Jamaica	Cockpit Country	Amphibia	*Eleutherodactylus griphus*	n/a	CR	X					X		
Jamaica	Cockpit Country	Amphibia	*Eleutherodactylus junori*	n/a	CR	X							
Jamaica	Cockpit Country	Amphibia	*Eleutherodactylus sisyphodemus*	n/a	CR	X				X	X		
Jamaica	Cockpit Country	Magnoliopsida	*Erithalis quadrangularis*	n/a	VU		X						
Jamaica	Cockpit Country	Magnoliopsida	*Eugenia laurae*	n/a	EN	X							
Jamaica	Cockpit Country	Magnoliopsida	*Eugenia sachetae*	n/a	EN	X							
Jamaica	Cockpit Country	Magnoliopsida	*Eugenia schulziana*	n/a	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Jamaica	Cockpit Country	Magnoliopsida	*Exostema orbiculatum*	n/a	CR	X				X			
Jamaica	Cockpit Country	Mammalia	*Geocapromys brownii*	Jamaican Hutia	VU		X						
Jamaica	Cockpit Country	Magnoliopsida	*Guettarda longiflora*	n/a	CR	X							
Jamaica	Cockpit Country	Magnoliopsida	*Hamelia papillosa*	n/a	VU		X						
Jamaica	Cockpit Country	Magnoliopsida	*Jatropha divaricata*	Wild Oil Nut	VU		X						
Jamaica	Cockpit Country	Magnoliopsida	*Lunania polydactyla*	n/a	VU		X						
Jamaica	Cockpit Country	Magnoliopsida	*Malpighia obtusifolia*	n/a	VU		X						
Jamaica	Cockpit Country	Magnoliopsida	*Manilkara excisa*	n/a	EN	X							
Jamaica	Cockpit Country	Magnoliopsida	*Mitranthes macrophylla*	n/a	CR	X							
Jamaica	Cockpit Country	Aves	*Nesopsar nigerrimus*	Jamaican Blackbird	EN	X					X		
Jamaica	Cockpit Country	Aves	*Patagioenas caribaea*	Ring-tailed Pigeon	VU		X						
Jamaica	Cockpit Country	Magnoliopsida	*Phyllanthus axillaris*	n/a	EN	X							
Jamaica	Cockpit Country	Magnoliopsida	*Pimenta obscura*	Wild Pimento	VU		X						
Jamaica	Cockpit Country	Magnoliopsida	*Pimenta richardii*	n/a	EN	X							
Jamaica	Cockpit Country	Pinopsida	*Podocarpus purdieanus*	Yacca	EN	X							
Jamaica	Cockpit Country	Magnoliopsida	*Pseudorhipsalis alata*	n/a	EN	X							
Jamaica	Cockpit Country	Magnoliopsida	*Psychotria plicata*	n/a	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Jamaica	Cockpit Country	Magnoliopsida	*Psychotria siphonophora*	n/a	EN	X							
Jamaica	Cockpit Country	Magnoliopsida	*Rochefortia acrantha*	n/a	VU		X						
Jamaica	Cockpit Country	Magnoliopsida	*Rondeletia amplexicaulis*	n/a	EN	X							
Jamaica	Cockpit Country	Magnoliopsida	*Schoepfia harrisii*	n/a	VU		X						
Jamaica	Cockpit Country	Magnoliopsida	*Scolosanthus howardii*	n/a	EN	X							
Jamaica	Cockpit Country	Magnoliopsida	*Sophora saxicola*	n/a	EN	X							
Jamaica	Cockpit Country	Magnoliopsida	*Spathelia coccinea*	n/a	CR	X				X			
Jamaica	Cockpit Country	Reptilia	*Sphaerodactylus semasiops*	Cockpit Eyespot Sphaero	EN	X					X		
Jamaica	Cockpit Country	Magnoliopsida	*Strempeliopsis arborea*	n/a	VU		X						
Jamaica	Cockpit Country	Reptilia	*Trachemys terrapen*	Cat Island Freshwater Turtle	VU		X						
Jamaica	Cockpit Country	Magnoliopsida	*Viburnum arboreum*	n/a	VU		X						
Jamaica	Cockpit Country	Magnoliopsida	*Xylosma proctorii*	n/a	VU		X						
Jamaica	Dolphin Head	Magnoliopsida	*Calyptranthes acutissima*	n/a	CR	X				X			
Jamaica	Dolphin Head	Magnoliopsida	*Calyptranthes discolor*	n/a	EN	X							
Jamaica	Dolphin Head	Magnoliopsida	*Cassipourea subsessilis*	n/a	CR	X				X			

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Jamaica	Dolphin Head	Magnoliopsida	*Comocladia cordata*	n/a	VU		X						
Jamaica	Dolphin Head	Magnoliopsida	*Comocladia parvifoliola*	n/a	CR	X				X			
Jamaica	Dolphin Head	Magnoliopsida	*Dendropanax cordifolius*	n/a	CR								
Jamaica	Dolphin Head	Amphibia	*Eleutherodactylus fuscus*	n/a	CR	X					X		
Jamaica	Dolphin Head	Amphibia	*Eleutherodactylus grabhami*	n/a	EN	X					X		
Jamaica	Dolphin Head	Amphibia	*Eleutherodactylus jamaicensis*	n/a	EN	X							
Jamaica	Dolphin Head	Amphibia	*Eleutherodactylus luteolus*	n/a	EN	X							
Jamaica	Dolphin Head	Magnoliopsida	*Eugenia polypora*	n/a	CR	X				X			
Jamaica	Dolphin Head	Magnoliopsida	*Jatropha divaricata*	Wild Oil Nut	VU		X						
Jamaica	Dolphin Head	Magnoliopsida	*Lasiocroton fawcettii*	n/a	VU		X						
Jamaica	Dolphin Head	Magnoliopsida	*Ormosia jamaicensis*	n/a	EN	X							
Jamaica	Dolphin Head	Amphibia	*Osteopilus wilderi*	Green Bromeliad Frog	EN	X							
Jamaica	Dolphin Head	Aves	*Patagioenas caribaea*	Ring-tailed Pigeon	VU		X						
Jamaica	Dolphin Head	Magnoliopsida	*Psychotria hanoverensis*	n/a	CR	X				X			
Jamaica	Dolphin Head	Magnoliopsida	*Rondeletia cincta*	n/a	CR	X				X			
Jamaica	Dolphin Head	Magnoliopsida	*Sebastiania fasciculata*	n/a	EN	X							

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Jamaica	Dolphin Head	Magnoliopsida	*Tabernaemontana ochroleuca*	n/a	VU		X						
Jamaica	Dolphin Head	Magnoliopsida	*Tabernaemontana ovalifolia*	n/a	EN	X							
Jamaica	Don Figuerero Mountains	Magnoliopsida	*Coccoloba proctorii*	n/a	EN	X							
Jamaica	Don Figuerero Mountains	Magnoliopsida	*Colubrina obscura*	n/a	VU		X						
Jamaica	Don Figuerero Mountains	Magnoliopsida	*Erythroxylum incrassatum*	n/a	VU		X						
Jamaica	Font Hill	Reptilia	*Crocodylus acutus*	American Crocodile	VU				X				
Jamaica	Font Hill	Aves	*Dendrocygna arborea*	West Indian Whistling-duck	VU		X						
Jamaica	Font Hill	Mammalia	*Trichechus manatus*	American Manatee	VU		X						
Jamaica	Great River	Mammalia	*Geocapromys brownii*	Jamaican Hutia	VU		X						
Jamaica	Great River	Amphibia	*Osteopilus crucialis*	Jamaican Snoring Frog	EN	X							
Jamaica	Kellits Camperdown Area	Mammalia	*Geocapromys brownii*	Jamaican Hutia	VU		X						
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Acidocroton verrucosus*	n/a	VU		X						
Jamaica	Litchfield Mountain - Matheson's Run	Aves	*Amazona agilis*	Black-billed Amazon	VU		X						
Jamaica	Litchfield Mountain - Matheson's Run	Aves	*Amazona collaria*	Yellow-billed Amazon	VU		X						
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Calyptranthes capitata*	n/a	VU		X						
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Clusia clarendonensis*	n/a	VU		X						
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Coccoloba troyana*	n/a	VU		X						
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Colubrina obscura*	n/a	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Dendropanax grandiflorus*	n/a	CR	X							
Jamaica	Litchfield Mountain - Matheson's Run	Amphibia	*Eleutherodactylus junori*	n/a	CR	X							
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Erithalis quadrangularis*	n/a	VU		X						
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Erythroxylum jamaicense*	n/a	VU		X						
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Eugenia aboukirensis*	n/a	CR	X				X			
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Eugenia eperforata*	n/a	EN	X							
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Eugenia heterochroa*	n/a	VU		X						
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Eugenia lamprophylla*	n/a	VU		X						
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Eugenia schulziana*	n/a	VU		X						
Jamaica	Litchfield Mountain - Matheson's Run	Mammalia	*Geocapromys brownii*	Jamaican Hutia	VU		X						
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Guarea jamaicensis*	n/a	VU		X						
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Lasiocroton harrisii*	n/a	VU		X						
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Malpighia harrisii*	n/a	VU		X						
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Mitranthes nivea*	n/a	EN	X							
Jamaica	Litchfield Mountain - Matheson's Run	Aves	*Nesopsar nigerrimus*	Jamaican Blackbird	EN	X							
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Ocotea staminoides*	n/a	EN	X							

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Palicourea wilesii*	n/a	VU		X						
Jamaica	Litchfield Mountain - Matheson's Run	Aves	*Patagioenas caribaea*	Ring-tailed Pigeon	VU		X						
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Portlandia harrisii*	n/a	VU		X						
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Psychotria clarendonensis*	n/a	EN	X							
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Rondeletia adamsii*	n/a	VU		X						
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Rondeletia clarendonensis*	n/a	EN	X							
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Samyda glabrata*	n/a	VU		X						
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Schefflera troyana*	n/a	VU		X						
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Schoepfia harrisii*	n/a	VU		X						
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Sebastiania spicata*	n/a	EN	X							
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Ternstroemia bullata*	n/a	CR	X							
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Ternstroemia calycina*	n/a	EN	X							
Jamaica	Litchfield Mountain - Matheson's Run	Magnoliopsida	*Varronia clarendonensis*	n/a	VU		X				X		
Jamaica	Main Ridge	Mammalia	*Geocapromys brownii*	Jamaican Hutia	VU		X						
Jamaica	May Pen	Mammalia	*Lasiurus degelidus*	Jamaican Red Bat	VU		X						
Jamaica	Milk River	Reptilia	*Trachemys terrapen*	Cat Island Freshwater Turtle	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Jamaica	Mount Diablo	Magnoliopsida	*Alvaradoa jamaicensis*	n/a	VU		X						
Jamaica	Mount Diablo	Aves	*Amazona agilis*	Black-billed Amazon	VU		X						
Jamaica	Mount Diablo	Aves	*Amazona collaria*	Yellow-billed Amazon	VU		X						
Jamaica	Mount Diablo	Magnoliopsida	*Brunfelsia splendida*	n/a	VU		X						
Jamaica	Mount Diablo	Magnoliopsida	*Erythroxylum incrassatum*	n/a	VU		X						
Jamaica	Mount Diablo	Magnoliopsida	*Eugenia acutisepala*	n/a	EN	X							
Jamaica	Mount Diablo	Magnoliopsida	*Exostema triflorum*	n/a	VU		X						
Jamaica	Mount Diablo	Mammalia	*Geocapromys brownii*	Jamaican Hutia	VU		X						
Jamaica	Mount Diablo	Magnoliopsida	*Gymnanthes glandulosa*	n/a	VU		X						
Jamaica	Mount Diablo	Magnoliopsida	*Ilex subtriflora*	n/a	CR	X							
Jamaica	Mount Diablo	Magnoliopsida	*Malpighia cauliflora*	n/a	EN	X							
Jamaica	Mount Diablo	Magnoliopsida	*Malpighia harrisii*	n/a	VU		X						
Jamaica	Mount Diablo	Aves	*Nesopsar nigerrimus*	Jamaican Blackbird	EN	X							
Jamaica	Mount Diablo	Magnoliopsida	*Palicourea wilesii*	n/a	VU		X						
Jamaica	Mount Diablo	Pinopsida	*Podocarpus purdieanus*	Yacca	EN	X							
Jamaica	Mount Diablo	Reptilia	*Trachemys terrapen*	Cat Island Freshwater Turtle	VU		X						
Jamaica	Negril and surroundings	Reptilia	*Chilabothrus subflavus*	Jamaican Boa	VU				X				
Jamaica	Negril and surroundings	Reptilia	*Crocodylus acutus*	American Crocodile	VU				X				

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Jamaica	Negril and surroundings	Aves	*Dendrocygna arborea*	West Indian Whistling-duck	VU		X						X
Jamaica	Negril and surroundings	Magnoliopsida	*Erithalis quadrangularis*	n/a	VU		X						
Jamaica	Negril and surroundings	Reptilia	*Trachemys terrapen*	Cat Island Freshwater Turtle	VU		X						
Jamaica	Negril and surroundings	Cycadopsida	*Zamia erosa*	n/a	VU		X						
Jamaica	Negril and surroundings	Magnoliopsida	*Zanthoxylum negrilense*	n/a	EN	X							
Jamaica	North Coast Forest	Aves	*Amazona collaria*	Yellow-billed Amazon	VU		X						
Jamaica	North Coast Forest	Reptilia	*Chilabothrus subflavus*	Jamaican Boa	VU				X				
Jamaica	North Coast Forest	Mammalia	*Geocapromys brownii*	Jamaican Hutia	VU		X						
Jamaica	North Coast Forest	Mammalia	*Lasiurus degelidus*	Jamaican Red Bat	VU		X						
Jamaica	North Coast Forest	Amphibia	*Osteopilus wilderi*	Green Bromeliad Frog	EN	X							
Jamaica	North Coast Forest	Aves	*Patagioenas caribaea*	Ring-tailed Pigeon	VU		X						
Jamaica	North Coast Forest	Magnoliopsida	*Peperomia simplex*	n/a	VU		X						
Jamaica	North Coast Forest	Mammalia	*Phyllonycteris aphylla*	Jamaican Flower Bat	CR	X							
Jamaica	North Coast Forest	Reptilia	*Trachemys terrapen*	Cat Island Freshwater Turtle	VU		X						
Jamaica	North Coast Forest	Magnoliopsida	*Varronia clarendonensis*	n/a	VU		X						
Jamaica	Peckham Woods	Magnoliopsida	*Acidocroton verrucosus*	n/a	VU		X						
Jamaica	Peckham Woods	Aves	*Amazona collaria*	Yellow-billed Amazon	VU		X						
Jamaica	Peckham Woods	Magnoliopsida	*Ardisia byrsonimae*	n/a	CR	X				X			
Jamaica	Peckham Woods	Magnoliopsida	*Clusia clarendonensis*	n/a	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Jamaica	Peckham Woods	Magnoliopsida	*Erythroxylum jamaicense*	n/a	VU		X						
Jamaica	Peckham Woods	Magnoliopsida	*Eugenia heterochroa*	n/a	VU		X						
Jamaica	Peckham Woods	Magnoliopsida	*Eugenia lamprophylla*	n/a	VU		X						
Jamaica	Peckham Woods	Magnoliopsida	*Jatropha divaricata*	Wild Oil Nut	VU		X						
Jamaica	Peckham Woods	Magnoliopsida	*Malpighia harrisii*	n/a	VU		X						
Jamaica	Peckham Woods	Magnoliopsida	*Palicourea wilesii*	n/a	VU		X						
Jamaica	Peckham Woods	Magnoliopsida	*Portlandia harrisii*	n/a	VU		X						
Jamaica	Peckham Woods	Magnoliopsida	*Pseudorhipsalis alata*	n/a	EN	X							
Jamaica	Peckham Woods	Magnoliopsida	*Psychotria clarendonensis*	n/a	EN	X							
Jamaica	Peckham Woods	Magnoliopsida	*Rondeletia adamsii*	n/a	VU		X						
Jamaica	Peckham Woods	Magnoliopsida	*Rondeletia clarendonensis*	n/a	EN	X							
Jamaica	Peckham Woods	Magnoliopsida	*Schefflera troyana*	n/a	VU		X						
Jamaica	Peckham Woods	Magnoliopsida	*Schoepfia harrisii*	n/a	VU		X						
Jamaica	Peckham Woods	Magnoliopsida	*Sebastiania spicata*	n/a	EN	X							
Jamaica	Peckham Woods	Magnoliopsida	*Ternstroemia calycina*	n/a	EN	X							

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Jamaica	Peckham Woods	Magnoliopsida	*Varronia clarendonensis*	n/a	VU		X						
Jamaica	Point Hill	Mammalia	*Geocapromys brownii*	Jamaican Hutia	VU		X						
Jamaica	Point Hill	Mammalia	*Natalus jamaicensis*	Jamaican Greater Funnel-eared Bat	CR	X					X		
Jamaica	Portland Bight Protected Area	Magnoliopsida	*Auerodendron jamaicense*	n/a	VU		X						
Jamaica	Portland Bight Protected Area	Magnoliopsida	*Bursera hollickii*	n/a	EN	X							
Jamaica	Portland Bight Protected Area	Reptilia	*Chilabothrus subflavus*	Jamaican Boa	VU				X				
Jamaica	Portland Bight Protected Area	Magnoliopsida	*Consolea spinosissima*	n/a	EN	X							
Jamaica	Portland Bight Protected Area	Reptilia	*Cyclura collei*	Jamaican Iguana	CR	X				X	X		
Jamaica	Portland Bight Protected Area	Amphibia	*Eleutherodactylus cavernicola*	n/a	CR	X					X		
Jamaica	Portland Bight Protected Area	Magnoliopsida	*Eugenia eperforata*	n/a	EN	X							
Jamaica	Portland Bight Protected Area	Mammalia	*Geocapromys brownii*	Jamaican Hutia	VU		X						
Jamaica	Portland Bight Protected Area	Magnoliopsida	*Lunania polydactyla*	n/a	VU		X						
Jamaica	Portland Bight Protected Area	Magnoliopsida	*Phialanthus revolutus*	n/a	EN	X							
Jamaica	Portland Bight Protected Area	Reptilia	*Spondylurus fulgida*	Jamaican Skink	EN	X					X		
Jamaica	Portland Bight Protected Area	Reptilia	*Trachemys terrapen*	Cat Island Freshwater Turtle	VU		X						
Jamaica	Portland Bight Protected Area	Mammalia	*Trichechus manatus*	American Manatee	VU		X						
Jamaica	Portland Bight Protected Area	Magnoliopsida	*Zanthoxylum harrisii*	n/a	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Jamaica	Red Ground	Mammalia	*Geocapromys brownii*	Jamaican Hutia	VU		X						
Jamaica	Rio Cobre	Mammalia	*Geocapromys brownii*	Jamaican Hutia	VU		X						
Jamaica	Rio Cobre	Reptilia	*Trachemys terrapen*	Cat Island Freshwater Turtle	VU		X						
Jamaica	Rio Grande	Reptilia	*Trachemys terrapen*	Cat Island Freshwater Turtle	VU		X						
Jamaica	Rio Magno	Mammalia	*Geocapromys brownii*	Jamaican Hutia	VU		X						
Jamaica	Rio Pedro	Mammalia	*Geocapromys brownii*	Jamaican Hutia	VU		X						
Jamaica	Santa Cruz Mountains	Mammalia	*Geocapromys brownii*	Jamaican Hutia	VU		X						
Jamaica	Santa Cruz Mountains	Magnoliopsida	*Rhamnidium dictyophyllum*	n/a	EN	X							
Jamaica	Stephney Johns Vale - Bull Head	Magnoliopsida	*Colubrina obscura*	n/a	VU		X						
Jamaica	Stephney Johns Vale - Bull Head	Magnoliopsida	*Erythroxylum jamaicense*	n/a	VU		X						
Jamaica	Stephney Johns Vale - Bull Head	Mammalia	*Geocapromys brownii*	Jamaican Hutia	VU		X						
Jamaica	Stephney Johns Vale - Bull Head	Magnoliopsida	*Malpighia harrisii*	n/a	VU		X						
Jamaica	Stephney Johns Vale - Bull Head	Magnoliopsida	*Mitranthes nivea*	n/a	EN	X							
Jamaica	Stephney Johns Vale - Bull Head	Amphibia	*Osteopilus marianae*	Yellow Bromeliad Frog	EN	X					X		
Jamaica	Stephney Johns Vale - Bull Head	Amphibia	*Osteopilus wilderi*	Green Bromeliad Frog	EN	X							
Jamaica	Swift River	Reptilia	*Trachemys terrapen*	Cat Island Freshwater Turtle	VU		X						
Jamaica	Wag Water River	Reptilia	*Trachemys terrapen*	Cat Island Freshwater Turtle	VU		X						
Jamaica	Yallahs	Reptilia	*Chilabothrus subflavus*	Jamaican Boa	VU				X				
Jamaica	Yallahs	Aves	*Patagioenas caribaea*	Ring-tailed Pigeon	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Puerto Rico	Acantilados del Noroeste	Magnoliopsida	*Auerodendron pauciflorum*	n/a	CR	X							
Puerto Rico	Acantilados del Noroeste	Magnoliopsida	*Erythrina eggersii*	Cock's-spur	EN	X							
Puerto Rico	Acantilados del Noroeste	Magnoliopsida	*Goetzea elegans*	Beautiful Goetzea	EN	X							
Puerto Rico	Acantilados del Noroeste	Magnoliopsida	*Manilkara pleeana*	n/a	VU		X						
Puerto Rico	Acantilados del Noroeste	Magnoliopsida	*Manilkara valenzuelana*	n/a	VU		X						
Puerto Rico	Acantilados del Noroeste	Magnoliopsida	*Picrasma excelsa*	n/a	VU				X				
Puerto Rico	Acantilados del Noroeste	Magnoliopsida	*Schoepfia arenaria*	n/a	EN	X							
Puerto Rico	Acantilados del Noroeste	Magnoliopsida	*Stenostomum portoricense*	n/a	VU		X						
Puerto Rico	Acantilados del Noroeste	Magnoliopsida	*Zanthoxylum flavum*	West Indian Satinwood	VU				X				
Puerto Rico	Bahía de Jobos	Aves	*Agelaius xanthomus*	Yellow-shouldered Blackbird	EN	X					X		
Puerto Rico	Baños de Coamo	Magnoliopsida	*Chrysophyllum pauciflorum*	n/a	VU		X						
Puerto Rico	Baños de Coamo	Magnoliopsida	*Erythrina eggersii*	Cock's-spur	EN	X							
Puerto Rico	Baños de Coamo	Magnoliopsida	*Leptocereus quadricostatus*	Sebucan	EN	X							
Puerto Rico	Baños de Coamo	Magnoliopsida	*Manilkara pleeana*	n/a	VU		X						
Puerto Rico	Baños de Coamo	Amphibia	*Peltophryne lemur*	Puerto Rican Crested Toad	CR	X							
Puerto Rico	Baños de Coamo	Magnoliopsida	*Picrasma excelsa*	n/a	VU				X				

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Puerto Rico	Baños de Coamo	Magnoliopsida	*Solanum drymophilum*	n/a	CR	X							
Puerto Rico	Baños de Coamo	Magnoliopsida	*Stahlia monosperma*	Cóbana Polisandro	EN	X							
Puerto Rico	Bosque de Vega	Magnoliopsida	*Erythrina eggersii*	Cock's-spur	EN	X							
Puerto Rico	Caño Tiburones	Magnoliopsida	*Erythrina eggersii*	Cock's-spur	EN	X							
Puerto Rico	Caño Tiburones	Magnoliopsida	*Manilkara pleeana*	n/a	VU		X						
Puerto Rico	Carite	Magnoliopsida	*Coccoloba rugosa*	Ortegon	EN	X							
Puerto Rico	Carite	Amphibia	*Eleutherodactylus gryllus*	Cricket Robber Frog	EN	X							
Puerto Rico	Carite	Amphibia	*Eleutherodactylus hedricki*	Hedrick's Robber Frog	EN	X							
Puerto Rico	Carite	Amphibia	*Eleutherodactylus locustus*	Interior Robber Frog	CR			X			X		
Puerto Rico	Carite	Amphibia	*Eleutherodactylus portoricensis*	Puerto Rican Robber Frog	EN			X					
Puerto Rico	Carite	Amphibia	*Eleutherodactylus richmondi*	Richmond's Robber Frog	CR	X							
Puerto Rico	Carite	Amphibia	*Eleutherodactylus wightmanae*	Wightman's Robber Frog	EN	X							
Puerto Rico	Carite	Liliopsida	*Gaussia attenuata*	n/a	VU		X						
Puerto Rico	Carite	Magnoliopsida	*Magnolia portoricensis*	Jagüilla	EN	X							
Puerto Rico	Carite	Magnoliopsida	*Nectandra krugii*	Bois Doux Avocat	EN	X							
Puerto Rico	Carite	Aves	*Setophaga angelae*	Elfin Woods Warbler	VU		X				X		

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Puerto Rico	Carite	Magnoliopsida	*Solanum drymophilum*	n/a	CR	X							
Puerto Rico	Ceiba y Naguabo	Magnoliopsida	*Chrysophyllum pauciflorum*	n/a	VU		X						
Puerto Rico	Ceiba y Naguabo	Magnoliopsida	*Coccoloba rugosa*	Ortegon	EN	X							
Puerto Rico	Ceiba y Naguabo	Reptilia	*Dermochelys coriacea*	Leatherback	VU				X				
Puerto Rico	Ceiba y Naguabo	Magnoliopsida	*Maytenus cymosa*	Caribbean Mayten	EN	X							
Puerto Rico	Ceiba y Naguabo	Magnoliopsida	*Schoepfia arenaria*	n/a	EN	X							
Puerto Rico	Ceiba y Naguabo	Magnoliopsida	*Stahlia monosperma*	Cóbana Polisandro	EN	X							
Puerto Rico	Ciénaga Las Cucharillas	Magnoliopsida	*Banara vanderbiltii*	Palo De Ramon	CR	X							
Puerto Rico	Ciénaga Las Cucharillas	Magnoliopsida	*Buxus vahlii*	Vahl's Boxwood	CR	X							
Puerto Rico	Ciénaga Las Cucharillas	Magnoliopsida	*Coccoloba rugosa*	Ortegon	EN	X							
Puerto Rico	Ciénaga Las Cucharillas	Liliopsida	*Gaussia attenuata*	n/a	VU		X						
Puerto Rico	Ciénaga Las Cucharillas	Magnoliopsida	*Tabernaemontana oppositifolia*	n/a	VU		X						
Puerto Rico	Cordillera Central	Magnoliopsida	*Callicarpa ampla*	n/a	CR	X							
Puerto Rico	Cordillera Central	Magnoliopsida	*Chrysophyllum pauciflorum*	n/a	VU		X						
Puerto Rico	Cordillera Central	Magnoliopsida	*Cornutia obovata*	Capá Jigüerilla	CR	X							
Puerto Rico	Cordillera Central	Amphibia	*Eleutherodactylus gryllus*	Cricket Robber Frog	EN	X					X		

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Puerto Rico	Cordillera Central	Amphibia	*Eleutherodactylus hedricki*	Hedrick's Robber Frog	EN	X							
Puerto Rico	Cordillera Central	Amphibia	*Eleutherodactylus portoricensis*	Puerto Rican Robber Frog	EN			X					
Puerto Rico	Cordillera Central	Amphibia	*Eleutherodactylus richmondi*	Richmond's Robber Frog	CR	X							
Puerto Rico	Cordillera Central	Amphibia	*Eleutherodactylus wightmanae*	Wightman's Robber Frog	EN	X							
Puerto Rico	Cordillera Central	Liliopsida	*Gaussia attenuata*	n/a	VU		X						
Puerto Rico	Cordillera Central	Magnoliopsida	*Ilex cookii*	Cook's Holly	CR	X							
Puerto Rico	Cordillera Central	Magnoliopsida	*Juglans jamaicensis*	West Indian Walnut	VU		X						
Puerto Rico	Cordillera Central	Magnoliopsida	*Magnolia portoricensis*	Jagüilla	EN	X							
Puerto Rico	Cordillera Central	Magnoliopsida	*Marlierea sintenisii*	n/a	VU		X						
Puerto Rico	Cordillera Central	Magnoliopsida	*Nectandra krugii*	Bois Doux Avocat	EN	X							
Puerto Rico	Cordillera Central	Magnoliopsida	*Pouteria hotteana*	n/a	EN	X							
Puerto Rico	Cordillera Central	Magnoliopsida	*Schefflera gleasonii*	n/a	VU		X						
Puerto Rico	Cordillera Central	Magnoliopsida	*Stenostomum sintenisii*	n/a	VU		X						
Puerto Rico	Corredor Ecológico del Noreste	Magnoliopsida	*Coccoloba rugosa*	Ortegon	EN	X							
Puerto Rico	Corredor Ecológico del Noreste	Reptilia	*Dermochelys coriacea*	Leatherback	VU				X				
Puerto Rico	Corredor Ecológico del Noreste	Magnoliopsida	*Goetzea elegans*	Beautiful Goetzea	EN	X							

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Puerto Rico	Corredor Ecológico del Noreste	Magnoliopsida	*Manilkara pleeana*	n/a	VU		X						
Puerto Rico	Corredor Ecológico del Noreste	Magnoliopsida	*Schoepfia arenaria*	n/a	EN	X							
Puerto Rico	Corredor Ecológico del Noreste	Magnoliopsida	*Stahlia monosperma*	Cóbana Polisandro	EN	X							
Puerto Rico	Culebra	Reptilia	*Dermochelys coriacea*	Leatherback	VU				X				
Puerto Rico	Culebra	Magnoliopsida	*Leptocereus grantianus*	n/a	CR	X				X	X		
Puerto Rico	Culebra	Magnoliopsida	*Maytenus cymosa*	Caribbean Mayten	EN	X							
Puerto Rico	Culebra	Reptilia	*Spondylurus culebrae*	Culebra Skink	CR	X				X	X		
Puerto Rico	El Yunque	Magnoliopsida	*Callicarpa ampla*	n/a	CR	X							
Puerto Rico	El Yunque	Magnoliopsida	*Calyptranthes luquillensis*	Luquillo Forest Lidflower	VU		X						
Puerto Rico	El Yunque	Magnoliopsida	*Coccoloba rugosa*	Ortegon	EN	X							
Puerto Rico	El Yunque	Amphibia	*Eleutherodactylus gryllus*	Cricket Robber Frog	EN	X							
Puerto Rico	El Yunque	Amphibia	*Eleutherodactylus hedricki*	Hedrick's Robber Frog	EN	X							
Puerto Rico	El Yunque	Amphibia	*Eleutherodactylus locustus*	Interior Robber Frog	CR			X					
Puerto Rico	El Yunque	Amphibia	*Eleutherodactylus portoricensis*	Puerto Rican Robber Frog	EN			X					
Puerto Rico	El Yunque	Amphibia	*Eleutherodactylus richmondi*	Richmond's Robber Frog	CR	X					X		
Puerto Rico	El Yunque	Amphibia	*Eleutherodactylus unicolor*	Dull Robber Frog	VU		X				X		

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Puerto Rico	El Yunque	Amphibia	*Eleutherodactylus wightmanae*	Wightman's Robber Frog	EN	X					X		
Puerto Rico	El Yunque	Magnoliopsida	*Eugenia haematocarpa*	Uvillo	EN	X							
Puerto Rico	El Yunque	Magnoliopsida	*Goetzea elegans*	Beautiful Goetzea	EN	X							
Puerto Rico	El Yunque	Magnoliopsida	*Henriettea membranifolia*	n/a	CR	X							
Puerto Rico	El Yunque	Magnoliopsida	*Ilex sintenisii*	Sintenis' Holly	EN	X							
Puerto Rico	El Yunque	Mammalia	*Lasiurus minor*	Minor Red Bat	VU				X				
Puerto Rico	El Yunque	Magnoliopsida	*Magnolia portoricensis*	Jagüilla	EN	X							
Puerto Rico	El Yunque	Magnoliopsida	*Magnolia splendens*	n/a	EN	X				X	X		
Puerto Rico	El Yunque	Magnoliopsida	*Marlierea sintenisii*	n/a	VU		X						
Puerto Rico	El Yunque	Magnoliopsida	*Pleodendron macranthum*	Chupacallos	CR	X							
Puerto Rico	El Yunque	Aves	*Setophaga angelae*	Elfin Woods Warbler	VU		X				X		
Puerto Rico	El Yunque	Magnoliopsida	*Solanum drymophilum*	n/a	CR	X							
Puerto Rico	El Yunque	Magnoliopsida	*Stahlia monosperma*	Cóbana Polisandro	EN	X							
Puerto Rico	El Yunque	Magnoliopsida	*Stenostomum sintenisii*	n/a	VU		X						
Puerto Rico	El Yunque	Magnoliopsida	*Styrax portoricensis*	Palo De Jazmin	CR	X							
Puerto Rico	El Yunque	Magnoliopsida	*Tabernaemontana oppositifolia*	n/a	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Puerto Rico	El Yunque	Magnoliopsida	*Trichilia triacantha*	n/a	CR	X							
Puerto Rico	El Yunque	Magnoliopsida	*Varronia rupicola*	n/a	CR	X							
Puerto Rico	El Yunque	Magnoliopsida	*Varronia wagnerorum*	Wagners' Cordia	CR	X				X	X		
Puerto Rico	El Yunque	Magnoliopsida	*Xylosma pachyphyllum*	Spiny Logwood	CR	X							
Puerto Rico	El Yunque	Magnoliopsida	*Zanthoxylum flavum*	West Indian Satinwood	VU				X				
Puerto Rico	Guaniquilla y Boquerón	Aves	*Agelaius xanthomus*	Yellow-shouldered Blackbird	EN	X							
Puerto Rico	Guaniquilla y Boquerón	Magnoliopsida	*Eugenia woodburyana*	n/a	CR	X							
Puerto Rico	Guaniquilla y Boquerón	Liliopsida	*Gaussia attenuata*	n/a	VU		X						
Puerto Rico	Guaniquilla y Boquerón	Magnoliopsida	*Leptocereus quadricostatus*	Sebucan	EN	X							
Puerto Rico	Humacao	Magnoliopsida	*Coccoloba rugosa*	Ortegon	EN	X							
Puerto Rico	Humacao	Reptilia	*Eretmochelys imbricata*	Hawksbill Turtle	CR			X					
Puerto Rico	Karso del Norte	Aves	*Amazona vittata*	Puerto Rican Amazon	CR	X					X		
Puerto Rico	Karso del Norte	Magnoliopsida	*Auerodendron pauciflorum*	n/a	CR	X							
Puerto Rico	Karso del Norte	Magnoliopsida	*Banara vanderbiltii*	Palo De Ramon	CR	X							
Puerto Rico	Karso del Norte	Magnoliopsida	*Buxus vahlii*	Vahl's Boxwood	CR	X							
Puerto Rico	Karso del Norte	Magnoliopsida	*Coccoloba rugosa*	Ortegon	EN	X							
Puerto Rico	Karso del Norte	Magnoliopsida	*Cornutia obovata*	Capá Jigüerilla	CR	X							

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Puerto Rico	Karso del Norte	Amphibia	*Eleutherodactylus juanariveroi*		CR	X				X			
Puerto Rico	Karso del Norte	Amphibia	*Eleutherodactylus richmondi*	Richmond's Robber Frog	CR	X							
Puerto Rico	Karso del Norte	Amphibia	*Eleutherodactylus wightmanae*	Wightman's Robber Frog	EN	X							
Puerto Rico	Karso del Norte	Magnoliopsida	*Erythrina eggersii*	Cock's-spur	EN	X							
Puerto Rico	Karso del Norte	Liliopsida	*Gaussia attenuata*	n/a	VU		X						
Puerto Rico	Karso del Norte	Magnoliopsida	*Goetzea elegans*	Beautiful Goetzea	EN	X							
Puerto Rico	Karso del Norte	Magnoliopsida	*Henriettea membranifolia*	n/a	CR	X							
Puerto Rico	Karso del Norte	Mammalia	*Lasiurus minor*	Minor Red Bat	VU				X				
Puerto Rico	Karso del Norte	Magnoliopsida	*Manilkara pleeana*	n/a	VU		X						
Puerto Rico	Karso del Norte	Magnoliopsida	*Mappia racemosa*	n/a	VU				X				
Puerto Rico	Karso del Norte	Magnoliopsida	*Maytenus ponceana*	n/a	VU		X						
Puerto Rico	Karso del Norte	Magnoliopsida	*Myrcia paganii*	n/a	CR	X							
Puerto Rico	Karso del Norte	Magnoliopsida	*Nectandra krugii*	Bois Doux Avocat	EN	X							
Puerto Rico	Karso del Norte	Amphibia	*Peltophryne lemur*	Puerto Rican Crested Toad	CR	X							
Puerto Rico	Karso del Norte	Magnoliopsida	*Pleodendron macranthum*	Chupacallos	CR	X							
Puerto Rico	Karso del Norte	Magnoliopsida	*Schoepfia arenaria*	n/a	EN	X							

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Puerto Rico	Karso del Norte	Magnoliopsida	*Solanum drymophilum*	n/a	CR	X							
Puerto Rico	Karso del Norte	Magnoliopsida	*Stenostomum portoricense*	n/a	VU		X						
Puerto Rico	Karso del Norte	Magnoliopsida	*Stenostomum sintenisii*	n/a	VU		X						
Puerto Rico	Karso del Norte	Magnoliopsida	*Tabernaemontana oppositifolia*	n/a	VU		X						
Puerto Rico	Karso del Norte	Magnoliopsida	*Varronia bellonis*	n/a	CR	X							
Puerto Rico	Karso del Norte	Cycadopsida	*Zamia erosa*	n/a	VU		X				X		
Puerto Rico	Karso del Norte	Magnoliopsida	*Zanthoxylum thomasianum*	St Thomas Prickly-ash	EN	X							
Puerto Rico	Karso del Sur	Aves	*Antrostomus noctitherus*	Puerto Rican Nightjar	EN	X					X		
Puerto Rico	Karso del Sur	Magnoliopsida	*Buxus vahlii*	Vahl's Boxwood	CR	X							
Puerto Rico	Karso del Sur	Magnoliopsida	*Eugenia woodburyana*	n/a	CR	X							
Puerto Rico	Karso del Sur	Magnoliopsida	*Leptocereus quadricostatus*	Sebucan	EN	X							
Puerto Rico	Karso del Sur	Magnoliopsida	*Maytenus ponceana*	n/a	VU		X						
Puerto Rico	Karso del Sur	Amphibia	*Peltophryne lemur*	Puerto Rican Crested Toad	CR	X							
Puerto Rico	Karso del Sur	Magnoliopsida	*Stahlia monosperma*	Cóbana Polisandro	EN	X							
Puerto Rico	Karso del Sur	Magnoliopsida	*Trichilia triacantha*	n/a	CR	X							
Puerto Rico	Karso del Sur	Magnoliopsida	*Varronia rupicola*	n/a	CR	X							
Puerto Rico	Karso del Sur	Cycadopsida	*Zamia portoricensis*	Marunguey	EN	X							

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Puerto Rico	Karso del Sur	Magnoliopsida	*Zanthoxylum flavum*	West Indian Satinwood	VU				X				
Puerto Rico	Laguna Tortuguero	Magnoliopsida	*Erythrina eggersii*	Cock's-spur	EN	X							
Puerto Rico	Laguna Tortuguero	Magnoliopsida	*Schoepfia arenaria*	n/a	EN	X							
Puerto Rico	Las Piedras Chiquitas	Magnoliopsida	*Chrysophyllum pauciflorum*	n/a	VU		X						
Puerto Rico	Las Piedras Chiquitas	Magnoliopsida	*Maytenus ponceana*	n/a	VU		X						
Puerto Rico	Las Piedras Chiquitas	Magnoliopsida	*Picrasma excelsa*	n/a	VU				X				
Puerto Rico	Las Piedras Chiquitas	Magnoliopsida	*Solanum drymophilum*	n/a	CR	X							
Puerto Rico	Las Piedras Chiquitas	Magnoliopsida	*Zanthoxylum thomasianum*	St Thomas Prickly-ash	EN	X							
Puerto Rico	Maricao y Susúa	Aves	*Antrostomus noctitherus*	Puerto Rican Nightjar	EN	X					X		
Puerto Rico	Maricao y Susúa	Magnoliopsida	*Calyptranthes portoricensis*	n/a	EN	X							
Puerto Rico	Maricao y Susúa	Magnoliopsida	*Chrysophyllum pauciflorum*	n/a	VU		X						
Puerto Rico	Maricao y Susúa	Magnoliopsida	*Coccoloba rugosa*	Ortegon	EN	X							
Puerto Rico	Maricao y Susúa	Magnoliopsida	*Cornutia obovata*	Capá Jigüerilla	CR	X							
Puerto Rico	Maricao y Susúa	Amphibia	*Eleutherodactylus gryllus*	Cricket Robber Frog	EN	X							
Puerto Rico	Maricao y Susúa	Amphibia	*Eleutherodactylus portoricensis*	Puerto Rican Robber Frog	EN			X					
Puerto Rico	Maricao y Susúa	Amphibia	*Eleutherodactylus richmondi*	Richmond's Robber Frog	CR	X							

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Puerto Rico	Maricao y Susúa	Amphibia	*Eleutherodactylus wightmanae*	Wightman's Robber Frog	EN	X							
Puerto Rico	Maricao y Susúa	Magnoliopsida	*Erythrina eggersii*	Cock's-spur	EN	X							
Puerto Rico	Maricao y Susúa	Liliopsida	*Gaussia attenuata*	n/a	VU		X						
Puerto Rico	Maricao y Susúa	Mammalia	*Lasiurus minor*	Minor Red Bat	VU				X				
Puerto Rico	Maricao y Susúa	Magnoliopsida	*Magnolia portoricensis*	Jagüilla	EN	X							
Puerto Rico	Maricao y Susúa	Magnoliopsida	*Maytenus ponceana*	n/a	VU		X						
Puerto Rico	Maricao y Susúa	Magnoliopsida	*Pouteria hotteana*	n/a	EN	X							
Puerto Rico	Maricao y Susúa	Magnoliopsida	*Schefflera gleasonii*	n/a	VU		X						
Puerto Rico	Maricao y Susúa	Magnoliopsida	*Schoepfia arenaria*	n/a	EN	X							
Puerto Rico	Maricao y Susúa	Aves	*Setophaga angelae*	Elfin Woods Warbler	VU		X				X		
Puerto Rico	Maricao y Susúa	Magnoliopsida	*Stahlia monosperma*	Cóbana Polisandro	EN	X							
Puerto Rico	Maricao y Susúa	Magnoliopsida	*Stenostomum portoricense*	n/a	VU		X						
Puerto Rico	Maricao y Susúa	Magnoliopsida	*Tabernaemontana oppositifolia*	n/a	VU		X						
Puerto Rico	Maricao y Susúa	Magnoliopsida	*Varronia bellonis*	n/a	CR	X							
Puerto Rico	Maricao y Susúa	Magnoliopsida	*Xylosma pachyphyllum*	Spiny Logwood	CR	X							
Puerto Rico	Maricao y Susúa	Cycadopsida	*Zamia portoricensis*	Marunguey	EN	X							
Puerto Rico	Mona y Monito	Aves	*Agelaius xanthomus*	Yellow-shouldered Blackbird	EN	X					X		

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Puerto Rico	Mona y Monito	Reptilia	*Cyclura stejnegeri*	Mona Rhinoceros Iguana	EN			X		X	X		
Puerto Rico	Mona y Monito	Amphibia	*Eleutherodactylus monensis*	Mona Coqui	VU		X				X		
Puerto Rico	Mona y Monito	Reptilia	*Eretmochelys imbricata*	Hawksbill Turtle	CR			X					X
Puerto Rico	Mona y Monito	Reptilia	*Spondylurus monae*	Mona Skink	CR	X				X	X		
Puerto Rico	Mona y Monito	Reptilia	*Typhlops monensis*	Mona Blind Snake	EN	X				X	X		
Puerto Rico	Piñones	Reptilia	*Dermochelys coriacea*	Leatherback	VU				X				
Puerto Rico	Piñones	Magnoliopsida	*Erythrina eggersii*	Cock's-spur	EN	X							
Puerto Rico	Piñones	Magnoliopsida	*Schoepfia arenaria*	n/a	EN	X							
Puerto Rico	Sabana Seca	Amphibia	*Eleutherodactylus juanariveroi*	n/a	CR	X							
Puerto Rico	Salinas de Punta Cucharas	Magnoliopsida	*Erythrina eggersii*	Cock's-spur	EN	X							
Puerto Rico	Salinas de Punta Cucharas	Magnoliopsida	*Leptocereus quadricostatus*	Sebucan	EN	X							
Puerto Rico	Salinas de Punta Cucharas	Magnoliopsida	*Maytenus ponceana*	n/a	VU		X						
Puerto Rico	Salinas de Punta Cucharas	Magnoliopsida	*Trichilia triacantha*	n/a	CR	X							
Puerto Rico	Salinas de Punta Cucharas	Magnoliopsida	*Varronia rupicola*	n/a	CR	X							
Puerto Rico	Sierra Bermeja y Laguna Cartagena	Aves	*Agelaius xanthomus*	Yellow-shouldered Blackbird	EN	X							
Puerto Rico	Sierra Bermeja y Laguna Cartagena	Aves	*Antrostomus noctitherus*	Puerto Rican Nightjar	EN	X							
Puerto Rico	Sierra Bermeja y Laguna Cartagena	Magnoliopsida	*Eugenia woodburyana*	n/a	CR	X							
Puerto Rico	Sierra Bermeja y Laguna Cartagena	Magnoliopsida	*Manilkara pleeana*	n/a	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Puerto Rico	Sierra Bermeja y Laguna Cartagena	Magnoliopsida	*Stahlia monosperma*	Cóbana Polisandro	EN	X							
Puerto Rico	Sierra de Pandura	Amphibia	*Eleutherodactylus portoricensis*	Puerto Rican Robber Frog	EN			X					
Puerto Rico	Suroeste	Aves	*Agelaius xanthomus*	Yellow-shouldered Blackbird	EN	X					X		
Puerto Rico	Suroeste	Aves	*Antrostomus noctitherus*	Puerto Rican Nightjar	EN	X					X		
Puerto Rico	Suroeste	Magnoliopsida	*Eugenia woodburyana*	n/a	CR	X							
Puerto Rico	Suroeste	Magnoliopsida	*Leptocereus quadricostatus*	Sebucan	EN	X							
Puerto Rico	Suroeste	Magnoliopsida	*Zanthoxylum flavum*	West Indian Satinwood	VU				X				
Puerto Rico	Vieques	Magnoliopsida	*Calyptranthes thomasiana*	Thomas' Lidflower	EN	X							
Puerto Rico	Vieques	Reptilia	*Chelonia mydas*	Green Turtle	EN			X					
Puerto Rico	Vieques	Magnoliopsida	*Chrysophyllum pauciflorum*	n/a	VU		X						
Puerto Rico	Vieques	Magnoliopsida	*Erythrina eggersii*	Cock's-spur	EN	X							
Puerto Rico	Vieques	Magnoliopsida	*Goetzea elegans*	Beautiful Goetzea	EN	X							
Puerto Rico	Vieques	Magnoliopsida	*Manilkara pleeana*	n/a	VU		X						
Puerto Rico	Vieques	Magnoliopsida	*Maytenus cymosa*	Caribbean Mayten	EN	X							
Puerto Rico	Vieques	Magnoliopsida	*Stahlia monosperma*	Cóbana Polisandro	EN	X							
Saint Kitts and Nevis	Cayon to Key	Reptilia	*Dermochelys coriacea*	Leatherback	VU				X				
Saint Kitts and Nevis	Nevis Peak	Mammalia	*Chiroderma improvisum*	Guadeloupean Big-eyed Bat	EN	X							

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Saint Lucia	Anse Cochon Protected Landscape	Reptilia	*Anolis luciae*	Saint Lucia Anole	EN	X							
Saint Lucia	Anse Cochon Protected Landscape	Reptilia	*Bothrops caribbaeus*	Saint Lucia Lancehead	EN	X							
Saint Lucia	Anse Cochon Protected Landscape	Aves	*Melanospiza richardsoni*	Saint Lucia Black Finch	EN	X							
Saint Lucia	Castries and Dennery Waterworks Reserve and Marquis	Aves	*Amazona versicolor*	Saint Lucia Amazon	VU		X				X		
Saint Lucia	Castries and Dennery Waterworks Reserve and Marquis	Reptilia	*Anolis luciae*	Saint Lucia Anole	EN	X							
Saint Lucia	Castries and Dennery Waterworks Reserve and Marquis	Reptilia	*Bothrops caribbaeus*	Saint Lucia Lancehead	EN	X							
Saint Lucia	Castries and Dennery Waterworks Reserve and Marquis	Magnoliopsida	*Magnolia dodecapetala*	n/a	VU		X						
Saint Lucia	Castries and Dennery Waterworks Reserve and Marquis	Aves	*Melanospiza richardsoni*	Saint Lucia Black Finch	EN	X					X		
Saint Lucia	Castries and Dennery Waterworks Reserve and Marquis	Aves	*Turdus lherminieri*	Forest Thrush	VU				X				
Saint Lucia	Iyanola and Grande Anse, Esperance and Fond D'ors	Reptilia	*Anolis luciae*	Saint Lucia Anole	EN	X							
Saint Lucia	Iyanola and Grande Anse, Esperance and Fond D'ors	Reptilia	*Bothrops caribbaeus*	Saint Lucia Lancehead	EN	X							
Saint Lucia	Iyanola and Grande Anse, Esperance and Fond D'ors	Aves	*Melanospiza richardsoni*	Saint Lucia Black Finch	EN	X					X		
Saint Lucia	Iyanola and Grande Anse, Esperance and Fond D'ors	Aves	*Ramphocinclus brachyurus*	White-breasted Thrasher	EN	X					X		
Saint Lucia	Iyanola and Grande Anse, Esperance and Fond D'ors	Reptilia	*Tetracheilostoma breuili*	Saint Lucia Threadsnake	EN	X							
Saint Lucia	Mandelé Protected Landscape	Aves	*Amazona versicolor*	Saint Lucia Amazon	VU		X						
Saint Lucia	Mandelé Protected Landscape	Reptilia	*Anolis luciae*	Saint Lucia Anole	EN	X							

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
Saint Lucia	Mandelé Protected Landscape	Reptilia	*Bothrops caribbaeus*	Saint Lucia Lancehead	EN	X							
Saint Lucia	Mandelé Protected Landscape	Reptilia	*Cnemidophorus vanzoi*	Saint Lucian Whiptail	CR	X							
Saint Lucia	Mandelé Protected Landscape	Aves	*Melanospiza richardsoni*	Saint Lucia Black Finch	EN	X							
Saint Lucia	Mandelé Protected Landscape	Aves	*Ramphocinclus brachyurus*	White-breasted Thrasher	EN	X					X		
Saint Lucia	Mandelé Protected Landscape	Reptilia	*Tetracheilostoma breuili*	Saint Lucia Threadsnake	EN	X							
Saint Lucia	Pitons(Qualibou and Canaries)	Reptilia	*Anolis luciae*	Saint Lucia Anole	EN	X							
Saint Lucia	Pitons(Qualibou and Canaries)	Reptilia	*Bothrops caribbaeus*	Saint Lucia Lancehead	EN	X							
Saint Lucia	Pitons(Qualibou and Canaries)	Pinopsida	*Juniperus barbadensis*	West Indies Juniper	VU		X						
Saint Lucia	Pitons(Qualibou and Canaries)	Magnoliopsida	*Magnolia dodecapetala*	n/a	VU		X						
Saint Lucia	Pitons(Qualibou and Canaries)	Aves	*Melanospiza richardsoni*	Saint Lucia Black Finch	EN	X					X		
Saint Lucia	Pitons(Qualibou and Canaries)	Reptilia	*Tetracheilostoma breuili*	Saint Lucia Threadsnake	EN	X							
Saint Lucia	Pointe Sable	Reptilia	*Anolis luciae*	Saint Lucia Anole	EN	X							
Saint Lucia	Pointe Sable	Reptilia	*Cnemidophorus vanzoi*	Saint Lucian Whiptail	CR	X							
Saint Lucia	Pointe Sable	Reptilia	*Erythrolamprus ornatus*	Saint Lucia Racer	CR	X				X	X		
Saint Lucia	Pointe Sable	Reptilia	*Tetracheilostoma breuili*	Saint Lucia Threadsnake	EN	X							
Saint Lucia	Rat Island	Reptilia	*Anolis luciae*	Saint Lucia Anole	EN	X							
Saint Lucia	Rat Island	Reptilia	*Cnemidophorus vanzoi*	Saint Lucian Whiptail	CR	X							
St. Vincent and the Grenadines	Chatham Bay, Union Island	Reptilia	*Amerotyphlops tasymicris*	Grenada Bank blindsnake	EN	X							
St. Vincent and the Grenadines	Chatham Bay, Union Island	Reptilia	*Gonatodes daudini*	Union Island gecko	CR	X				X	X		
St. Vincent and the Grenadines	Chatham Bay, Union Island	Reptilia	*Sphaerodactylus kirbyi*	Grenadines Sphaero	VU		X						

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
St. Vincent and the Grenadines	Colonarie Forest Reserve	Aves	*Amazona guildingii*	St Vincent Amazon	VU		X				X		
St. Vincent and the Grenadines	Colonarie Forest Reserve	Aves	*Catharopeza bishopi*	Whistling Warbler	EN	X					X		
St. Vincent and the Grenadines	Colonarie Forest Reserve	Reptilia	*Chironius vincenti*	St Vincent Blacksnake	CR	X							
St. Vincent and the Grenadines	Cumberland Forest Reserve	Aves	*Amazona guildingii*	St Vincent Amazon	VU		X				X		
St. Vincent and the Grenadines	Cumberland Forest Reserve	Aves	*Catharopeza bishopi*	Whistling Warbler	EN	X							
St. Vincent and the Grenadines	Cumberland Forest Reserve	Reptilia	*Chironius vincenti*	St Vincent Blacksnake	CR	X							
St. Vincent and the Grenadines	Cumberland Forest Reserve	Amphibia	*Pristimantis shrevei*	n/a	EN	X							
St. Vincent and the Grenadines	Dalaway (Buccament) Watershed	Aves	*Amazona guildingii*	St Vincent Amazon	VU		X				X		
St. Vincent and the Grenadines	Dalaway (Buccament) Watershed	Aves	*Catharopeza bishopi*	Whistling Warbler	EN	X							
St. Vincent and the Grenadines	Dalaway (Buccament) Watershed	Reptilia	*Chironius vincenti*	St Vincent Blacksnake	CR	X							
St. Vincent and the Grenadines	Kingstown Forest Reserve	Aves	*Amazona guildingii*	St Vincent Amazon	VU		X						
St. Vincent and the Grenadines	Kingstown Forest Reserve	Aves	*Catharopeza bishopi*	Whistling Warbler	EN	X							
St. Vincent and the Grenadines	Kingstown Forest Reserve	Reptilia	*Chironius vincenti*	St Vincent Blacksnake	CR	X							
St. Vincent and the Grenadines	La Soufrière National Park	Aves	*Amazona guildingii*	St Vincent Amazon	VU		X				X		
St. Vincent and the Grenadines	La Soufrière National Park	Aves	*Catharopeza bishopi*	Whistling Warbler	EN	X					X		
St. Vincent and the Grenadines	La Soufrière National Park	Amphibia	*Pristimantis shrevei*	n/a	EN	X					X		
St. Vincent and the Grenadines	Mount Pleasant Forest Reserve	Aves	*Amazona guildingii*	St Vincent Amazon	VU		X				X		
St. Vincent and the Grenadines	Mount Pleasant Forest Reserve	Aves	*Catharopeza bishopi*	Whistling Warbler	EN	X					X		
St. Vincent and the Grenadines	Mount Pleasant Forest Reserve	Reptilia	*Chironius vincenti*	St Vincent Blacksnake	CR	X							

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
St. Vincent and the Grenadines	Richmond Forest Reserve	Aves	*Amazona guildingii*	St Vincent Amazon	VU		X				X		
St. Vincent and the Grenadines	Richmond Forest Reserve	Aves	*Catharopeza bishopi*	Whistling Warbler	EN	X					X		
St. Vincent and the Grenadines	Richmond Forest Reserve	Reptilia	*Chironius vincenti*	St Vincent Blacksnake	CR	X							
St. Vincent and the Grenadines	Richmond Forest Reserve	Amphibia	*Pristimantis shrevei*	n/a	EN	X							
US Virgin Islands	Buck Island	Reptilia	*Ameiva polops*	St. Croix Ameiva	EN	X							
US Virgin Islands	Buck Island	Reptilia	*Chelonia mydas*	Green Turtle	EN			X					
US Virgin Islands	Buck Island	Reptilia	*Eretmochelys imbricata*	Hawksbill Turtle	CR			X					X
US Virgin Islands	East End Bay	Reptilia	*Chelonia mydas*	Green Turtle	EN			X					
US Virgin Islands	Hassel Island - Virgin Islands National Park	Amphibia	*Eleutherodactylus lentus*	Yellow Mottled Coqui	EN	X							
US Virgin Islands	Jack and Isaac Bays	Reptilia	*Chelonia mydas*	Green Turtle	EN			X					
US Virgin Islands	Magens Bay	Magnoliopsida	*Chrysophyllum pauciflorum*	n/a	VU		X						
US Virgin Islands	Magens Bay	Amphibia	*Eleutherodactylus lentus*	Yellow Mottled Coqui	EN	X							
US Virgin Islands	Magens Bay	Magnoliopsida	*Erythrina eggersii*	Cock's-spur	EN	X							
US Virgin Islands	Magens Bay	Magnoliopsida	*Zanthoxylum thomasianum*	St Thomas Prickly-ash	EN	X							
US Virgin Islands	Northwestern St Croix	Amphibia	*Eleutherodactylus lentus*	Yellow Mottled Coqui	EN	X					X		
US Virgin Islands	Protestant Cay	Reptilia	*Ameiva polops*	St. Croix Ameiva	EN	X							
US Virgin Islands	Ruth Cay	Reptilia	*Ameiva polops*	St. Croix Ameiva	EN	X							

Country	Site Name	Class	Scientific Name	English Name	Red List	A1a	A1b	A1c	A1d	A1e	B1	B2	D1
US Virgin Islands	Sandy Point National Wildlife Refuge	Reptilia	*Chelonia mydas*	Green Turtle	EN			X					
US Virgin Islands	Sandy Point National Wildlife Refuge	Reptilia	*Dermochelys coriacea*	Leatherback	VU				X				
US Virgin Islands	Sandy Point National Wildlife Refuge	Reptilia	*Eretmochelys imbricata*	Hawksbill Turtle	CR			X					
US Virgin Islands	Southgate and Green Cay	Reptilia	*Ameiva polops*	St. Croix Ameiva	EN	X							
US Virgin Islands	Virgin Islands National Park	Magnoliopsida	*Calyptranthes thomasiana*	Thomas' Lidflower	EN	X							
US Virgin Islands	Virgin Islands National Park	Reptilia	*Chilabothrus monensis*	Mona Island Boa	EN	X				X	X		
US Virgin Islands	Virgin Islands National Park	Magnoliopsida	*Chrysophyllum pauciflorum*	n/a	VU		X						
US Virgin Islands	Virgin Islands National Park	Amphibia	*Eleutherodactylus lentus*	Yellow Mottled Coqui	EN	X							
US Virgin Islands	Virgin Islands National Park	Amphibia	*Eleutherodactylus schwartzi*	Virgin Islands Coqui	EN	X				X	X		
US Virgin Islands	Virgin Islands National Park	Magnoliopsida	*Erythrina eggersii*	Cock's-spur	EN	X							
US Virgin Islands	Virgin Islands National Park	Magnoliopsida	*Machaonia woodburyana*	n/a	CR	X							
US Virgin Islands	Virgin Islands National Park	Magnoliopsida	*Maytenus cymosa*	Caribbean Mayten	EN	X							
US Virgin Islands	Virgin Islands National Park	Magnoliopsida	*Zanthoxylum thomasianum*	St Thomas Prickly-ash	EN	X							

Appendix 5 Protected Area Management Context by Country

Antigua and Barbuda			
National legislation; policies and plans of relevance to biodiversity management	**Institutional and monitoring frameworks**	**Key threats to biodiversity (including policy threats)**	**Key opportunities and strengths for biodiversity conservation, including NBSAPs; NAPs; legislation, policies, plans and projects**
Beach Protection Act, Beach Control Regulations, Beach Protection (Amendment) Act (1993) Environment Management Bill 2011 Environmental Protection Levy Act (2002) Fisheries Act (1983) Fisheries Regulations 1990 Forestry Act, Forestry Regulations National Environment Strategy (2004) National Parks Act, National Parks (Amendment) Act (2004) Physical Planning Act (2003) Sustainable Island Resource Management Zoning Plan (2012) (Draft) Water Policy 2015 Wild Birds Protection Act (1913)	Responsibility for biodiversity projects is shared between the Environment Division of the Ministry of Agriculture and the Project Management Unit within the Ministry of Finance. Informal NGO monitoring of specific species takes place. There is a National Coordinating Mechanism and Technical Advisory Committee to further assist in coordination.	Tourism is an important sector and economic policies often promote tourism at the expense of biodiversity. Tourism infrastructure and activities can lead to habitat fragmentation and water pollution, in turn compromising biodiversity. Land clearance for housing and the impact of overgrazing on biodiversity are other concerns. Overgrazing directly removes plant cover and animal habitat and leads to soil erosion and biodiversity loss due to sedimentation of waterways. Sewage pollution of marine habitats is also a major concern. Invasive species such as the giant African snail, lionfish and lemon grass are threats on the islands. Further collection of biodiversity data is needed.	There are currently nine protected areas in the country. An additional 10 are proposed. Existing protected areas generally have management plans but management is constrained by limited financial resources. The country has a NBSAP in place and is developing a national system plan for protected areas. The most recent NBSAP was produced in 2014. The Fifth National Report to the CBD has been prepared. The country's environmental strategy emphasizes biodiversity. There is also an agricultural biodiversity strategy. There are GIS based databases available to aid in land use and biodiversity decisions. There has been significant involvement of civil society in the collection of data and monitoring of biodiversity resources. There is a strong focus on eco-tourism, working in collaboration with NGOs like the Environmental Awareness Group.

The Bahamas			
National legislation; policies and plans of relevance to biodiversity management	**Institutional and monitoring frameworks**	**Key threats to biodiversity (including policy threats)**	**Key opportunities and strengths for biodiversity conservation including: NBSAPs; NAPs; legislation, policies, plans and projects**
Conservation and Protection of the Physical Landscape of The Bahamas Act (1997) Environmental Planning and Protection Act (2006) Environmental Impact Assessment Regulations (2005) Fisheries Resources (Jurisdiction and Conservation) Act and Regulations (2012) Forestry Act 2010 and Forestry Regulations (2014) (Draft) Integrated Water Resources Management Plan (Draft) National Action Programme to Combat Land Degradation Planning and Subdivision Bill (2010) Wild Animals (Protection) Act (1952) Wild Birds Protection Act (1952) Wildlife Conservation and Trade Act, Marine Mammal Protection Act and General Regulations (1993)	The Ministry of Environment and the Bahamas Environment Science and Technology (BEST) Commission manage biodiversity and administer the country's NBSAP.	Tourism and fishing have strong impacts on biodiversity. Given that The Bahamas consists of low-lying coralline islands, climate change is a major concern for biodiversity vis-à-vis land loss and coral bleaching. Marine invasive species, for example, the lionfish, are recognized as major threats to biodiversity. Marine species overharvesting is also an important biodiversity issue concern.	The various fisheries resources laws and regulations demarcate a number of protected areas including High Cay and Surrounding Waters, South Berry Islands Marine Reserve, The Exuma (Jewfish Cay) Marine Reserve. The Forestry Act and Regulations speak to the protection of wetlands and protection of specific tree species. This legislation also requires the development and revision of a National Forest Plan every 5 years. Sectoral plans address biodiversity concerns, for example, the agricultural sector plan protects water resources and agricultural biodiversity and includes actions for invasive species; the marine sector plan addresses sustainable yield of fisheries resources and management of invasive species. The tourism sector plan addresses pollution and promotes ecotourism. An ecotourism plan has been developed for the island of Andros. Strategic plans of the Bahamas National Trust, which manages a number of the protected areas, addresses protected areas and invasive species. National cross-sectoral integration is advancing through various land use projects. The NBSAP 1999 focuses heavily on education and mechanisms for financial support. The Fourth National Report was produced in 2011.

Barbados			
National legislation; policies and plans of relevance to biodiversity management	**Institutional and monitoring frameworks**	**Key threats to biodiversity (including policy threats)**	**Key opportunities and strengths for biodiversity conservation including: NBSAPs; NAPs; legislation, policies, plans and projects**
(Draft) Environmental Management Act Coastal Zone Management Act (1998) Integrated Coastal Management Plan Fisheries Act (1993) Fisheries Management Plan Guidelines for the Management of Alien/Exotic Species Gully Management Plan Tourism Development Bill (2002) National Sustainable Development Policy Town Planning Act (1998); Sustainable Tourism Policy National Park Plan Physical Development Plan, Amended 2017	Biodiversity matters are managed through the Natural Heritage Department of the Ministry of Environment and Drainage in conjunction with a national biodiversity working group The Ministry has an annual biodiversity work program. A CITES Scientific Authority also exists which collaborates in the execution of the Ministerial biodiversity program. Formal monitoring system for biodiversity is not in place but through legislation and policies there is progress towards Aichi targets.	Government policies that promote tourism have led to land clearance, habitat damage and marine pollution. However, the country has a Sustainable Tourism Policy, which attempts to address the above concerns. Lack of enforcement of legislation and limited staff within the Natural Heritage Department are other challenges.	Barbados benefits from many laws and policies that, *inter alia*, address biodiversity. These include a National Sustainable Development Policy which has 170 indicators, 5 of which speak to biodiversity. Environmental coordination is advanced through multi-sectoral committees for integration and collaboration. The country has plans addressing specific unique habitats, for example, the gully management plan. A campus of the University of the West Indies is in Barbados which, through its Centre for Resource Management and Environmental Studies, executes work in relation to Biodiversity. The Barbados 2002 NBSAP is currently being revised. The existing NBSAP speaks to policy and legislation harmonization and use of incentives for biodiversity protection. It also emphasizes traditional knowledge. The country's Fourth National Report was completed in 2011.

Cuba			
National legislation; policies and plans of relevance to biodiversity management	**Institutional and monitoring frameworks**	**Key threats to biodiversity (including policy threats)**	**Key opportunities and strengths for biodiversity conservation including: NBSAPs; NAPs; legislation, policies, plans and projects**
National Environmental Strategy Law of the Environment (1997) Law of the Forest (1998) Action Plan on Protected Areas 2008 National Action plan for Phytogenic Resources National Biosafety Framework Various laws on specific marine fisheries resources.	Biodiversity management is administered by the Ministry of Science, Technology and the Environment (CITMA)	Tourism, mining and invasive species have been identified as key threats to Cuba's biodiversity. Biodiversity legislation is considered inadequate. Limited funds for biodiversity protection.	Comprehensive National Protected Areas system accounting for 20 percent of Cuba's terrestrial area and 25 percent of its marine area. Of these about 100 have management plans. The second version of the NBSAP was prepared in 2006. It emphasizes traditional knowledge. The country's fifth national report has been prepared. Initiatives on payments for ecosystem services are progressing. A National Biodiversity Information Network (RINBIO) is in place. Limited foreign investment to date has served to protect the country's biodiversity. However, this is changing with improved diplomatic relations between the US and Cuba.

Dominica			
National legislation; policies and plans of relevance to biodiversity management	**Institutional and monitoring frameworks**	**Key threats to biodiversity (including policy threats)**	**Key opportunities and strengths for biodiversity conservation including: NBSAPs; NAPs; legislation, policies, plans and projects**
Physical Planning Act (2002); Town and Country Planning Act (1975); National Environmental Management Strategy; National Land Use Policy; Land Management Authority Act (1973) National Parks and Protected Areas Act (1975); Dominica Forest and Park System Plan Forests Act (1959); Forest and Wildlife Act (1976); Forest Rules; Crown Land (Forest Produce) Rules Forests; Soil and Water Conservation Ordinance Fisheries Act (1987) he Fisheries (Marine Reserve) Regulations (2001) Fisheries (Soufriere/Scotts Head Marine Reserve) Order Beach Control Ordinance Water and Sewerage Act (1994); Water and Sewerage (Catchment Area) Regulations (1995)	Responsibility for biodiversity management rests within the Ministry of Environment, Natural Resources, Physical Planning and Fisheries in conjunction with the Ministry of Agriculture and Forestry and the Ministry of Housing, Settlements, and Water Resource Management.	Deforestation has been highlighted as a main issue. Deforestation exacerbates the impact of high intensity rainfall events which are a function of climate change in the region. This results in landslides and further loss of biodiversity. Invasive species are another concern. The country's environmental legal framework is not regarded as adequate.	Twenty-five percent of the country is under protection inclusive of forest reserves and national parks. The Morne Trois Pitons National Park is also a World Heritage Site. A biosphere reserve is also to be declared on Dominica. The NBSAP was created in 2001 but its implementation has been hampered by a lack of financial and human resources. However, there are some advances in the country including biodiversity public awareness initiatives. Invasive species management is a focus of the NBSAP, as is the protection of indigenous people's rights. Dominica's Fifth National Report to the CBD has been prepared. The national environmental coordination unit helps ensure non-duplication and cooperation of biodiversity with other environmental initiatives.

Dominican Republic			
National legislation; policies and plans of relevance to biodiversity management	**Institutional and monitoring frameworks**	**Key threats to biodiversity (including policy threats)**	**Key opportunities and strengths for biodiversity conservation including: NBSAPs; NAPs; legislation, policies, plans and projects**
General Law on Environmental and Natural Resources (Ley General sobre Medio Ambiente y Recursos Naturales – N. 64-00) Compendium of Regulations and Procedures for Environmental Authorizations in the Dominican Republic (Compendio de reglamentos y procedimientos para autorizaciones ambientales de la República. Dominicana. Santo Domingo, D.N. 2014 Revised Sectoral Law on Protected Areas (2004) (Ley Sectorial de las Areas Protegidas –N. 202-04) Forestry Law (Ley Forestal N.118-99) Forest Regulation (Reglamento Forestal) Law 290 on Incentives for Forestry Development (Ley sobre Incentivo al Desarrollo Forestal - N. 290) National Development Strategy 2010-2030 (Estrategia Nacional de Desarrollo de República Dominicana 2010-2030) Land Management Policy	A National Biodiversity Committee is in place. Guidelines have been developed for establishing a National System for Biodiversity Monitoring.	Habitat destruction and fragmentation due to agriculture and tourism Mining, illegal fishing and timber harvesting	A National System of Protected Areas is in place. It covers 25 percent of the land mass. A master implementation plan and a financial sustainability plan have been developed for the system. The NBSAP was developed in 2011, benefiting from a strong involvement of women in its development. It promotes ecosystem approaches. Protection of the country's biodiversity has been advanced by a number of public awareness campaigns which for example have targeted the protection of individual species. The business community is also involved in biodiversity conservation activities through, for example, a nonprofit natural resource network. Some mainstreaming of biodiversity has taken place, for example, inclusion in the national development plan. There have also been economic evaluations of some of the protected areas. Work has also progressed in incorporating traditional knowledge in biodiversity protection as well as UN REDD certification and the sale of carbon credits. The Revised Sectoral Law on Protected Areas 2004 speaks to co-management and the involvement of civil society.

Grenada			
National legislation; policies and plans of relevance to biodiversity management	**Institutional and monitoring frameworks**	**Key threats to biodiversity (including policy threats)**	**Key opportunities and strengths for biodiversity conservation including: NBSAPs; NAPs; legislation, policies, plans and projects**
Land Development Control Act; Crown Lands Ordinance (1896); Crown Land Rules 1934; Physical Planning and Development Control Act (2002); Planning and Development Regulations (2002); (Draft) National Physical Development Plan National Strategic Development Plan (2005) Environmental Management Act, (2005); National Environment Policy and Management Strategy Forest Soil and Water Conservation Act (Cap 116) (1949(2013)); Forest Policy Strategic Plan 2001-2011; National Forest Policy 1999; (Draft) Plan and Policy for System of National Parks and Protected Area 2005; National Forest Policy. Bird and Other Wildlife Protection Act; Wildlife and Birds Sanctuary Act; National Parks and Protected Areas Act (1990); (Draft) Protected Areas, Forestry and Wildlife Bill; (Draft) National Protected Area Trust Bill National Biosafety Framework National Agricultural Policy Poverty Eradication Strategy Tourism Policy Framework 2010; Tourism Master Plan Land and Marine Management Strategy (2011) (Draft) Land Use Policy (Carriacou) (2013) Beach Protection Act, (Cap 29) (1979 (2013)	Sustainable Development Council	High percentage of the country's terrestrial land mass is under cultivation and used for grazing. These factors are the major biodiversity threats. However, tourism and pollution are others. Invasive species are a concern. Grenada's biodiversity has also been impacted by a number of natural disasters, in particular, hurricanes.	NBSAP completed in 2000. New marine protected areas are being created under the Caribbean Challenge Initiative. The Sustainable Development Council facilitates greater coordination of sectoral issues.

Haiti			
National legislation; policies and plans of relevance to biodiversity management	**Institutional and monitoring frameworks**	**Key threats to biodiversity (including policy threats)**	**Key opportunities and strengths for biodiversity conservation including: NBSAPs; NAPs; legislation, policies, plans and projects**
Decree on Management of the Environment (2006) Regulation of Citizens' Behaviour for Sustainable Development (2006) General Law on the Environment General Law on Water	Haiti has a Ministry of Environment created in 1995. The Agence Nationale des Aires Protégées d'Haïti (ANAP) is the government agency with responsibility for protected area management. In 2017, its status was elevated from a department within the Ministry of the Environment to an executive agency. The Ministry of Agriculture Natural Resources and Rural Development also has a biodiversity role. CSOs are part of Haiti's *Groupe de Travail sur les Aires Protégées* (Protected Areas Working Group).	Habitat fragmentation and invasive species have been identified as key concerns as well as poverty and population growth. A lack of administrative coordination is another challenge, as well as limited civil society involvement and overall low levels of human and financial resources. The national development agenda does not address biodiversity and overall it is noted that there is a high level of inter-agency conflict. Haiti has also had a turbulent political history and has faced several natural disasters. Only about 0.3 percent of the country's area is under protection.	NBSAP has not been completed and remains at the stage of an NBSAP Profile. Work is also in progress on the establishment of an international Biosphere reserve, biological corridors, as well as a marine park in the northwest of the island.

Jamaica			
National legislation; policies and plans of relevance to biodiversity management	**Institutional and monitoring frameworks**	**Key threats to biodiversity (including policy threats)**	**Key opportunities and strengths for biodiversity conservation including: NBSAPs; NAPs; legislation, policies, plans and projects**
Planning Institute of Jamaica Act (1984); Town and Country Planning Act (1958 Amended 1999); Land Development and Utilization Act (1996); National Physical Plan; National Development Plan (Vision 2030). (Draft) Environmental Management Systems Policy and Strategy); Natural Resources Conservation Authority Act (1991); Jamaica National Environmental Action Plan (JaNEAP) Forest Act (1996) and Forest Regulations (2001); Forest Land Policy 2001; Strategic Forest Management Plan (2009-2013) Beach Control Act (1956); (Draft) Beach Policy for Jamaica Wild Life Protection Act (1945, Last Amendment 1991); Endangered Species (Protection, Conservation and Regulation of Trade) Act (2000); Alien Invasive Species Management Strategy Natural Resources (Marine Parks) Regulations (1992); Policy for Jamaica's System of Protected Areas 1997; Protected Areas System Master Plan Watersheds Protection Act (1963, Last Amendment 1991); (Draft)Watershed Management Policy Fishing Industry (Special Fishery Conservation Area) Regulations (2012); Fisheries Industry Act (1975) (Draft) Fisheries Policy Framework	Biodiversity management falls under the National Environment and Planning Agency (NEPA) Biodiversity monitoring aspects included in the protected areas systems masters plan, for example, monitoring of vulnerable ecosystems.	Economic emphasis on tourism leads to habitat loss. Poor spatial planning/Land use management There are a substantial number of laws addressing natural resource management, but the approach is piecemeal and requires a more holistic approach. Existing legislation is also not enforced. Invasive species are also a concern.	Local management by NGOs and communities is Principle V of the country's second NBSAP (2016-2021). There is a draft overarching policy for protected areas and drafting instructions for overarching protected area legislation—Protected Areas Act for Jamaica—have been prepared. There is an existing Jamaica National Parks Trust Fund and attempts for sustainable financing, however, these may not be adequate. Funding for initiatives under the NBSAP is also a concern. A number of projects in place in the country do address the Aichi targets, for example, projects on public awareness, ecosystem rehabilitation and invasive species. The National Development Plan references biodiversity and Aichi targets. Protected Systems Master Plan includes provisions for participatory planning. Subsidies exist for persons who maintain forest cover on private land. There are also three privately owned forest reserves on the island.

Saint Kitts and Nevis			
National legislation; policies and plans of relevance to biodiversity management	**Institutional and monitoring frameworks**	**Key threats to biodiversity (including policy threats)**	**Key opportunities and strengths for biodiversity conservation including: NBSAPs; NAPs; legislation, policies, plans and projects**
Saint Kitts Development Control and Planning Act (2000); Nevis Physical Planning and Development Control Ordinance (2005); Land Conversation and Improvement Act (1992) National Conservation and Environment Protection Act (1987); National Conservation and Environment Management Act (2005) International Trade in Wild Fauna and Flora Act (2009) The Biosafety Act (2012) International Trade in Wild Fauna and Flora Act (2009) Marine Pollution Management Act (2000); Maritime Areas Act (1984) Fisheries Act (1984)	Ministry of Sustainable Development	Sand mining within ghauts (gullies) and beaches Farming on steep upper hill slopes Grazing Invasive species, for example, Guinea grass Marine pollution both ship based and land based	The second NBSAP was produced in 2014. Management programs exist for specific species, for example, turtle species. A marine protected area is expected to be designated soon. Work under regional projects, for example, the GEF-IWECO project will address issues like land degradation in ghauts. A number of terrestrial protected areas are in place.

Saint Lucia			
National legislation; policies and plans of relevance to biodiversity management	**Institutional and monitoring frameworks**	**Key threats to biodiversity (including policy threats)**	**Key opportunities and strengths for biodiversity conservation including: NBSAPs; NAPs; legislation, policies, plans and projects**
Physical Planning and Development Act (Revised 2005); Land Development (Interim Control) Act (1971); Land Conservation and Improvement Act (1992); National Land Policy National Conservation and Environment Protection Act (1987) Environmental Impact Assessment Regulations Crown Land Ordinance (1946) Fisheries Act (1984); Fisheries Regulations (1994) Parks and Beaches Commission Act (1983) Maritime Areas Act (1984) Water Policy Forest Management and Plant Protection Act; Forest Water and Soil Conservation Act; Wildlife Protection Act (1980); Forest Management Plan (Draft) National Biosafety Framework; (Draft) Biosafety Policy and Biosafety Bill	Country has a dedicated biodiversity unit. Sustainable Development Unit of the Ministry of Sustainable Development, Energy, Science and Technology	Tourism and Agriculture impact on biodiversity through habitat loss and modification. Invasive species including the giant African snail and green iguana. Climate change impacts on marine ecosystems and plant phenology Land based sources of marine and fresh water pollution, eutrophication	First NBSAP approved by cabinet in 2001. NBSAP outlined specific projects of which 80 percent were executed by 2010. NBSAP is being revised to *inter alia* include aspects of invasive species. Country has a dedicated biodiversity unit. There are several protected areas including, 26 marine reserves and two Ramsar wetlands. Saint Lucia has one world heritage site. Management plans are not in place for all sites. Biodiversity concerns have been mainstreamed into policies such as the National Environment Policy and National Environmental Management Strategy. The country has a tissue culture lab for conservation of various agricultural species. There are also have onsite programs for the conservation of selected species including palms. Programs such as a National Biodiversity Awards Ceremony increase public awareness on biodiversity issues.

St. Vincent and the Grenadines			
National legislation; policies and plans of relevance to biodiversity management	**Institutional and monitoring frameworks**	**Key threats to biodiversity (including policy threats)**	**Key opportunities and strengths for biodiversity conservation including: NBSAPs; NAPs; legislation, policies, plans and projects**
The National Economic and Social Development Plan (2010-2025) National Parks Act (2002) Maritime Areas Act (1983) Town and Country Planning Act (1976) Fisheries Act (1986) Central Water and Sewerage Authority (Sewerage) (Amendment) Regulations (2012) Fisheries Management Plan (Draft) Environmental Management Act (2009) Integrated Forest Management and Development Programme	National Environmental Commission plays an overall coordination role. The Sustainable Development Unit, Ministry of Economic Planning, Sustainable Development, Industry, Information and Labour has a coordination role as well, particularly in relation to MEAs. Biodiversity inventories have been carried out under specific projects, for example, an OECS regional project on biodiversity. National Park staff, for example, those of the Tobago Cays Marine Park conducts regular inventories. The Forestry Department conducts routine specific species inventories.	Poor enforcement of laws Intuitional mandates difficult and overlapping Poor land use planning Deforestation and habitat loss due to squatting and sand mining Squatting/unplanned settlements Overfishing Land based sources of pollution Coral bleaching Heavy rains Natural threats include hurricanes and landslides	NBSAP developed in 2000 aiming to revise in addition to UNCCD revision. The country has a number of resources and databases to draw on for protected area management including the Grenadines Marine Resource Space-use Information System. Sustainable livelihoods are a government focus. The Forestry Department protects biodiversity and promotes community participation. The country's tourism development plan incorporates community-based site management. Biodiversity information is entered into a regional OECS database.

Sources: Caribbean Environmental Health Institute (2012); (Gore-Francis 2013); (Houck, 1999); Lexadin (n.d.); Quiroga et al (2016); Secretariat for the Convention on Biodiversity (2018).

Appendix 6 CSOs in CEPF-eligible Countries

This list is by no means exhaustive but gives an indication of the range of environmental groups in CEPF-eligible countries in the hotspot.

Country	Organization
Antigua and Barbuda	Antigua and Barbuda E-waste Center
	Antigua and Barbuda Fisheries Alliance
	Antigua and Barbuda Fishermen's Cooperative Society Limited.
	Antigua and Barbuda Horticultural Society (ABHS)
	Antigua and Barbuda Sport Fishing Association
	Antigua and Barbuda Waste Recycling Corporation
	Antigua Conservation Society
	Antigua Reforestation Group
	Aquaculture, Aquaponics and Agro-Ecology Society of Antigua and Barbuda
	Barbuda Community Development Agricultural Group
	Barbuda Fishermen's Cooperative
	Barbuda Fishers Association
	Barbuda Research Complex (BRC)
	Barnes Hill Community Group
	Bendals Community Group
	Environmental Awareness Group (EAG)
	Gilbert Agricultural and Rural Development Centre (GARD)
	John Hughes Community Group
	Marine Ecosystems Protected Areas Trust (MEPA)
	Precision Centre
	Rubber Duck Recycling (RDR)
	South Coast United Fisherfolk Cooperative
	Sustainable Island Resource Framework
	Team Fresh Produce Cooperative
The Bahamas	Abaco CARES
	Andros Conservancy and Trust (ANCAT)
	Bahamas Agri-Business Cooperative Society Ltd
	Bahamas Commercial Fishers Alliance
	Bahamas Fly Fishing Industry Association (BFFIA)
	Bahamas Marine EcoCentre (BME)
	Bahamas Marine Mammal Research Organisation
	Bahamas National Pride Association (BNPA)
	Bahamas National Trust
	Bahamas Plastic Movement

Country	Organization
	Bahamas Protected Areas Fund (BPAF)
	Bahamas Reef Environment Education Foundation (BREEF)
	Bahamas Sportfishing and Conservation Association (BSCA)
	Bahamian Environment Protection Foundation
	Bimini Biological Field Station Foundation (BBSF)
	Bimini Blue Coalition
	Cape Eleuthera Institute
	Cat Island United
	Centre for Ocean Research and Education (CORE)
	Earthcare
	Elizabeth Harbour Conservation Partnership
	Friends of the Environment
	Gerace Research Centre
	Grand Bahamas Farmers' Cooperative Ltd.
	Nature's Hope for South Andros
	One Eleuthera Foundation
	Perry Institute of Marine Sciences (PIMS)
	reEarth
	San Salvador Living Jewels (SSLJ)
	Save The Bays
	Young Marine Explorers
Barbados	Barbados Institute of Environmental Professionals
	Barbados Marine Trust
	Barbados National Trust
	Barbados National Union of Fisherfolk Organisations (BARNUFO)
	Barbados Renewable Energy Association (BREA)
	Barbados Sea Turtle Project
	Bawden Environmental Park Group
	Be the Change Barbados (BTCB)
	BlueGreen Initiatie (BGI)
	Caribbean Permaculture Research Institute of Barbados (CPRI)
	Community Tourism Foundation (CTF)
	Future Centre Trust (FCT)
	Keep Barbados Beautiful
	National Farmers Union
	Nature Fun Ranch (NFR)
	Organic Growers and Consumers Association (OGCA)
	Pasiton Caribbean Inc (PCI)

Country	Organization
	Project Discovery Inc
	Solagrow Inc
	The Sojourner Foundation (TSF)
	Walker's Reserve
	Young Nature Conservationist Association (YNCA)
Dominica	Archbold Tropical Research and Education Center (ATREC)
	Bellevue Chopin Organic Farmers Group
	Benjo Seamoss and Agroprocessing
	Dominica Conservation Association
	Dominica Fisheries Co-operative
	Dominica National Association of Youths in Agriculture (NAYA)
	Dominica Organic Agriculture Movement
	Dominica Organic Agriculture Movement Inc.
	Dominica Sea Turtle Conservation Organization
	Dominica Youth Environment Organisation
	Fond St. Jean Fisheries Co-operative
	Institute for Tropical Marine Ecology (ITME)
	Marigot Fisheries Cooperative
	Marigot Fisheries Co-operative (Northeast) Society Ltd.
	National Association of Fisherfolk Cooperative (NAFCOOP)
	National Association of Youth in Agriculture Inc. (NAYA)
	North East Farmers' Cooperative
	Soufriere Scott's Head Marine Reserve (SSMR)
	St. Andrew's Fisherfolk and Tourism Co-operative
	St. David's Fisheries Cooperative
	St. Joseph Fisherfolk Co-operative
	St. Mark's Fisherfolk and Tourism Co-operative
	St. Paul's Fisheries Cooperative
	Woodford Hill Fisherfolk and Farmers Co-operativeSociety Ltd.
Dominican Republic	Agrofrontera
	Asociación Clemente Melo, INC (ASOCLEM)
	Asociación para el Desarrollo de San José de Ocoa (ADESJO)
	Centro de Innovacion Atabey
	Centro de Investigación y Educación Popular, Inc. (CIEPO)
	Centro para el Desarrollo Agropecuario y Forestal (CEDAF)
	Centro para la Conservación y Ecodesarrollo de la Bahía de Samaná y su Entorno (CEBSE)
	Consejo Asesor Internacional de la Juventud Rural (CAJIR)
	Consejo Interinstitucional para el Desarrollo de Constanza, Inc (CIDC)

Country	Organization
	Consejo Provincial para la Administración de los Fondos Mineros (CFM)
	Consorcio Ambiental Dominicano (CAD)
	Cooperativa para el Desarrollo de la Ciénaga (COOPDECI)
	Enda Dominicana
	Fondo Pro Naturaleza (PRONATURA)
	Fundación ADEMI
	Fundación Corripio
	Fundación Cuidemos el Planeta con Reyes Guzmán
	Fundación de Desarrollo de la Comunidad Integral de Pedernales
	Fundación de Saneamiento Ambiental Comunitario (FUNSACO)
	Fundación Dominicana de Estudios Marinos, Inc.
	Fundacion Ecologica Dominicana
	Fundacion Ecológica Maguá
	Fundación Global Democracia y Desarrollo (FUNGLODE)
	Fundación José Delio Guzmán Inc.
	Fundación Loma Quita Espuela (FLQE)
	Fundación Moscoso Puello, Inc
	Fundación Naturaleza, Ambiente y Desarrollo (FNAD)
	Fundación Ozama RD Verde, Inc.
	Fundacion Popular
	Fundacion Progressio
	Fundación Propagas
	Fundación Saltadero para Rescate del Rio Jacagua
	Fundacion Social Ecológico
	Fundación Sur Futuro
	Fundacion Tropigas
	Groupo Ecologista Tinglar, Inc.
	Grupo Acción Ecológico (GAE)
	Grupo Jaragua, Inc.
	Grupo Puntacana Foundation
	Instituto de Abogados para la Protección del Medio Ambiente (INSAPROMA)
	Instituto de Derecho Ambiental de la República Dominicana (IDARD)
	Instituto Dominicano de Desarrollo Integral (IDDI)
	Instituto Dominicano de Investigaciones Agropecuarias y Forestales (IDIAF)
	Instituto Superior de Agricultura (ISA)
	Instituto Tecnológico de Santo Domingo (INTEC)
	Instituto Tecnológico del Cibao Oriental (ITCB)
	Kiunzi SRL

Country	Organization
	Mundo Ecológico
	Mundo Silvestre
	Museo Nacional de Historia Nacional (departamento de Investigación y Conservación)
	Plan Sierra
	Pontificia Universidad Católica Madre y Maestra (PUCMM)
	Programa de Acción Comunitaria por el Medio Ambiente (PACMA)
	Programa EcoMar, Inc.
	Red Dominicana de Turismo Rural (REDOTUR)
	Red Nacional de Apoyo Empresarial a la Protección Ambiental
	Sasino - Fuente de Esperanza
	Sociedad Ecológica de Barahona (SOEBA)
	Sociedad Ecológica de Paraíso (SOEPA)
	Sociedad Ornitológica Hispaniola
	Sociedad Para el Desarrollo Integral del Nordeste
	Universidad Abierta para Adultos (UAPA) including the departament of “Sociedad Ecológica”
	Universidad Agroforestal Fernando Arturo de Meriño (UAFAM)
	Universidad Autónoma de Santo Domingo including the Comisión Ambiental, the Centro de Investigaciones de Biología Marina, and the Instituto de Investigaciones Zoológicas y Botánicas.
	Universidad Católica Nordestana
	Universidad Católica Santo Domingo (UCSD)
	Universidad Católica Tecnológica de Barahona (UCATEBA)
	Universidad Católica Tecnológica del Cibao (UCATECI)
	Universidad Central del Este (UCE)
	Universidad Iberoamericana (UNIBE)
	Universidad Nacional Evangélica (UNEV)
	Universidad Nacional Pedro Henríquez Ureña (UNPHU)
	Universidad Tecnológica de Santiago (UTESA)
	Vida Azul
Grenada	Carriacou Environmental Committee
	Friends of the Earth Grenada
	Gouyave Fishermen’s Co-Operative Society Limited
	Grenada Dove Conservation Programme (GDCP)
	Grenada Fund for Conservation Inc.
	Grenada National Trust
	Grenada Sustainable Development Trust Fund (GSDTF)
	GRENCODA
	North East Farmers Organization
	Ocean Spirits Inc.
	Southern Fishermen’s Association

Country	Organization
	St. Georges University
	St. John's Fisherman Association
	St. Patricks Environmental and Community Tourism Organization
Haiti	Action Haitienne de Developpement de Secours (AHDS)
	Action pour le Développement du Nord-Ouest (ADNO)
	Agro Action Allemande
	AQUADEV
	Association Haitienne de Droit de l'Environnement
	Association pour la Promotion de l'Education de la Santé et de l'Environnement en Haïti (APESE)
	BRANA Foundation
	Bureau de Conseil et Services Humanitaires (BUCOSEH)
	Centre d'Appui pour le Développement Intégré (CADRI)
	Centre de Facilitation et de Developpement Communautaire (CEFADEC)
	Centre d'Etudes de Developpement et d'Amenagement d'Haiti (CEDAH)
	Collectif Développement (CODE)
	Comité d'Organisation pour le Developpement de l'Ile de la Gonave (CODIG)
	Development Organisation for Agricultural Production of Haitian Farmers
	Eko Ayiti
	Fédération des Associations pour le Développement de Fonds Verrettes (FADEF)
	Fondasyon Oseyanik Ayiti (FOA)
	Fondatin Ecosophique Caonabo (FECA)
	Fondation Macaya pour le Développement Local (FMD)
	Fondation Nouvelle Grand'Anse
	Fondation pour la Protection de la Biodiversité Marine
	Fondation pour le Developpement du Tourisme Alternatif en Haiti
	Fondation Seguin
	Foundation Archbishop Dr. Emmanuel St. Louis
	Groupe d'Action Francophone pour l'Environnement (GAFE)
	Groupe d'Initiatives Pour un Developpement Durable (GID)
	Haiti Biodiversity Fund
	Haiti Survie
	Mouvement d'Appui au Developpement des Entreprises du Secteur Agricole (MADESA)
	Mouvement Haitien pour le Developpement Rural (MHDR)
	Organisation des Groupements pour l'Avenir de Rossignol (OGPAR)
	Organisation Pour la Réhabilitation de l'Environnement (ORE Haiti)
	Organisation pour le Développement de la Forêt des Pins – Mare Rouge (OPDFM)
	Organisation pour le Rehaussement de la Commune des Roseaux (ORCRO)
	Paysages Parcs et Jardins Caraïbe- Haïti (PPJC)
	Promotion Pour le Développement

Country	Organization
	Réseau d'Enseignement Professionnel et d'Interventions Ecologiques (REPIE)
	Revolution Verte d'haiti (RVH)
	Société Audubon Haiti (SAH)
	Sustainable Organic Integrated Livelihoods (SOIL)
	Union des Associations de Pêcheurs de Marigot (UNAPMA)
Jamaica	Alligator Head Foundation
	Alloa Fishermen's Co-operative
	Alps Community Development Committee (ALPS CDC)
	Annotto Bay Fishermen's Co-operative
	BirdLife Jamaica
	Bluefields Bay Fishermen's Friendly Society (BBFFS)
	Bluefields People's Community Association (BPCA)
	Bowden Pen Farmers' Association
	Breds Treasure Beach Foundation
	Buff Bay Local Forest Management Committee
	Calabash Bay Fishermen's Co-operative
	Caribbean Coastal Area Management Foundation (C-CAM)
	CB Facey Foundation
	Clarendon Parish Development Committee Benevolent Society
	Cockpit Country North Local Forest Management Committee
	Cockpit Country South East Local Forest Management Committee
	Cockpit Country South West Local Forest Management Committee
	Constitution Hill Local Forest Management Committee
	Dallas Castle Local Forest Management Committee
	Dolphin Head Local Forest Management Committee
	Environmental Foundation of Jamaica
	Geological Society of Jamaica
	Gillings Gully Fishermen's Co-operative
	Grant Mountain-Hessen Castle Local Forest Management Committee
	Half Moon Bay Fishermen's Co-operative
	Hessen Castle Local Forest Management Committee
	Hope Zoo Preservation Foundation (HZPF)
	Jamaica 4-H Clubs
	Jamaica Agricultural Society
	Jamaica Conservation and Development Trust
	Jamaica Environment Trust (JET)
	Jamaica Fishermen's Co-operative Union
	Jamaica Organic Agriculture Movement (JOAM)
	Jamaican Geographical Society

Country	Organization
	Jeffrey Town Farmers' Association
	JN Foundation
	Kevoy Community Development Institute
	Malvern Science Resource Centre
	Montego Bay Marine Park Trust
	National Conservation Trust Fund of Jamaica (NCTFJ)
	Natural History Society of Jamaica (NHSJ)
	NCB Foundation
	Negril Area Environmental Protection Trust (NEPT)
	Negril Coral Reef Preservation Society (NCRPS)
	Negril Fishermen's Co-operative
	North Eastern Fishermen's Co-operative
	Northern Rio Minho Local Forest Management Committee
	Old Harbour Bay Fishermen's Co-operative
	Oracabessa Fisher's Association
	Oracabessa Foundation
	Pencar Local Forest Management Committee
	Portland Environment Protection Association (PEPA)
	Rocky Point Fishermen's Co-operative
	Sawyers Local Forest Management Committee
	Smithfield Local Forest Management Committee
	South Trelawny Environmental Agency (STEA)
	Spring Bank Local Forest Management Committee
	Spring Dunrobin Local Forest Management Committee
	St. Mary Fishermen's Co-operative
	St. Thomas Environmental Protection Association (STEPA)
	Stephney-John's Vale Local Forest Management Committee
	University of the West Indies - Mona Campus (UWI)
	Westphalia Local Forest Management Committee
	White River Fishermen's Association
	White River Marine Association
	Whitehouse / Whitesands Fishermen's Association
	Windsor Research Centre
Saint Kitts and Nevis	Community Upliftment and Empowerment Team (CUET)
	Fahies Agricultural Women's Cooperative Society (FAWCS)
	Holistic Education Research and Conservation (HERC)
	Indian Castle Fisher Folks Association
	National Fisher-folk Organization of Saint Kitts and Nevis
	Nevis Growers Cooperative Society (NGC)
	Nevis Historical and Conservation Society

Country	Organization
	Sandy Pointers Inspiring Real Improvement Throughout
	St. Christopher and Nevis Conservation Fund (SCNCF)
	St. Christopher Heritage Society (SCHS)
	Saint Kitts and Nevis Agricultural Youth Forum (SKNAYF)
	Saint Kitts Farmers' Co-operative Society Limited
	Saint Kitts Sea Turtle Monitoring Network
	The Sandy Point Agriculture Cooperative Society Ltd (SPACS)
Saint Lucia	Aupcion Charcoal Producers Group
	Belle Vue Farmers' Cooperative
	Black Bay Small Farmers Cooperative Society Ltd
	Canaries Estate Agro Tourism
	Castries Fishermen's Co-operative Society
	Choiseul Fishermen's Cooperative
	Delcer Farmers' Association
	Goodwill Fishermen's Cooperative Society
	Grace Farmers Group
	Gros Islet Fishermen's Association
	Laborie Fishermen's Co-Op Society Ltd
	Praslin Conservation and Development Foundation
	Saint Lucia National Conservation Fund (SLUNCF)
	Saint Lucia National Trust (SLNT)
	Soufriere Marine Management Area (SMMA)
	St. Lucia Fisherfolk Cooperative Society Limited
	St. Lucia Agriculture Forum for Youth (SLAFY)
	St. Lucia Coconut Growers Association
	St. Lucia Network of Rural Women Producers
	Ti Colon/Barre St Joseph Women Farmers
	Women in Agriculture
St Vincent and the Grenadines	Diamond Village Community Heritage Organisation
	National Fisher-folk Co-operative Limited in St. Vincent and the Grenadines
	North Leeward Tourism Association (NLTA)
	Richmond Vale Academy (RVA)
	Rose Hall Cultural and Development Organisation (RHCDO)
	SalvageBlue Inc.
	St. Vincent and the Grenadines Conservation Fund
	St. Vincent and the Grenadines National Fisher Folk Co-Operative Limited
	Sustainable Grenadines Inc. (SusGren)
	Union Island Environmental Attackers Inc.

Country	Organization
Regional (including international organisations with programs in more than one country)	Agrisud International
	Agronomes et Vétérinaires Sans Frontières (AVSF)
	American Bird Conservancy (ABC)
	Asociacion CESAL (CESAL)
	BirdLife International
	Birds Caribbean
	Bonefish Tarpon and Trust
	Caribbean Agricultural Reaserch and Development Institute
	Caribbean Alliance for Sustainable Tourism (CAST)
	Caribbean Farmers Network (CaFAN)
	Caribbean Natural Resources Institute (CANARI)
	Caribbean Network for Integrated Rural Development
	Caribbean Network of Fisherfolk Organisations (CNFO)
	Caribbean Network of Rural Women Producers (CANROP)
	Caribbean Water and Wastewater Association (CWWA)
	Caribbean WaterNet
	Caribbean Youth Environment Network (CYEN)
	Centre for Livelihoods, Ecosystems, Energy, Adaptation and Resilience in the Caribbean Limited
	Centre for Resource Management and Environmental Studies (CERMES)
	Digicel Foundation
	Durrell Wildlife Conservation Trust
	Eastern Caribbean Coalition for Environmental Awareness
	Eastern Caribbean Trading Agriculture and Development Organization (ECTAD)
	Flora and Fauna International (FFI)
	Gulf and Caribbean Fisheries Institute (GCFI)
	International Fund for Animal Welfare (IFAW)
	International Union for Conservation of Nature (IUCN)
	Island Conservation
	Nature Caribé
	Panos Caribbean
	Reef Check
	Sandals Foundation
	Sea Turtle Conservancy
	The Nature Conservancy (TNC)
	Wider Caribbean Sea Turtle Conservation Network
	Windward Islands Farmers Association
	World Resources Institute (WRI)

Appendix 7 Multilateral and Bilateral Funding

Appendix 7.1 Multilateral Funding

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem	Funding Target
European Union (Europe Aid)	Powering Innovations in Civil Society and Enterprises for Sustainability in the Caribbean (PISCES) [Implemented under the global marine biodiversity and forest governance program- FLEGT/REDD+]	*In Caribbean:* Caribbean Natural Resources Institute (CANARI) in partnership with the Caribbean Coastal Area Management Foundation (C-CAM), the Caribbean Network of Fisherfolk Organisations (CNFO), the Environmental Awareness Group (EAG), Fondation pour la Protection de la Biodiversité Marine, and the National Trust	2017-2020	€1,933,815	$2,095,141	Regional CARICOM	Sustainable Livelihoods, Marine Biodiversity	Marine/ Coastal	Civil society
European Union (European Regional Development Fund)	Interreg Caribbean V		2014-2020	€64,292,905 (Total EU funding for all areas under Interreg V Caribbean, not just biodiversity)	$82,006,256	Outermost regions of Guadeloupe, French Guiana, Martinique and Saint Martin, and 40 third countries and OCTs in the Caribbean basin	Management of vulnerable or protected spaces, sustainable tourism development, networking of marine protected areas and conservation of marine mammals	Both terrestrial and marine/ coastal	Primarily government with CSOs playing a role in implementation

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem	Funding Target
European Union (European Development Fund)	Capacity Building related to the Implementation of Multilateral Environmental Agreements (MEAs) in African, Caribbean and Pacific (ACP) Countries	*Coordinating Agency/ Facilitator*: UN Environment *Implementing Agency:* CARICOM Secretariat (Sustainable Development and Environment Programme)	2013-2017 (2nd phase)			Regional CARICOM	General environmental management, including implementation of MEAs related to biodiversity loss and chemical and waste management	Both terrestrial and marine/ coastal	Government only
European Union	Biodiversity and Protected Areas Management (BIOPAMA) Programme	*Global implementing agencies:* International Union for Conservation of Nature (IUCN) and the Joint Research Centre of the European Commission (JRC) *Local implementing agency:* University of the West Indies *Operational implementing agency:* Centre for Resource Management and Environmental Studies	2012-2017 (1st phase) 2017-2023 (2nd phase)	Second phase: €60,000,000 with €20,000,000 ($21,459,227) earmarked for small and medium-sized grants in African Caribbean Pacific countries	$60,005,417	Regional - Caribbean ACP States (CARICOM plus Suriname)	Biodiversity (protected areas data information and mgmt)	Both terrestrial and marine/ coastal	Primarily civil society with government playing a role in implementation

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem	Funding Target
Global Climate Change Alliance+ (GCCA+), including €7 million from the European Commission Financial Stability Fund (FSF) and €600,000 from the Cyprus FSF	Climate Change Adaptation and Sustainable Land Management in the Caribbean	*Implementing Agency:* OECS Secretariat	2015-2020	€10,600,000	$11,312,700	Multi island-OECS	Land Management, Climate change adaptation	Terrestrial	Primarily government with CSOs playing a role in implementation
European Union	Biodiversity Information for Development (BID)	*Implementing Agency:* Global Biodiversity Information Facility (GBIF)	2017-2018	€ 67,480	$72,017	Barbados, Haiti, Jamaica	Information for biodiversity conservation with a focus on protected areas, threatened species and invasive alien species	Both terrestrial and marine/ coastal	Government and civil society
European Union	Strengthening of the Biological Corridor in the Caribbean	*Implementing Agency:* UN Environment	2017-2021 (Phase II)	€ 3,480,000	$3,770,314	Multi island - Direct: Cuba, Dominican Republic, Haiti. Indirect Puerto Rico, Guadeloupe, Martinique	Biodiversity conservation, environmental rehabilitation and sustainable livelihoods	Marine/ Coastal	Primarily government with CSOs playing a role in implementation

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem	Funding Target
European Union (DG DEVCO)	BEST 2.0 Programme	*Implementing Agency:* IUCN at a global level; SPAW Regional Activity Center in collaboration with the Natural Reserve of St Martin at regional level	2015-2019	Between 2015 and 2017, sixteen projects were funded for a total of €2,300,000	$2,454,642	EU OCTs	Conservation of biodiversity and sustainable use of ecosystem services, including ecosystem-based approaches to climate change adaptation and mitigation	Both terrestrial and marine/ coastal	Government and civil society
European Union	#GE4U: Transformation Towards an Inclusive Green Economy in the Caribbean [Implemented under the global project Creating Enabling Policy Conditions for the Transformation Towards an Inclusive Green Economy]	*Implementing Agency for Caribbean:* Caribbean Natural Resources Institute (CANARI)		€305,499	$287,169	Eastern Caribbean	Integration of civil society in developing and implementing green economy policies	Both terrestrial and marine/ coastal	Civil society
Global Environment Facility (GEF)	Small Grants Programme	*Implementing Agency:* UNDP *Executing Agency:* United Nations Office for Project Services (UNOPS)	Ongoing	Support for projects between 2010 - 2017	$8,438,917	Regional incl DR and Haiti	Biodiversity, climate change, land degradation, sustainable forest management and international waters	Both terrestrial and marine/ coastal	Civil society

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem	Funding Target
Global Environment Facility (GEF)	Caribbean Regional Oceanscape Project	*Implementing Agency:* World Bank *Executing Agency:* OECS Secretariat	2017-2021		$6,300,000	Multi island-OECS	Ocean governance and coastal and marine geospatial planning	Marine/ Coastal	Government
Global Environment Facility (GEF)	Pine Islands - Forest/ Mangrove Innovation and Integration (Grand Bahama, New Providence, Abaco and Andros)	*Implementing Agency:* UN Environment *Executing Agencies:* BEST Commission with Bahamas Agriculture and Industrial Corporation, Bahamas National GIS Centre, Bahamas National Trust, Department of Lands and Surveys, Forestry Unit, Department of Physical Planning, and Town Planning Committee.	2015-2019		$2,853,425	The Bahamas	Sustainable forest management, sustainable livelihoods, enhancing ecosystem services and mainstreaming values into planning	Terrestrial	Primarily government, with CSOs playing a role in implementation
Global Environment Facility (GEF)	Sustainable Ecosystems by Strengthening the Effectiveness of Dominica's Protected Areas System	*Implementing Agency:* UNDP *Executing Agency:* United Nations Office for Project Services (UNOPS).	2014-2018		$1,707,306	Dominica	Terrestrial biodiversity conservation through protected areas	Terrestrial	Primarily government, with CSOs playing a role in implementation
Global Environment Facility (GEF)	Conserving Biodiversity in Coastal Areas Threatened by Rapid Tourism and Physical Infrastructure Development	*Implementing Agency:* UNDP *Executing Agencies:* Ministry of Environment and Natural Resources; Ministry of Tourism	2015-2020		$2,838,792	Dominican Republic	Biodiversity mainstreaming in tourism sectoral framework	Marine/ Coastal	Primarily government, with CSOs playing a role in implementation

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem	Funding Target
Global Environment Facility (GEF)	Conserving Biodiversity and Reducing Habitat Degradation in Protected Areas and their Areas of Influence	*Implementing Agency:* UNDP *Executing Agency:* Ministry of Sustainable Development - Department of Physical Planning and Environment	2015-2018		$3,371,630	Saint Kitts	Biodiversity conservation through protected areas	Terrestrial	Primarily government, with CSOs playing a role in implementation
Global Environment Facility (GEF)	Integrating Water, Land and Ecosystems Management in Caribbean Small Island Developing States (IWEco)	*Implementing Agency:* UNEP *Executing Agencies:* CEHI; CAR/RCU; CAR/RCU LBS Regional Activity Centres–MA and CIMAB	2016-2021		$20,722,571	Antigua and Barbuda, Barbados, Cuba, Dominican Republic, Grenada, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines	Integrated approach to water, land and ecosystems services management to contribute to global water and sanitation targets and improved ecosystem functioning	Both terrestrial and marine/ coastal	Primarily government, with CSOs playing a role in implementation
Global Environment Facility (GEF)	Integrated Management of the Yallahs River and Hope River Watersheds	*Implementing Agency:* Inter-American Development Bank (IDB) *Executing Agency:* National Environment and Planning Agency (NEPA)	2014-2018		$3,909,441	Jamaica	Watershed management, sustainable land management and integrated landscape management	Terrestrial	Primarily government, with CSOs playing a role in implementation

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem	Funding Target
Global Environment Facility (GEF)	Creation of Additional Biosafety Capacities that Lead to A Full Implementation of the Cartagena Protocol on Biosafety in Cuba	*Implementing Agency:* UNEP *Executing Agency:* National Centre of Biological Safety	2018-2023		$1,826,484	Cuba	Implementation of the Cartagena Protocol on Biosafety through the creation of additional capacities in the areas of monitoring, detection, liability and redress, and education	Both terrestrial and marine/ coastal	Government
Global Environment Facility (GEF)	Incorporating Multiple Environmental Considerations and their Economic Implications into the Management of Landscapes Forests and Production Sectors in Cuba	*Implementing Agency:* UNDP *Executing Agencies:* Ministry of Science, Technology and Environment; National Centre for Protected Areas	2018-2024		$9,580,365	Cuba	Integrated economic valuation of ecosystem goods and services, as a tool for decision-making at different levels	Terrestrial	Government
Global Environment Facility (GEF)	Ecosystem Approach to Haiti Cote Sud	*Implementing Agency:* UNEP *Executing Agencies:* Ministry of Environment; UNEP; PADI; ORE; AyitiKa	2015-2020		$6,216,000	Haiti	Increasing resilience to climate change risks and decreasing disaster risk using an ecosystem management approach	Both terrestrial and marine/ coastal	Primarily government, with CSOs playing a role in implementation

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem	Funding Target
Global Environment Facility (GEF)	Preventing COSTS of Invasive Alien Species (IAS) in Barbados and the OECS Countries	*Implementing Agency:* UNEP *Executing Agencies:* Ministry of Health and the Environment (Antigua and Barbuda); Ministry of Agriculture, Food Fisheries and Water Resource Management (Barbados); Ministry of Sustainable Development (Saint Kitts and Nevis); CABI	2018-2021		$3,747,945	Regional incl Antigua and Barbuda, Barbados, Dominica, Grenada, Saint Kitts and Nevis, Saint Lucia, and Saint Vincent and Grenadines	Prevention, detection, control and management frameworks for IAS, focusing on the highest risk invasion pathways	Terrestrial	Primarily government, with CSOs playing a role in implementation
Global Environment Facility (GEF)	Integrated Ecosystem Management and Restoration of Forests on the South East Coast of Saint Lucia	*Implementing Agency:* UNEP *Executing Agency:* Ministry of Sustainable Development, Energy, Science and Technology	2018-2023		$4,428,145	Saint Lucia	Enabling sustainable economic development by maintaining sustainable livelihoods and healthy ecosystems	Terrestrial	Primarily government, with CSOs playing a role in implementation
Global Environment Facility (GEF)	Sustainable Pathways - Protected Areas and Renewable Energy	*Implementing Agency:* UNEP *Executing Agency:* Environment Division, Ministry of Agriculture, Lands, Housing and the Environment	2015-2020		$2,639,726	Antigua and Barbuda	Enhanced financing and management of protected areas through innovations in renewable energy capacity and arrangements	Terrestrial	Primarily government, with CSOs playing a role in implementation

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem	Funding Target
Global Environment Facility (GEF)	Strengthening Access and Benefit Sharing (ABS)	*Implementing Agency:* UNEP *Executing Agency:* BEST Commission, Ministry of Housing and Environment	2016-2020		$1,900,000	Bahamas	Creation and application of the enabling conditions for fair and equitable access and benefit sharing	Terrestrial	Primarily government, with CSOs playing a role in implementation
Global Environment Facility (GEF)	A Landscape Approach to the Conservation of Threatened Mountain Ecosystems	*Implementing Agency:* UNDP *Executing Agencies:* Ministry of Science, Technology and Environment; Ministry of Agriculture	2014-2022		$7,481,944	Cuba	Strengthen protected area management effectiveness through a landscape approach to management	Terrestrial	Primarily government, with CSOs playing a role in implementation
Global Environment Facility (GEF)	Implementing a "Ridge to Reef" Approach to Protecting Biodiversity and Ecosystem Functions within and Around Protected Areas	*Implementing Agency:* UNDP *Executing Agencies:* Ministry of Agriculture; Ministry of Environment	2015-2020		$3,031,666	Grenada	Adoption of an integrated “ridge to reef” approach that increases protected area management effectiveness	Both terrestrial and marine/ coastal	Primarily government, with CSOs playing a role in implementation
Global Environment Facility (GEF)	Increasing Resilience of Ecosystems and Vulnerable Communities to CC and Anthropic Threats Through a Ridge to Reef Approach to BD Conservation and Watershed Management	*Implementing Agency:* UNDP *Executing Agency:* Ministry of Environment	2015-2021		$9,135,068	Haiti	Enhance the resilience of vulnerable ecosystems to the impacts of climate change in protected areas and surrounding landscapes	Both terrestrial and marine/ coastal	Primarily government, with CSOs playing a role in implementation

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem	Funding Target
Global Environment Facility (GEF)	Managing the Human-Biodiversity Interface in the Southern Marine Protected Areas of Haiti - MHBI	*Implementing Agency:* IDB *Executing Agency:* Ministry of Environment	2018-2022		$1,826,485	Haiti	Improvement of fisheries management in marine protected areas; and restoration of critical ecosystems	Marine/ coastal	Primarily government, with CSOs playing a role in implementation
Global Environment Facility (GEF)	Advancing the Nagoya Protocol in Countries of the Caribbean Region	*Implementing Agency:* UNEP *Executing Agency:* IUCN	2015-2019		$1,826,000	Regional incl Antigua and Barbuda, Barbados, Grenada, Jamaica, Saint Kitts and Nevis, and Saint Lucia	Uptake of the Nagoya Protocol and implementation of key measures	Both terrestrial and marine/ coastal	Civil society
Global Environment Facility (GEF)	Iyanola - Natural Resource Management of the NE Coast	*Implementing Agency:* UNEP *Executing Agency:* Ministry of Sustainable Development, Energy, Science and Technology	2015-2019		$2,331,818	Saint Lucia	Improved management effectiveness and sustainable use of natural resources	Both terrestrial and marine/ coastal	Primarily government, with CSOs playing a role in implementation
Global Environment Facility (GEF)	Implementing Land, Water and Ecosystem Management	*Implementing Agency:* UNEP *Executing Agency:* BEST Comission, Ministry of Housing and Environment	2014-2017		$863,242	Bahamas	Integrated land, water and ecosystem management	Both terrestrial and marine/ coastal	Primarily government, with CSOs playing a role in implementation

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem	Funding Target
Global Environment Facility (GEF)	Advancing Conservation in the Countries of the Organisation of Eastern Caribbean States (OECS)	*Implementing Agency:* UNEP *Executing Agency:* Conservation Council of Nations	2018-2023		$1,866,700	Regional incl Antigua and Barbuda, Dominica, Grenada, and Saint Lucia	Enhanced political will and capacity building for improved management of marine protected areas, marine management areas and protected areas	Both terrestrial and marine/ coastal	Primarily government, with CSOs playing a role in implementation
Global Environment Facility (GEF)	Agricultural Biodiversity Conservation and Man and Biosphere Reserves in Cuba: Bridging Managed and Natural Landscapes	*Implementing Agency:* UNEP *Executing Agencies:* Instituto de Investigaciones Fundamentales en Agricultura Tropical; Sistema Nacional de Areas Protegidas; Bioversity International	2013-2018		$1,368,182	Cuba	Mainstreaming agricultural biodiversity into the management of Man and Biosphere Reserves	Terrestrial	Primarily government, with CSOs playing a role in implementation
Global Environment Facility (GEF)	Strengthening the Operational and Financial Sustainability of the National Protected Area System	*Implementing Agency:* UNDP *Executing Agencies:* National Environment and Planning Agency; Forestry Department; Jamaica National Heritage Trust; Ministry of Health and Environment; The Nature Conservancy	2010-2017		$2,770,585	Jamaica	Operational and financial sustainability for the national protected area system	Both terrestrial and marine/ coastal	Primarily government, with CSOs playing a role in implementation

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem	Funding Target
Global Environment Facility (GEF)	BS Regional Project for Implementing National Biosafety Frameworks in the Caribbean Sub-region - under the GEF Biosafety Program	*Implementing Agency:* UNEP *Executing Agencies:* University of West Indies (UWI) with other regional collaborators and National Executing Agencies	2011-2018		$5,972,493	Regional incl Antigua and Barbuda, Barbados, Bahamas, Belize, Dominica, Grenada, Saint Kitts and Nevis, Saint Lucia, and Saint Vincent and Grenadines	Implementation of effective, operable, transparent and sustainable National Biosafety Frameworks	Both terrestrial and marine/ coastal	Civil society
Global Environment Facility (GEF)	The Path to 2020 - Antigua and Barbuda	*Implementing Agency:* UNEP *Executing Agency:* Ministry of Health and the Environment	2019-2022		$2,729,153	Antigua and Barbuda	Protection and sustainable use of biodiversity and protected areas	Both terrestrial and marine/ coastal	Primarily government, with CSOs playing a role in implementation
Global Environment Facility (GEF)	Meeting the Challenge of 2020 in The Bahamas	*Implementing Agency:* UNEP *Executing Agencies:* BEST Commission; Department of Marine Resources; Bahamas National Trust; The Nature Conservancy; Department of Agriculture	2019-2024		$6,243,004	The Bahamas	Strengthened management of marine protected areas and integration into broader landscape planning	Both terrestrial and marine/ coastal	Primarily government, with CSOs playing a role in implementation

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem	Funding Target
Global Environment Facility (GEF)	Introduction of New Farming Methods for the Conservation and Sustainable Use of Biodiversity, including Plant and Animal Genetic Resources, in Production Landscapes in Selected Areas of Cuba	*Implementing Agency:* FAO *Executing Agency:* Ministry of Agriculture	2019-2023		$2,973,288	Cuba	Conservation and sustainable use of agro-biodiversity through the introduction of sustainable agricultural production and the conservation of plant and animal genetic resources	Terrestrial	Government
Global Environment Facility (GEF)	Mainstreaming Conservation of Biodiversity and Ecosystem Services in Productive Landscapes in Threatened Forested Mountainous Areas	*Implementing Agency:* UNDP *Executing Agency:* Ministry of Environment and Natural Resources	2019-2025		$8,176,165	Dominican Republic	Mainstreaming biodiversity and ecosystem services into public policies and practices	Terrestrial	Government
Global Environment Facility (GEF)	Climate Resilient Agriculture for Integrated Landscape Management	*Implementing Agency:* UNDP *Executing Agency:* Ministry of Agriculture, Lands, Forestry, Fisheries and Environment	2019-2023		$3,659,775	Grenada	Integrated agroecosystem management through mainstreaming biodiversity into production landscapes and increasing climate resilience	Terrestrial	Primarily government, with CSOs playing a role in implementation

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem	Funding Target
Global Environment Facility (GEF)	Sustainable Management of Wooded Production Landscapes for Biodiversity Conservation	*Implementing Agencies:* FAO; UNDP *Executing Agency:* Ministry of Environment	2019-2026		$6,186,964	Haiti	Integrated and sustainable management of wooded production landscapes	Terrestrial	Government
Global Environment Facility (GEF)	Conserving Biodiversity and Reducing Land Degradation Using an Integrated Landscape Approach	*Implementing Agency:* UNDP *Executing Agency:* Natural Environmental and Planning Agency	2019-2025		$6,210,046	Jamaica	Mainstreaming biodiversity into plans, policies and practices for productive landscapes and key sectors	Terrestrial	Government
Global Environment Facility (GEF)	Improving Environmental Management through Sustainable Land Management in St. Kitts and Nevis	*Implementing Agency:* UNEP *Executing Agency:* Ministry of Sustainable Development	2019-2024		$3,015,982	Saint Kitts and Nevis	Transformation of degraded forest landscapes into biodiversity and climate-friendly areas of sustainable production	Both terrestrial and marine/ coastal	Primarily government, with CSOs playing a role in implementation
Global Environment Facility (GEF)	Conserving Biodiversity and Reducing Land Degradation Using a Ridge-to-Reef Approach	*Implementing Agency:* UNDP *Executing Agency:* Ministry of Agriculture, Rural Transformation, Forestry, Fisheries and Industry	2019-202		$3,757,102	Saint Vincent and Grenadines	Expansion and strengthening of protected area system with SLM measures integrated in a ridge-to-reef approach	Both terrestrial and marine/ coastal	Primarily government, with CSOs playing a role in implementation
Japan Special Fund Poverty Reduction Program	Community-based Conch Management in the Family Islands	*Implementing Agency:* IDB *Executing Agency:* Bahamas National Trust	2017-2020		$500,000	The Bahamas	Coastal zone management, coastal ecosystems and livelihoods resilience	Marine/ Coastal	Civil society

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem	Funding Target
Inter-American Development Bank (IDB)	Development of Sustainable Islands Initiative	*Executing Agency:* IDB	2017-2019		$995,000	Regional excl DR and Haiti	Mainstream climate resilient activities into policies and programs across sectors, under a Blue Economy	Marine/ Coastal	Government
Inter-American Development Bank (IDB)	Measuring and Monitoring Ecosystem Services in Protected Areas of the Southern Peninsula of Haiti	*Executing Agency:* IDB	2017-2019		$250,000	Haiti	Protected area management, ecosystem services	Both terrestrial and marine/ coastal	Primarily government, with CSOs playing a role in implementation
Inter-American Development Bank (IDB)	Breaking Ground: Jamaica's First Payments for Ecosystem Services Scheme	*Executing Agency:* Government of Jamaica, National Environment and Planning Agency;	2017-2019		$300,000	Jamaica	Improve the provision of critical ecosystem services (e.g. water quality, biodiversity preservation, erosion control) through a payment for ecosystem services (PES) scheme in the Hope and Yallahs River watersheds	Terrestrial	Primarily government, with CSOs playing a role in implementation

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem	Funding Target
Inter-American Development Bank (IDB)	Natural capital study for improved coastal resilience in the Caribbean	*Executing Agency:* IDB	2016-2018 (18 mths)		$300,000	Regional incl DR and Haiti	Improved coastal resilience in the wider Caribbean Region through increased understanding of the factors that enable the integration of natural capital in coastal planning and development	Marine/ Coastal	Government
Inter-American Development Bank (IDB)	Climate Proofing of Agriculture in the Center-Artibonite Loop Area	*Executing Agency:* Ministry of Agriculture, Natural Resources and Rural Development	2014		$4,500,000	Haiti	Agriculture, climate change, improve critical ecosystem services, such as soil and water retention capacities of catchments, in order to prevent flooding and losses of soil fertility	Terrestrial	Primarily government, with CSOs playing a role in implementation

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem	Funding Target
Inter-American Development Bank (IDB)	Assessing the Business Case for Investments in Biodiversity, Ecosystem Services	*Executing Agency:* IDB	2015-2017		$500,000	Regional incl DR and Haiti	Apply a defined Ecosystem Services Appraisal methodology to prospective and current clients in order to identify high potential investment opportunities, which clients will implement with Inter-American Development Bank (IDB) financing when practical	Both terrestrial and marine/ coastal	Other
Inter-American Development Bank (IDB)	Greening food supply chains to increase competitiveness and conserve coastal ecosystems	*Executing Agency:* Asociación de Productores Agropecuarios de la Frontera, Inc. (AgroFrontera)	2015-2018		$354,500	Dominican Republic	Rice and fish and seafood sectors, which share freshwater resources in coastal areas of province of Montecristi	Marine/ Coastal	Primarily civil society, with government playing a role in implementation
Inter-American Development Bank (IDB)	Strengthening Bird-based Tourism as a Conservation and Sustainable Development Tool	*Implementing Agency:* National Audubon Society. *Sub-implementing agency:* Bahamas National Trust	2013-2016		$1,747,331	The Bahamas [also in Belize, Guatemala and Paraguay]	Eco-tourism, conservation, citizen-based science	Terrestrial	Civil society

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem	Funding Target
Inter-American Development Bank (IDB)	Sustainable Management Upper Watersheds South Western Haiti-Macaya National Park	*Implementing Agency:* Ministry of Environment	2013-2017		$9,000,000	Haiti	Support reforestation and implementing a carbon stock and sequestration monitoring system to enhance the understanding of impacts on carbon sequestration and diminished emissions attributable to changes in land use systems and vegetation/ forest cover	Terrestrial	Primarily government, with CSOs playing a role in implementation

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem	Funding Target
Inter-American Development Bank (IDB)	Sustainable Land Management of the Upper Watersheds of South Western Haiti	*Implementing Agency:* Ministry of Agriculture, Natural Resources and Rural Development	2012-201?		$3,836,364	Haiti	Integration of sustainable land and forest management practices at the watershed level. Forest restoration and implementing a carbon stuck and sequestration monitoring system to enhance the understanding of impacts on carbon sequestration and emissions avoided caused by changes in land use systems and vegetation/ forest cover	Terrestrial	Primarily government, with CSOs playing a role in implementation
Inter-American Development Bank (IDB)	Adaptation Program and Financing Mechanisms for the Pilot Program for Climate Resilience	*Executing Agency:* Ministry of Water, Land, Environment and Climate Change; with coordination by the Planning Institute of Jamaica (PIOJ)	June - Sept 2014		$7,895,970	Jamaica	Increase Jamaica's resilience to climate change, through enhancing adaptive capacity across priority sectors	Both terrestrial and marine/ coastal	Primarily government, with CSOs playing a role in implementation

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem	Funding Target
Inter-American Development Bank (IDB)	Communications and outreach for the Biodiversity and Ecosystem Services Program (Belize; Brazil; Peru; Paraguay; Barbados; The Bahamas, among others)	*Implementing Agency:* Inter-American Development Bank (IDB)	May 2015-2017 (Duration 18 months)		$250,000	LAC region with Caribbean component	Communicate and disseminate the Special Program for Biodiversity and Ecosystem Services (the BIO Program) on-going activities and their relevance, as well as pioneering knowledge and research generated with its support.	Both terrestrial and marine/ coastal	Other
World Bank	Grenada: Regional Disaster Vulnerability Reduction Project.(Parent Project: Regional Disaster Vulnerability Reduction APL1 - Grenada and St. Vincent and the Grenadines-P117871)	*Implementing Agency:* Ministry of Finance, Planning, Economy, Energy and Co-operatives	2015-2018		$5,000,000	Grenada	Resilience and adaptation, including a component to restore and improve forest resources.	Terrestrial	Primarily government, with CSOs playing a role in implementation

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem	Funding Target
World Bank	Grenada: First Fiscal Resilience and Blue Growth Development Policy Credit	*Implementing Agency:* Government of Grenada Ministry of Finance and Energy	2018-2019		$30,000,000 (IDA Credit)	Grenada	Development policy credit to support Grenada's transition to a Blue Economy by strengthing marine and coastal management, marine ecosystem health, and climate resilience.	Marine/ Coastal	Government
World Bank	Resilient Productive Landscapes Project for Haiti		2018-2023		$15,000,000	Haiti	Resilience-enhancing agricultural and landscape management practices in selected sub-watersheds, including support for the sustainable landscape management and watershed management	Terrestrial	Primarily government, with CSOs playing a role in implementation
World Bank	Promoting Community-based Climate Resilience in the Fisheries Sector	*Implementing Agency:* Ministry of Industry, Commerce, Agriculture and Fisheries	2018-2023		$4,875,000	Jamaica	Protect marine and coastal ecosystems and build resilience to climate change in the fisheries sector	Marine/ Coastal	Primarily government, with CSOs playing a role in implementation

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem	Funding Target
World Bank	Dominican Republic. FCPF REDD+ Readiness Preparation Project	*Implementing Agency:* Ministry of Environment and Natural Resources	Pipeline		$3,800,000	Dominican Republic	Forestry. Provide the foundation for the country's participation in any future REDD+ mechanism under the UNFCCC that it may consider	Terrestrial	Government

Appendix 7.2 Bilateral Funding

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem
German Federal Ministry for Economic Cooperation and Development (BMZ)	Increased capacity for ecosystem adaptation in biosphere reserves close to the borders of Haiti and th Dominican Republic (CAReBios project)	*Implementing and Executing Agency:* GIZ	2014-2018	€4,000,000	$5,102,041	Dominican Republic	Biodiversity (Protected areas)	Terrestrial
German Federal Ministry for Economic Cooperation and Development (BMZ)	Desarrollo de la Alianza Meso-americana por la Biodiversidad (DABio)	*Implementing and Executing Agency:* GIZ	2014-2018	€4,500,000	$5,739,796	Central America and Dominican Republic	Biodiversity, including sustainable financing	Both Terrestrial and Marine/ Coastal

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem
German Federal Ministry for Economic Cooperation and Development - BMZ)	Caribbean Aqua Terrestrial Solutions Programme (CATS)	*Implementing Agencies:* CARPHA and GIZ	2013-2017	€7,500,000	$9,578,544	Belize, Dominica, Grenada, Guyana, Jamaica, Saint Kitts and Nevis, Saint Lucia, St Vincent and the Grenadines	Climate change adaptation, Biodiversity management and conservation The terrestrial component targets local communities and various CSOs, e.g. for farmers, fishermen, employees in the tourism industry and small and medium-sized business owners. The Marine and coastal component is more focused on Management of MPAs. local communities	Both Terrestrial and Marine/ Coastal
German Federal Ministry for Economic Cooperation and Development (BMZ)	Coastal Protection for Climate Change Adaptation in the Small Island States in the Caribbean	Implementing Agencies: Caribbean Community Climate Change Centre (CCCCC) / CARICOM	2014-2018			Saint Lucia, Grenada, St. Vincent and the Grenadines and Jamaica	Climate change, Marine and coastal management. Supporting ecosystem services of coral reefs and mangroves to help reduce the negative impact of climate change on coastal communities.	Marine/ Coastal

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem
German Corporation for International Cooperation (GIZ)	Integrated Climate Change Adaptation Strategies	*Implementing Agencies:* GIZ and UNDP *Executing Agency:* Ministry of Education, Human Resource Development and the Environment of Grenada	2013-2018			Grenada	Climate change adaptation, integrated water resources and coastal management The project includes these components: • Mainstream climate change and adaptation issues in national planning processes. • Support integrated water resource and coastal zone management. • Promote community-based climate change adaptation.	Both Terrestrial and Marine/ Coastal
German Corporation for International Cooperation (GIZ)	Adapting to climate change in the Caribbean to conserve natural resources and diversify farming and forest management (Energy and Climate Fund)	*Implementing Agency:* CARICOM Secretariat	2012-2017			Belize, Dominica, Grenada, Guyana, Jamaica, Saint Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines	Climate change - improvement of the adaptation of farmland and forest management to the impacts of climate change Energy	Terrestrial
German Corporation for International Cooperation (GIZ)	Management of coastal resources and conservation of marine biodiversity in the Caribbean	*Implementing Agency*: CARICOM Secretariat	2012-2017			Belize, Dominica, Grenada, Guyana, Jamaica, Saint Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines	Managing the impacts of climate change, on biodiversity, marine and coastal protected areas and their ecosystem services Gender equality	Marine/ Coastal

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem
German Federal Ministry for Economic Cooperation and Development (BMZ) and the German Development Bank (KfW)	Blue Action Fund Small Grant Program	*Implementing Agency:* Blue Action Fund First call for proposals closed in August 2017		The current expectation is that Blue Action Fund will award four to six grants from this call with a total volume of EUR 8-12 million	$8,700,000 – 13,000,000	Wider Caribbean Region	Marine and coastal conservation Blue Action finances individual grants to selected marine/coastal conservation projects in marine protected areas (MPAs) and their buffer zones, focusing on the most sensitive coastal waters of Africa, Latin America and Asia/Pacific.	Marine/ Coastal
The German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB)	Climate Resilient Eastern Caribbean Marine Managed Areas Network (ECMMAN) project	*Coordinator:* The Nature Conservancy (TNC)	2013 – 2017	EUR 4 million including EUR 1,176 million for CaMPAM-ECMMAN Small Grant Program	$2,250,000	Saint Kitts and Nevis, Antigua and Barbuda, Dominica, Saint Lucia, St. Vincent and the Grenadines and Grenada	Caribbean Marine Protected Area Management Network and Forum (CaMPAM) is in charge of one component of the ECMMAN project: Strengthening the existing marine managed areas and supporting the establishment of new ones in the 6 participating countries. This is to be accomplished using one of CaMPAM major tools: the Small Grant Program.	Coastal/ Marine

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem
Government of Italy, Italian Agency for Cooperation and Development (IACD); UN Environment	Caribbean Environment Programme (UNEP-CEP)	*Implementing Agency:* UN Environment - Caribbean Environment Programme (UNEP-CEP)	2015 – 2018		$1,836,739	Countries of the Wider Caribbean region including all CEPF countries	Developing capacities and information systems to be used by government and non-government agencies to assist decision making for the planning and managing of coastal resources through an ecosystem-based management approach	Marine/ Coastal
Government of Japan*	Japan-Caribbean Climate Change Partnership	*Implementing Agency:* United Nations Development Programme (UNDP)	2015-2018		$15,000,000	Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St. Vincent and the Grenadines, Suriname	Sustainable development, Climate change adaptation	
Korean Oversees Cooperation Agency (KOICA); Government of Republic of Turkey and Government of the Kingdom of the Netherlands and led by the Cuban Ministry of Science, Technology and Environment of Cuba	Sandy Shorelines Project: Impact Assessment of Climate Change on the sandy shorelines of the Caribbean: alternatives for its control and resilience	The Caribbean Sea Commission within the Association of Caribbean States	2017-2020		$4 million	ACS countries (including all CEPF countries)	Coastal erosion; Climate change	Marine/ Coastal

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem
UK Government, Department for Environment, Food and Rural Affairs and Foreign and Commonwealth Office	Darwin Initiative Grants Scheme	*Implementing Agency:* Darwin Secretariat at the Department for Environment, Food and Rural Affairs.	On-going calls	Grants range from £50,000 to £430,000, with an average project award of around £300,000		Developing countries and UK OTs	Over-exploitation Invasive species Habitat degradation and loss Climate change mitigation and adaptation Pollution	Terrestrial and Marine/ Coastal
United States Agency for International Development (USAID), The Nature Conservancy (TNC)	Caribbean Marine Biodiversity Project	*Implementing Agency:* The Nature Conservancy *Other contractors*: Government of Jamaica, Caribbean Coastal Area Management Foundation (C-CAM) 2014-2019			$12.5 million ($10 million from USAID, 2.5 million from TNC)	Jamaica	Reducing the threats to marine-coastal biodiversity in priority areas in the Caribbean with the following objectives: -achieve sustained biodiversity conservation -maintain critical ecosystem services - improve human well-being for communities adjacent to marine managed areas.	Coastal/ Marine
United States Agency for International Development (USAID)	The Climate Change Adaptation Program (CCAP)	*Implementing Agency:* Caribbean Community Climate Change Centre (CCCCC)	2016-2020		$25,600,000	Antigua and Barbuda, Barbados, Dominica, Grenada, Saint Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines, plus Guyana, Suriname, and Trinidad and Tobago	Climate change adaptation - Livelihoods Reducing risks to "human and natural assets resulting from climate vulnerability" and supporting "efforts to tackle climate change induced challenges in Eastern and Southern Caribbean countries"	Terrestrial and Marine/ Coastal

Donor	Program/ Project	Implementation Arrangements	Duration	Funding (original currency)	Funding (US$)	Geographic Scope	Focus	Ecosystem
United States Agency for International Development (USAID)	USAID Reforestation Project	*Implementing Agency:* Chemonics International			$40,000,000	Haiti	Reforestation, agroforestry, watershed management	Terrestrial
United States Agency for International Development (USAID)	USFWS Western Hemisphere Program - Caribbean Regional Program	*Implementing Agency:* U.S. Fish and Wildlife Service	2018		$1,500,000	Regional	Small grant component will provide support in the areas of species conservation, wildlife law enforcement, management of MPAs, community engagement in marine, coastal and terrestrial ecosystems.	Terrestrial and Marine/ Coastal
United States Agency for International Development (USAID)	Local Capacity for Local Solutions	*Implementing Agency:* RTI International *Sub-implementing Agency:* Caribbean Policy Development Centre	2017-2020		$8,000,000	Eastern Caribbean		

Appendix 8 KBA Prioritization Methodology

This appendix describes the methodology used to select the priority KBAs for CEPF investment. The results of the scoring and ranking exercise can be found in Appendices 8.1 and 8.2 at the end.

A two-step prioritization process was used to identify and select priority KBAs for CEPF investment in the eligible countries. The first step entailed the identification of highest biological priority KBAs; the second involved the evaluation of these sites against socio-economic criteria and potential for CEPF investment to add value.

Identification of Highest Biological Priority KBAs

The identification of highest biological priority KBAs was based on the combination of scores for the following two measures: (i) vulnerability and irreplaceability; and (ii) diversity of threatened species.

Calculation of the Vulnerability and Irreplaceability Score

First, each KBA was assigned a vulnerability value based on the presence[64]of threatened species. Vulnerability values are linked to IUCN Red List threat status, as shown below. The greater the threat status, the higher the vulnerability value in the ranking.

Threat Status	**Vulnerability Value**
Critically Endangered	Extreme
Endangered	High
Vulnerable	Medium
Other[65]	Low

A KBA can be triggered by more than one threatened species but the species with the highest threat status was used to determine the vulnerability value of the KBA.

Second, irreplaceability values were assigned based on the number of sites where qualifying species trigger the KBA criteria, as shown in the following table:

Number of KBAs where Species Triggers the KBA Criteria	**Irreplaceability Value**
1 site (A1e criterion)	Extreme
1 site	Very High
2- 5 sites	High
6-10 sites	Medium
>10 sites	Low

[64] Only species triggering KBA criteria were utilized.
[65] Other includes species such as non-threatened congregatory species.

Note that there is a difference between a species triggering the A1e criterion and a species triggering the KBA criteria for one site only. In the former case, the site regularly holds effectively the entire global population of a Critically Endangered or Endangered species, which in practice means that the KBA also qualifies as an Alliance for Zero Extinction (AZE) site. In the latter case, there are other sites with populations of the species outside that KBA but those sites have not been confirmed as KBAs.

A KBA can have more than one species triggering the KBA criteria but the species with the highest irreplaceability value determines the overall irreplaceability value for the KBA.

After vulnerability and irreplaceability values had been assigned individually, combined vulnerability and irreplaceability scores were assigned based on the following matrix:

Scoring values for Vulnerability and Irreplaceability			**Irreplaceability value**				
			A1e	**1 site**	**2-5 sites**	**6-10 sites**	**>10 sites**
			Extreme	**Very high**	**High**	**Medium**	**Low**
Vulnerability value	**Critically Endangered**	**Extreme**	5	4	3	2	2
	Endangered	**High**	5	4	3	2	2
	Vulnerable	**Medium**	n/a	3	2	1	1
	Other	**Low**	n/a	3	2	1	1

Calculation of the Outstanding Diversity of Threatened Species Score

A value was assigned to each threatened species triggering the KBA criteria as follows:

Species Threat Status	**Value**
Critically Endangered	6
Endangered	3
Vulnerable	1

The purpose of using different values for each threat status is to recognize the varying levels of risk of extinction of the species: thus, a site with a CR species receives a higher value than a site with an EN or VU species. A threatened species value for each KBA was then calculated by adding all species values together. Values obtained for the KBAs ranged from 0 (KBAs with no threatened species) to 121.

The threatened species values were intended to be comparable to the vulnerability and irreplaceability values calculated previously, so they were converted into a ranked score from 1 to 4 according to the following table:

Value Compared to Quartile	**Outstanding Diversity of Threatened Species Score**
Value < Q1	1
Value >Q1 and <Q2	2
Value >Q2 and <Q3	3
Value >Q3	4

A ranked score was assigned based the quartile in which the Outstanding Diversity of Threatened Species value falls. Because of the high level of endemicity of many species and the biogeographical differences between the islands, quartiles[66] were defined separately for The Bahamas, the Dominican Republic, Haiti, Jamaica and the Lesser Antilles. The quartiles used are shown in the table below:

Country	Quartiles values by country/sub-region		
	Quartile 1	Quartile 2	Quartile 3
The Bahamas	2.25	3.5	6
Dominican Republic	3	6	22
Haiti	3	9.5	17.75
Jamaica	1	4.5	23
Lesser Antilles	3	6	10

For example, any site with an Outstanding Diversity of Threatened Species value over 23 in Jamaica received a ranked score of 4; meaning that site was in the top 25 percent of the KBAs ranked by raw score.

Final Biodiversity Score and Selection of Priority KBAs

An overall biodiversity score for each KBA was calculated by adding the Vulnerability and Irreplaceability score to the Outstanding Diversity of Threatened Species ranked score; and then multiplied by a factor of 2 (this value was later added to the scores generated from the socio-economic information). The maximum value that any site could obtain was 18; any KBA with a value over 14 was considered to be of the highest biological priority (recognizing that all KBAs, by definition, are high biological priorities).

Evaluation of Highest Biological Priority KBAs against Socio-economic Criteria

The KBAs that emerged as high biological priorities were further reviewed against eight socio-economic criteria in consultation with national experts:

- *Degree of threat.* Vulnerability scores based on the presence of threats such as agriculture, commercial development, climate change, invasive alien species, etc.
- *Funding need.* Level of investment needed from national and international donors for conservation of the site.
- *Management need.* Existence of management plans, staffing, and infrastructure, and mechanisms for community engagement and sustainable funding.
- *Civil society capacity.* Emphasizing the presence, interest, and capacity of local civil society groups.

[66] Quartiles are a type of quantile; which are "*cut points dividing the range of a probability distribution into contiguous intervals with equal probabilities or dividing the observations in a sample in the same way*". Thus, quartiles are the three cut points that will divide a dataset into four equal-size groups. The first quartile (Q1) is defined as the middle number between the smallest number and the median of the data set. The second quartile (Q2) is the median of the data. The third quartile (Q3) is the middle value between the median and the highest value of the data set.

- *Operational feasibility*. Viability of civil society to work effectively in a site based on security risk, land tenure or legal prohibitions.
- *Alignment with national priorities.* Support for those KBAs that are national biodiversity priorities.
- *Opportunity for landscape-scale conservation.* Ability to achieve landscape-scale conservation through linkage to large KBAs.
- *CEPF feasibility.* Potential for added value of CEPF investment based on continuity of action in CEPF phase one sites, and strategic opportunity based on current or emerging conditions in KBAs.

Values for the first four criteria were: Very High, High, Medium or Low; these values were converted to scores from 4 to 1 respectively. Values for the last criterion (CEPF feasibility) were 0, 2 or 4, based on the possibility of continued activity from the CEPF phase one investment (2 points) or new opportunities based on current or emerging conditions at the site (2 points). Values for the remaining criteria were High, Medium or Low; these were converted into scores from 3 to 1 respectively.

A final score for the site was calculated by adding the values for all eight socio-economic criteria plus the biological importance score. The maximum possible score was 45. All sites with a final score of 35 or over and a CEPF feasibility score of at least two were considered priorities for CEPF investment.

The results of the biological priority assessment of all 167 KBAs are shown in Appendix 8.1. Values for the socio-economic criteria of the 77 sites with highest biological priority are shown in Appendix 8.2.

Appendix 8.1 Biological Priority Assessment Results

Country	Code	Site National Name	Vulnerability Value	Irreplaceability Value	Vulnerability & Irreplaceability Score	#CR	#EN	#VU	Threatened Spp Value	Threatened Spp Ranked Score	Overall Biological Score	Biological Priority
Antigua and Barbuda	ATG-1	Bethesda Dam	Medium	Medium	1			1	1	1	4	
Antigua and Barbuda	ATG-2	Codrington Lagoon and the Creek	Medium	Medium	1			1	1	1	4	
Antigua and Barbuda	ATG-3	Hanson's Bay – Flashes	Medium	Medium	1			1	1	1	4	
Antigua and Barbuda	ATG-4	McKinnons Salt Pond	Medium	Medium	1			1	1	1	4	
Antigua and Barbuda	ATG-5	North East Marine Management Area and Fitches Creek Bay	Extreme	Extreme	5	2		1	13	4	18	Yes
Antigua and Barbuda	ATG-6	Redonda	Extreme	Extreme	5	1			6	2	14	Yes
The Bahamas	BHS-1	Allen's Cays	Medium	Medium	1			1	1	1	4	
The Bahamas	BHS-2	Andros Blue Holes National Park	Extreme	High	3	1	1	1	10	4	14	Yes
The Bahamas	BHS-3	Andros West Side National Park	Extreme	Very high	4	1		3	9	4	16	Yes
The Bahamas	BHS-4	Bight of Acklins National Park	High	Medium	2		1		3	2	8	
The Bahamas	BHS-5	Bitter Guana Cay	Medium	Medium	1			1	1	1	4	
The Bahamas	BHS-6	Booby Cay	Extreme	High	3	1			6	3	12	
The Bahamas	BHS-7	Cat Island Wetlands	Medium	Low	1			1	1	1	4	
The Bahamas	BHS-8	Cay Sal Marine Management Area	Medium	Very high	3			1	1	1	8	
The Bahamas	BHS-9	Conception Island National Park	Extreme	Extreme	5	1			6	3	16	Yes
The Bahamas	BHS-10	Driggs Hill to Mars Bay	Extreme	Medium	2	1			6	3	10	
The Bahamas	BHS-11	East Plana Cay	Medium	Very high	3			2	2	1	8	
The Bahamas	BHS-12	Exuma Cays Land and Sea Park	Extreme	High	3	2	2	3	21	4	14	Yes
The Bahamas	BHS-13	Graham's Harbour National Park	High	High	3		2		6	3	12	
The Bahamas	BHS-14	Green Cay Marine Park	High	Medium	2		1		3	2	8	
The Bahamas	BHS-15	Long Island and Hog Cay	High	Extreme	5		1	1	4	2	14	Yes
The Bahamas	BHS-16	Lucayan National Park	High	Very high	4		1	1	4	2	12	
The Bahamas	BHS-17	Mangrove Cay	Extreme	Medium	2	1		1	7	4	12	
The Bahamas	BHS-18	Owenstown (abandoned)	Extreme	Medium	2	1			6	3	10	
The Bahamas	BHS-19	Pigeon Creek & Snow Bay National Park	High	Medium	2		1		3	2	8	

Country	Code	Site National Name	Vulnerability Value	Irreplaceability Value	Vulnerability & Irreplaceability Score	#CR	#EN	#VU	Threatened Spp Value	Threatened Spp Ranked Score	Overall Biological Score	Biological Priority
The Bahamas	BHS-20	Southern Great Lake	High	Medium	2		1		3	2	8	
The Bahamas	BHS-21	Stafford Creek to Andros Town	Extreme	High	3	1	1	1	10	4	14	Yes
The Bahamas	BHS-22	White Bay, Noddy, North Adderley and Leaf Cays	Medium	Medium	1			1	1	1	4	
The Bahamas	BHS-23	White Cay	High	Medium	2		1		3	2	8	
Barbados	BRB-1	Bath Beach	Extreme	High	3	1			6	2	10	
Barbados	BRB-2	Hilton Beach	Extreme	High	3	1			6	2	10	
Barbados	BRB-3	North East Coast	Extreme	High	3	1			6	2	10	
Barbados	BRB-4	Scotland District	Extreme	Very high	4	1		2	8	3	14	Yes
Barbados	BRB-5	South Coast Beaches	Extreme	High	3	1			6	2	10	
Barbados	BRB-6	South East Coast	Extreme	High	3	1			6	2	10	
Barbados	BRB-7	West Coast Beaches	Extreme	High	3	1			6	2	10	
Dominica	DMA-1	Morne Diablotin National Park	High	Very high	4		3	2	11	4	16	Yes
Dominica	DMA-2	Morne Trois Pitons National Park	High	Very high	4	0	2	4	10	3	14	Yes
Dominica	DMA-3	Pointe Des Fous	High	High	3		1		3	2	10	
Dominica	DMA-4	West coast shrub woodland	Extreme	Very high	4	1			6	2	12	
Dominican Republic	DOM-1	Arroyo Lebrón, El Seybo	High	High	3		1		3	1	8	
Dominican Republic	DOM-2	Bahía de las Calderas y el Derrumbao	Medium	Low	1			1	1	1	4	
Dominican Republic	DOM-3	Honduras	Medium	Medium	1			1	1	1	4	
Dominican Republic	DOM-4	Monumento Natural Cabo Samaná	Extreme	Very high	4	1	3	1	16	3	14	Yes
Dominican Republic	DOM-5	Monumento Natural Hoyo Claro										
Dominican Republic	DOM-6	Monumento Natural Las Caobas	Extreme	Very high	4	1			6	2	12	
Dominican Republic	DOM-7	Monumento Natural Las Dunas de Las Calderas	Medium	High	2			2	2	1	6	
Dominican Republic	DOM-8	Monumento Natural Loma Isabel de Torres	Medium	Medium	1			1	1	1	4	
Dominican Republic	DOM-9	Monumento Natural Salto de la Damajagua	High	Low	2		1	1	4	2	8	
Dominican Republic	DOM-10	Parque Nacional Armando Bermúdez	High	High	3		15	9	54	4	14	Yes
Dominican Republic	DOM-11	Parque Nacional Cabo Cabrón	High	High	3		3	1	10	3	12	

Country	Code	Site National Name	Vulnerability Value	Irreplaceability Value	Vulnerability & Irreplaceability Score	#CR	#EN	#VU	Threatened Spp Value	Threatened Spp Ranked Score	Overall Biological Score	Biological Priority
Dominican Republic	DOM-12	Parque Nacional Cotubanamá	Extreme	Very high	4	1	3	4	19	3	14	Yes
Dominican Republic	DOM-13	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	High	Very high	4		15	10	55	4	16	Yes
Dominican Republic	DOM-14	Parque Nacional El Morro	High	High	3		1		3	1	8	
Dominican Republic	DOM-15	Parque Nacional Francisco Alberto Caamaño Deñó	High	High	3		1	1	4	2	10	
Dominican Republic	DOM-16	Parque Nacional Jaragua	Extreme	Extreme	5	3	8	9	51	4	18	Yes
Dominican Republic	DOM-17	Parque Nacional José del Carmen Ramírez	High	High	3		6	4	22	3	12	
Dominican Republic	DOM-18	Parque Nacional Lago Enriquillo e Isla Cabritos	Extreme	Very high	4	1	2	9	21	3	14	Yes
Dominican Republic	DOM-19	Parque Nacional Loma Nalga de Maco y Río Limpio	High	Medium	2		1	3	6	2	8	
Dominican Republic	DOM-20	Parque Nacional Los Haitises	Extreme	Very high	4	3	2	7	31	4	16	Yes
Dominican Republic	DOM-21	Parque Nacional Manglares de Estero Balsa	Medium	Medium	1			3	3	1	4	
Dominican Republic	DOM-22	Parque Nacional Manglares del Bajo Yuna	High	Low	2		1		3	1	6	
Dominican Republic	DOM-23	Parque Nacional Montaña La Humeadora	High	Very high	4		8	3	27	4	16	Yes
Dominican Republic	DOM-24	Parque Nacional Sierra de Bahoruco	Extreme	Very high	4	8	14	13	103	4	16	Yes
Dominican Republic	DOM-25	Parque Nacional Sierra de Neyba	Extreme	High	3	1	8	7	37	4	14	Yes
Dominican Republic	DOM-26	Parque Nacional Sierra Martín García	Extreme	Extreme	5	1	3	4	19	3	16	Yes
Dominican Republic	DOM-27	Playa Bayahibe	Extreme	High	3	1			6	2	10	
Dominican Republic	DOM-28	Punta Cana	Extreme	High	3	1		1	7	3	12	
Dominican Republic	DOM-29	Refugio de Vida Silvestre Cayos Siete Hermanos	High	High	3		1		3	1	8	
Dominican Republic	DOM-30	Refugio de Vida Silvestre Laguna Cabral o Rincón	Medium	Medium	1			2	2	1	4	
Dominican Republic	DOM-31	Refugio de Vida Silvestre Lagunas de Bávaro y el Caletón	High	High	3		2	1	7	3	12	

Country	Code	Site National Name	Vulnerability Value	Irreplaceability Value	Vulnerability & Irreplaceability Score	#CR	#EN	#VU	Threatened Spp Value	Threatened Spp Ranked Score	Overall Biological Score	Biological Priority
Dominican Republic	DOM-32	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte (Bahoruco Orienta)	Extreme	Very high	4	3	12	11	65	4	16	Yes
Dominican Republic	DOM-33	Reserva Biológica Loma Charco Azul	Extreme	High	3	1	2	1	13	3	12	
Dominican Republic	DOM-34	Reserva Científica Ébano Verde	High	Very high	4		7	5	26	4	16	Yes
Dominican Republic	DOM-35	Reserva Científica Loma Barbacoa	Extreme	Very high	4	1			6	2	12	
Dominican Republic	DOM-36	Reserva Científica Loma Guaconejo	High	Low	2		1	1	4	2	8	
Dominican Republic	DOM-37	Reserva Científica Loma Quita Espuela	High	Low	2		2	3	9	3	10	
Dominican Republic	DOM-38	Reserva Forestal Barrero	Medium	Very high	3			1	1	1	8	
Dominican Republic	DOM-39	Río Anamuya	High	High	3		1		3	1	8	
Grenada	GRD-1	Bathway Beach	Medium	High	2			1	1	1	6	
Grenada	GRD-2	Beausejour/Grenville Vale	Extreme	High	3	1			6	2	10	
Grenada	GRD-3	Grand Etang National Park	High	High	3		1		3	2	10	
Grenada	GRD-4	Levera Beach	Medium	High	2			1	1	1	6	
Grenada	GRD-5	Mount Hartman	Extreme	High	3	1			6	2	10	
Grenada	GRD-6	Mount Saint Catherine	High	High	3		1		3	2	10	
Grenada	GRD-7	Perseverance	Extreme	High	3	1			6	2	10	
Grenada	GRD-8	Woodford	Extreme	High	3	1			6	2	10	
Grenada	GRD-9	Woodlands	Extreme	High	3	1			6	2	10	
Haiti	HTI-1	Aire Protégée de Ressources Naturelles Gérées de Baradères-Cayemites	Extreme	Extreme	5	1	1	1	10	3	16	Yes
Haiti	HTI-2	Aire Protégée de Ressources Naturelles Gérées de Port-Salut/Aquin	Extreme	Medium	2	0		2	2	1	6	
Haiti	HTI-3	Aire Protégée de Ressources Naturelles Gérées des Trois Baies	High	Very high	4		2	5	11	3	14	Yes
Haiti	HTI-4	Anse-à-Pitres	Extreme	High	3	1			6	2	10	
Haiti	HTI-5	Baie de l'Acul / Chouchou	High	High	3		1	8	11	3	12	
Haiti	HTI-6	Cavaillon	Extreme	High	3	2	1	2	17	3	12	

Country	Code	Site National Name	Vulnerability Value	Irreplaceability Value	Vulnerability & Irreplaceability Score	#CR	#EN	#VU	Threatened Spp Value	Threatened Spp Ranked Score	Overall Biological Score	Biological Priority
Haiti	HTI-7	Chaînes des Cahos	High	Medium	2		1		3	2	8	
Haiti	HTI-8	Citadelle – Grottes Dondon	Extreme	Very high	4	1		4	10	3	14	Yes
Haiti	HTI-9	Dame Marie	Extreme	Extreme	5	1	2	3	15	3	16	Yes
Haiti	HTI-10	Delta de l'Artibonite	Medium	Medium	1			3	3	2	6	
Haiti	HTI-11	Dépression de Jacmel	Extreme	Very high	4	2	3	4	25	4	16	Yes
Haiti	HTI-12	Dubedou – Morne Balance	High	High	3		2	3	9	2	10	
Haiti	HTI-13	Fond des Nêgres – L'Etang Miragoane	Extreme	High	3	2	3	5	26	4	14	Yes
Haiti	HTI-14	Ile de la Tortue Est	Medium	Medium	1			2	2	1	4	
Haiti	HTI-15	Ile de la Tortue Ouest	Medium	High	2			2	2	1	6	
Haiti	HTI-16	Lac Azuéi – Trou Caiman	High	Very high	4		1	7	10	3	14	Yes
Haiti	HTI-17	Môle Saint Nicolas	High	High	3		1	3	6	2	10	
Haiti	HTI-18	Morne Bailly	Medium	Medium	1			3	3	2	6	
Haiti	HTI-19	Nan L'État	Medium	Low	1			1	1	1	4	
Haiti	HTI-20	Neiba d'Haïti	Extreme	High	3	1	2	3	15	3	12	
Haiti	HTI-21	Parc Marin la Gonâve - Nord	Medium	Very high	3			3	3	2	10	
Haiti	HTI-22	Parc Marin la Gonâve - Sud	Medium	Medium	1	1		1	7	2	6	
Haiti	HTI-23	Parc National Naturel de Grand Bois	Extreme	Very high	4	10	2	4	70	4	16	Yes
Haiti	HTI-24	Parc National Naturel Forêt des Pins-Unité 1	Extreme	High	3	1	5	2	23	4	14	Yes
Haiti	HTI-25	Parc National Naturel La Visite	Extreme	High	3	2	5	5	32	4	14	Yes
Haiti	HTI-26	Parc National Naturel Macaya	Extreme	Very high	4	10	8	9	93	4	16	Yes
Haiti	HTI-27	Pic Tête Boeuf	Extreme	High	3	1		1	7	2	10	
Haiti	HTI-28	Plaissance	Medium	Medium	1			3	3	2	6	
Haiti	HTI-29	Port-de-Paix	Extreme	Very high	4	2	2	2	20	4	16	Yes
Haiti	HTI-30	Saint Michel de l'Attalaye – Morne Basile	Medium	High	2			3	3	2	8	
Jamaica	JAM-1	Black River Great Morass	High	Very high	4		2	4	10	3	14	Yes
Jamaica	JAM-2	Blue and John Crow Mountains Protected National Heritage and surroundings	Extreme	Extreme	5	4	8	27	75	4	18	Yes
Jamaica	JAM-3	Bluefields	High	Very high	4		1	2	5	3	14	Yes

Country	Code	Site National Name	Vulnerability Value	Irreplaceability Value	Vulnerability & Irreplaceability Score	#CR	#EN	#VU	Threatened Spp Value	Threatened Spp Ranked Score	Overall Biological Score	Biological Priority
Jamaica	JAM-4	Bull Bay	Extreme	Very high	4	1	4	2	20	3	14	Yes
Jamaica	JAM-5	Catadupa	Extreme	Very high	4	3		9	27	4	16	Yes
Jamaica	JAM-6	Caymanas	Medium	Low	1			1	1	1	4	
Jamaica	JAM-7	Cockpit Country	Extreme	Extreme	5	8	14	31	121	4	18	Yes
Jamaica	JAM-8	Dolphin Head	Extreme	Very high	4	7	8	5	71	4	16	Yes
Jamaica	JAM-9	Don Figuerero Mountains	High	Very high	4		1	2	5	3	14	Yes
Jamaica	JAM-10	Font Hill	Medium	Medium	1			3	3	2	6	
Jamaica	JAM-11	Great River	High	High	3		1	1	4	2	10	
Jamaica	JAM-12	Kellits Camperdown Area	Medium	Low	1			1	1	1	4	
Jamaica	JAM-13	Litchfield Mountain - Matheson's Run	Extreme	Very high	4	4	8	24	72	4	16	Yes
Jamaica	JAM-14	Main Ridge	Medium	Low	1			1	1	1	4	
Jamaica	JAM-15	May Pen	Medium	High	2			1	1	1	6	
Jamaica	JAM-16	Milk River	Medium	Low	1			1	1	1	4	
Jamaica	JAM-17	Mount Diablo	Extreme	Very high	4	0	4	12	24	4	16	Yes
Jamaica	JAM-18	Negril and surroundings	High	Very high	4		1	6	9	3	14	Yes
Jamaica	JAM-19	North Coast Forest	Extreme	High	3	1	1	8	17	3	12	
Jamaica	JAM-20	Peckham Woods	Extreme	Very high	4	1	5	14	35	4	16	Yes
Jamaica	JAM-21	Point Hill	Extreme	Very high	4	1		1	7	3	14	Yes
Jamaica	JAM-22	Portland Bight Protected Area	Extreme	Extreme	5	2	5	7	34	4	18	Yes
Jamaica	JAM-23	Red Ground	Medium	Low	1			1	1	1	4	
Jamaica	JAM-24	Rio Cobre	Medium	Low	1			2	2	2	6	
Jamaica	JAM-25	Rio Grande	Medium	Low	1			1	1	1	4	
Jamaica	JAM-26	Rio Magno	Medium	Low	1			1	1	1	4	
Jamaica	JAM-27	Rio Pedro	Medium	Low	1			1	1	1	4	
Jamaica	JAM-28	Santa Cruz Mountains	High	Very high	4		1	1	4	2	12	
Jamaica	JAM-29	Stephney Johns Vale - Bull Head	High	Very high	4		3	4	13	3	14	Yes
Jamaica	JAM-30	Swift River	Medium	Low	1			1	1	1	4	

Country	Code	Site National Name	Vulnerability Value	Irreplaceability Value	Vulnerability & Irreplaceability Score	#CR	#EN	#VU	Threatened Spp Value	Threatened Spp Ranked Score	Overall Biological Score	Biological Priority
Jamaica	JAM-31	Wag Water River	Medium	Low	1			1	1	1	4	
Jamaica	JAM-32	Yallahs	Medium	Medium	1			2	2	2	6	
St. Vincent and the Grenadines	VCT-1	Chatham Bay, Union Island	Extreme	Extreme	5	1	1	1	10	3	16	Yes
St. Vincent and the Grenadines	VCT-2	Colonarie Forest Reserve	Extreme	Medium	2	1	1	1	10	3	10	
St. Vincent and the Grenadines	VCT-3	Cumberland Forest Reserve	Extreme	High	3	1	2	1	13	4	14	Yes
St. Vincent and the Grenadines	VCT-4	Dalaway (Buccament) Watershed	Extreme	Medium	2	1	1	1	10	3	10	
St. Vincent and the Grenadines	VCT-5	Kingstown Forest Reserve	Extreme	Medium	2	1	1	1	10	3	10	
St. Vincent and the Grenadines	VCT-6	La Soufrière National Park	High	High	3		2	1	7	3	12	
St. Vincent and the Grenadines	VCT-7	Mount Pleasant Forest Reserve	Extreme	Medium	2	1	1	1	10	3	10	
St. Vincent and the Grenadines	VCT-8	Richmond Forest Reserve	Extreme	High	3	1	2	1	13	4	14	Yes
Saint Kitts and Nevis	KNA-1	Cayon to Key	Medium	High	2			1	1	1	6	
Saint Kitts and Nevis	KNA-2	Nevis Peak	High	Very high	4		1		3	2	12	
Saint Lucia	LCA-1	Anse Cochon Protected Landscape	High	High	3		3		9	3	12	
Saint Lucia	LCA-2	Castries and Dennery Waterworks Reserve and Marquis	Extreme	Very high	4	0	3	3	12	4	16	Yes
Saint Lucia	LCA-3	Iyanola and Grande Anse, Esperance and Fond D'ors	High	High	3		4		12	4	14	Yes
Saint Lucia	LCA-4	Mandelé Protected Landscape	Extreme	High	3	1	5	1	22	4	14	Yes
Saint Lucia	LCA-5	Pitons(Qualibou and Canaries)	High	High	3		4	2	14	4	14	Yes
Saint Lucia	LCA-6	Pointe Sable	Extreme	Extreme	5	2	2		18	4	18	Yes
Saint Lucia	LCA-7	Rat Island	Extreme	High	3	1	1		9	3	12	

Appendix 8.2 Evaluation of Highest Biological Priority KBAs against Socio-economic Criteria

Country	Site Code	Site National Name	Biological Priority Score	Degree of Threat	Funding Need	Management Need	CSO Capacity	Operational Feasibility	Alignment with National Priorities	Opportunity Landscape-scale Conservation	CEPF Feasibility	Final Score	CEPF Priority Site
Antigua and Barbuda	ATG-5	North East Marine Management Area and Fitches Creek Bay	18	4	3	3	4	2	3	3	2	42	Yes
Antigua and Barbuda	ATG-6	Redonda	14	3	3	3	4	2	3	1	2	35	Yes
The Bahamas	BHS-2	Andros Blue Holes National Park	14	3	2	3	3	2	3	3	2	35	Yes
The Bahamas	BHS-3	Andros West Side National Park	16	3	3	3	1	2	3	3	0	34	
The Bahamas	BHS-9	Conception Island National Park	16								0	16	
The Bahamas	BHS-12	Exuma Cays Land and Sea Park	14	3	3	3	4	2	3	3	2	37	Yes
The Bahamas	BHS-15	Long Island and Hog Cay	14	2	3	3	2	2	3	3	0	32	
The Bahamas	BHS-21	Stafford Creek to Andros Town	14	3	0	0	2	2	3	3	0	27	
Barbados	BRB-4	Scotland District	14									14	
Dominica	DMA-1	Morne Diablotin National Park	16	3	3	2	1	2	3	3	2	35	Yes
Dominica	DMA-2	Morne Trois Pitons National Park	14	3	3	2	1	2	3	2	2	32	
Dominican Republic	DOM-4	Monumento Natural Cabo Samaná	14	3	3	3	3	2	3	3	2	36	Yes
Dominican Republic	DOM-10	Parque Nacional Armando Bermúdez	14									14	
Dominican Republic	DOM-12	Parque Nacional Cotubanamá	14	2	3	2	2	1	3	3	2	32	
Dominican Republic	DOM-13	Parque Nacional Dr. Juan Bautista Pérez Rancier (Valle Nuevo)	16	4	3	3	3	2	3	3	4	41	Yes
Dominican Republic	DOM-16	Parque Nacional Jaragua	18	3,5	3	3	3	2	3	3	4	42,5	Yes
Dominican Republic	DOM-18	Parque Nacional Lago Enriquillo e Isla Cabritos	14	2	3	3	3	2	3	3	4	37	Yes
Dominican Republic	DOM-20	Parque Nacional Los Haitises	16	2	3	3	2	2	3	3	4	38	Yes
Dominican Republic	DOM-23	Parque Nacional Montaña La Humeadora	16	3,5	3	3	2,5	2	3	3	4	40	Yes
Dominican Republic	DOM-24	Parque Nacional Sierra de Bahoruco	16	3	3	3	4	2	3	3	4	41	Yes
Dominican Republic	DOM-25	Parque Nacional Sierra de Neyba	14	4	3	3	1	3	3	3	0	34	
Dominican Republic	DOM-26	Parque Nacional Sierra Martín García	16	3	3	3	1	1	3	3	0	33	
Dominican Republic	DOM-32	Refugio de Vida Silvestre Monumento Natural Miguel Domingo	16	3	3	3	3	2	3	3	2	38	Yes

Country	Site Code	Site National Name	Biological Priority Score	Degree of Threat	Funding Need	Management Need	CSO Capacity	Operational Feasibility	Alignment with National Priorities	Opportunity Landscape-scale Conservation	CEPF Feasibility	Final Score	CEPF Priority Site
		Fuerte (Bahoruco Orienta)											
Dominican Republic	DOM-34	Reserva Científica Ébano Verde	16	3	3	3	3	3	3	3	2	39	Yes
Haiti	HTI-1	Aire Protégée de Ressources Naturelles Gérées de Baradères-Cayemites	16	4	3	3	2	2	3	3	2	38	Yes
Haiti	HTI-3	Aire Protégée de Ressources Naturelles Gérées des Trois Baies	14	4	3	3	2	2	3	3	4	38	Yes
Haiti	HTI-8	Citadelle – Grottes Dondon	14	3	3	3	3	1	2	3	0	32	
Haiti	HTI-9	Dame Marie	16									16	
Haiti	HTI-11	Dépression de Jacmel	16									16	
Haiti	HTI-13	Fond des Nêgres – L'Etang Miragoane	14									14	
Haiti	HTI-16	Lac Azuéi – Trou Caiman	14	3	3	3	1	2	3	3	4	36	Yes
Haiti	HTI-23	Parc National Naturel de Grand Bois	16	4	2	3	2	2	3	3	2	37	Yes
Haiti	HTI-24	Parc National Naturel Forêt des Pins-Unité 1	14	4	3	3	2	2	3	3	4	38	Yes
Haiti	HTI-25	Parc National Naturel La Visite	14	4	3	3	2	2	3	3	2	36	Yes
Haiti	HTI-26	Parc National Naturel Macaya	16	4	2	3	2	2	3	3	4	39	Yes
Haiti	HTI-29	Port-de-Paix	16									16	
Jamaica	JAM-1	Black River Great Morass	14	3.5	3	3	1	2	3	2	2	33.5	
Jamaica	JAM-2	Blue and John Crow Mountains Protected National Heritage and surroundings	18	3	3	3	3	2	3	3	2	40	Yes
Jamaica	JAM-3	Bluefields	14	4	0	0	1	2	1	1	0	23	
Jamaica	JAM-4	Bull Bay	14	3	2	3	1	2	3	3	2	33	
Jamaica	JAM-5	Catadupa	16	4	3	3	1	3	3	3	4	40	Yes
Jamaica	JAM-7	Cockpit Country	18	4	3	3	2	2	3	3	2	40	Yes
Jamaica	JAM-8	Dolphin Head	16	2	3	3	1	2	3	2	4	36	Yes
Jamaica	JAM-9	Don Figuerero Mountains	14	0	0	0	0	0	1	1	0	16	
Jamaica	JAM-13	Litchfield Mountain - Matheson's Run	16	4	3	3	1	3	3	3	4	40	Yes
Jamaica	JAM-17	Mount Diablo	16	4	3	3	1	2	3	3	0	35	
Jamaica	JAM-18	Negril and surroundings	14	3	3	3	2	2	3	0	2	32	
Jamaica	JAM-20	Peckham Woods	16	3	3	3	2	2	2	3	2	36	Yes
Jamaica	JAM-21	Point Hill	14	2	0	0	0	0	1	2	0	19	

Country	Site Code	Site National Name	Biological Priority Score	Degree of Threat	Funding Need	Management Need	CSO Capacity	Operational Feasibility	Alignment with National Priorities	Opportunity Landscape-scale Conservation	CEPF Feasibility	Final Score	CEPF Priority Site
Jamaica	JAM-22	Portland Bight Protected Area	18	3	3	3	4	2	3	3	4	43	Yes
Jamaica	JAM-29	Stephney Johns Vale - Bull Head	14	3	3	2	1	2	3	3	2	33	
St. Vincent and the Grenadines	VCT-1	Chatham Bay, Union Island	16	4	3	3	3	2	2	2	2	37	Yes
St. Vincent and the Grenadines	VCT-3	Cumberland Forest Reserve	14	3	3	3	1	2	3	3	4	36	Yes
St. Vincent and the Grenadines	VCT-8	Richmond Forest Reserve	14	4	3	3	2	2	3	3	0	34	
Saint Lucia	LCA-2	Castries and Dennery Waterworks Reserve and Marquis	16	3	3	3	1	2	3	3	2	36	Yes
Saint Lucia	LCA-3	Iyanola and Grande Anse, Esperance and Fond D'ors	14									14	
Saint Lucia	LCA-4	Mandelé Protected Landscape	14	4	3	3	2	2	2	3	4	37	Yes
Saint Lucia	LCA-5	Pitons(Qualibou and Canaries)	14									14	
Saint Lucia	LCA-6	Pointe Sable	18	4	3	3	4	2	3	2	4	43	Yes

Appendix 9 Priority Species

Class	No.	Scientific Name	English Name	Red List Status	Island Endemic	Key Biodiversity Area
Mammalia	1.	*Plagiodontia aedium*	Cuvier's Hutia	EN	Hispaniola	Monumento Natural Cabo Samaná; Parque Nacional Jaragua; Parque Nacional Los Haitises; Parque Nacional Sierra de Bahoruco; Parque Nacional Valle Nuevo; Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte;La Visite; Macaya
Mammalia	2.	*Solenodon paradoxus*	Hispaniolan Solenodon	EN	Hispaniola	Monumento Natural Cabo Samaná; Parque Nacional Jaragua; Parque Nacional Los Haitises; Parque Nacional Sierra de Bahoruco; Parque Nacional Valle Nuevo; Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte; Reserva Científica Ébano Verde; Macaya
Aves	3.	*Buteo ridgwayi*	Ridgway's Hawk	CR	Dominican Republic	Parque Nacional Los Haitises
Aves	4.	*Leptotila wellsi*	Grenada Dove	CR	Grenada	Beausejour/Grenville Vale; Mount Hartman; Perseverance; Woodford; Woodlands
Aves	5.	*Geotrygon leucometopia*	White-fronted Quail-dove	EN	Hispaniola	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte; Reserva Científica Ébano Verde
Aves	6.	*Coccyzus rufigularis*	Bay-breasted Cuckoo	EN	Hispaniola	Parque Nacional Sierra de Bahoruco
Aves	7.	*Loxia megaplaga*	Hispaniolan Crossbill	EN	Hispaniola	Parque Nacional Sierra de Bahoruco; Parque Nacional Valle Nuevo; Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte; Forêt des Pins Unité 1; La Visite; Macaya
Aves	8.	*Icterus northropi*	Bahama Oriole	CR	The Bahamas	Andros Blue Holes National Park
Aves	9.	*Nesopsar nigerrimus*	Jamaican Blackbird	EN	Jamaica	Blue and John Crow Mountains National Heritage and surroundings; Cockpit Country; Litchfield Mountain - Matheson's Run
Aves	10.	*Catharopeza bishopi*	Whistling Warbler	EN	St. Vincent and the Grenadines	Cumberland Forest Reserve

Class	No.	Scientific Name	English Name	Red List Status	Island Endemic	Key Biodiversity Area
Aves	11.	*Amazona imperialis*	Imperial Amazon	EN	Dominica	Morne Diablotin National Park; Morne Trois Pitons National Park^
Aves	12.	*Melanospiza richardsoni*	Saint Lucia Black Finch	EN	Saint Lucia	Castries and Dennery Waterworks Reserve and Marquis; Mandelé Protected Landscape
Aves	13.	*Turdus swalesi*	La Selle Thrush	VU	Hispaniola	Parque Nacional Montaña La Humeadora; Parque Nacional Sierra de Bahoruco; Parque Nacional Valle Nuevo; Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte; Forêt des Pins Unité 1; La Visite
Reptilia	14.	*Alsophis antiguae*	Antiguan Racer	CR	Antigua and Barbuda	North East Marine Management Area and Fitches Creek Bay
Reptilia	15.	*Amphisbaena caudalis*	Cayemite Long-tailed Amphisbaena	EN	Haiti	Cayemites - Barradères
Reptilia	16.	*Amphisbaena cayemite*	Cayemite Short-tailed Amphisbaena	CR	Haiti	Cayemites - Barradères
Reptilia	17.	*Bothrops caribbaeus*	Saint Lucia Lancehead	EN*	Saint Lucia	Anse Cochon Protected Landscape^, Castries and Dennery Waterworks Reserve and Marquis, Iyanola and Grande Anse, Esperance and Fond D'ors^, Mandelé Protected Landscape, Pitons(Qualibou and Canaries)^
Reptilia	18.	*Chironius vincenti*	St Vincent Blacksnake	CR	St. Vincent and the Grenadines	Cumberland Forest Reserve
Reptilia	19.	*Cnemidophorus vanzoi*	Saint Lucian Whiptail	CR	Saint Lucia	Mandelé Protected Landscape; Pointe Sable
Reptilia	20.	*Cyclura collei*	Jamaican Iguana	CR	Jamaica	Portland Bight Protected Area
Reptilia	21.	*Cyclura ricordii*	Ricord's Rock Iguana	CR	Hispaniola	Parque Nacional Jaragua; Parque Nacional Lago Enriquillo e Isla Cabritos; Anse-à-Pitres^
Reptilia	22.	*Cyclura rileyi*	Central Bahamian Rock Iguana	EN	The Bahamas	Exuma Cays Land and Sea Park; Graham's Harbour National Park^
Reptilia	23.	*Erythrolamprus ornatus*	Saint Lucia Racer	CR	Saint Lucia	Pointe Sable
Reptilia	24.	*Gonatodes daudini*	Union Island Gecko	CR	St. Vincent and the Grenadines	Chatham Bay, Union Island
Reptilia	25.	*Leiocephalus altavelensis*	Alto Velo Curlytail Lizard	CR	Dominican Republic	Parque Nacional Jaragua

Class	No.	Scientific Name	English Name	Red List Status	Island Endemic	Key Biodiversity Area
Reptilia	26.	*Mitophis calypso*	Samana Threadsnake	CR	Dominican Republic	Monumento Natural Cabo Samaná
Reptilia	27.	*Pholidoscelis atratus*	Redonda Ameiva	CR	Angtigua and Barbuda	Redonda
Reptilia	28.	*Phyllodactylus pulcher*	Barbados Leaf-toed Gecko	CR	BRB	North East Coast, South East Coast
Reptilia	29.	*Sphaerodactylus cochranae*	Cochran's Least Gecko	CR	Dominican Republic	Parque Nacional Los Haitises
Reptilia	30.	*Sphaerodactylus cryphius*	Bakoruco Least Gecko	EN	Dominican Republic	Parque Nacional Lago Enriquillo e Isla Cabritos
Reptilia	31.	*Sphaerodactylus samanensis*	Samana Least Gecko	CR	Dominican Republic	Parque Nacional Los Haitises
Reptilia	32.	*Sphaerodactylus thompsoni*	Barahona Limestone Sphaero	EN	Hispaniola	Parque Nacional Jaragua
Reptilia	33.	*Spondylurus fulgida*	Jamaican Skink	EN	Jamaica	Portland Bight Protected Area
Reptilia	34.	*Tetracheilostoma breuili*	Saint Lucia Threadsnake	EN	Saint Lucia	Mandelé Protected Landscape; Pointe Sable
Reptilia	35.	*Tetracheilostoma carlae*	Barbados Threadsnake	CR	BRB	Scotland District
Reptilia	36.	*Typhlops syntherus*	Barahona Peninsula Blindsnake	EN	Hispaniola	Parque Nacional Jaragua
Amphibia	37.	*Anolis luciae*	Saint Lucian Anole	EN*	Saint Lucia	Anse Cochon Protected Landscape^, Castries and Dennery Waterworks Reserve and Marquis, Iyanola and Grande Anse, Esperance and Fond D'ors^, Mandelé Protected Landscape, Pitons (Qualibou and Canaries)^, Pointe Sable, Rat Island^
Amphibia	38.	*Anolis nubilis*	Redonda Anole	CR*	Antigua and Barbuda	Redonda
Amphibia	39.	*Eleutherodactylus alcoae*	Barahona Rock Frog	EN	Hispaniola	Parque Nacional Jaragua; Parque Nacional Sierra de Bahoruco; Refugio de Vida Silvestre Monumento Natural Miguel Domingo
Amphibia	40.	*Eleutherodactylus amadeus*	Haitian Robber Frog	CR	Haiti	Grand Bois; Macaya
Amphibia	41.	*Eleutherodactylus amplinympha*		EN	Dominica	Morne Diablotin National Park
Amphibia	42.	*Eleutherodactylus andrewsi*	Jamaican Rumpspot Frog	EN	Jamaica	Blue and John Crow Mountains National Heritage and surroundings;
Amphibia	43.	*Eleutherodactylus apostates*	Apostates Robber Frog	CR	Haiti	Grand Bois

Class	No.	Scientific Name	English Name	Red List Status	Island Endemic	Key Biodiversity Area
Amphibia	44.	*Eleutherodactylus armstrongi*	Baoruco Hammer Frog	EN	Hispaniola	Parque Nacional Sierra de Bahoruco; Refugio de Vida Silvestre Monumento Natural Miguel Domingo
Amphibia	45.	*Eleutherodactylus auriculatoides*		EN	Dominican Republic	Parque Nacional Montaña La Humeadora; Parque Nacional Valle Nuevo; Reserva Científica Ébano Verde
Amphibia	46.	*Eleutherodactylus corona*		CR	Haiti	Macaya
Amphibia	47.	*Eleutherodactylus counouspeus*		EN	Haiti	Grand Bois
Amphibia	48.	*Eleutherodactylus eunaster*	Les Cayes Robber Frog	CR	Haiti	Grand Bois
Amphibia	49.	*Eleutherodactylus fowleri*	Fowler's Robber Frog	CR	Hispaniola	Parque Nacional Sierra de Bahoruco
Amphibia	50.	*Eleutherodactylus furcyensis*	La Selle Red-legged Frog	CR	Hispaniola	Parque Nacional Sierra de Bahoruco
Amphibia	51.	*Eleutherodactylus glaphycompus*		EN	Haiti	Grand Bois, Macaya
Amphibia	52.	*Eleutherodactylus grabhami*		EN	Jamaica	Dolphin Head
Amphibia	53.	*Eleutherodactylus griphus*		CR	Jamaica	Cockpit Country
Amphibia	54.	*Eleutherodactylus haitianus*		EN	Dominican Republic	Parque Nacional Valle Nuevo
Amphibia	55.	*Eleutherodactylus heminota*	Half-stripe Bromeliad Frog	EN	Hispaniola	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte; La Visite; Macaya
Amphibia	56.	*Eleutherodactylus hypostenor*	Baoruco Burrowing Frog	EN	Hispaniola	Parque Nacional Sierra de Bahoruco; Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte
Amphibia	57.	*Eleutherodactylus jamaicensis*		EN	Jamaica	Blue and John Crow Mountains National Heritage and surroundings; Dolphin Head
Amphibia	58.	*Eleutherodactylus jugans*	La Selle Dusky Frog	CR	Hispaniola	Parque Nacional Sierra de Bahoruco; La Visite
Amphibia	59.	*Eleutherodactylus leoncei*	Southern Pastel Frog	CR	Hispaniola	Parque Nacional Sierra de Bahoruco; Refugio de Vida Silvestre Monumento Natural Miguel Domingo
Amphibia	60.	*Eleutherodactylus luteolus*		EN	Jamaica	Dolphin Head

Class	No.	Scientific Name	English Name	Red List Status	Island Endemic	Key Biodiversity Area
Amphibia	61.	*Eleutherodactylus minutus*		EN	Dominican Republic	Parque Nacional Montaña La Humeadora; Parque Nacional Valle Nuevo; Reserva Científica Ébano Verde
Amphibia	62.	*Eleutherodactylus montanus*		EN	Dominican Republic	Reserva Científica Ébano Verde
Amphibia	63.	*Eleutherodactylus nortoni*	Spiny Giant Frog	CR	Hispaniola	Parque Nacional Sierra de Bahoruco; Refugio de Vida Silvestre Monumento Natural Miguel Domingo; Grand Bois; Macaya
Amphibia	64.	*Eleutherodactylus parapelates*	Casillon Robber Frog	CR	Haiti	Macaya
Amphibia	65.	*Eleutherodactylus patriciae*		EN	Dominican Republic	Parque Nacional Montaña La Humeadora; Parque Nacional Valle Nuevo
Amphibia	66.	*Eleutherodactylus pituinus*		EN	Dominican Republic	Parque Nacional Montaña La Humeadora; Parque Nacional Valle Nuevo; Reserva Científica Ébano Verde
Amphibia	67.	*Eleutherodactylus ruthae*		EN	Hispaniola	Monumento Natural Cabo Samaná
Amphibia	68.	*Eleutherodactylus semipalmatus*	Foothill Robber Frog	CR	Hispaniola	Parque Nacional Sierra de Bahoruco; Grand Bois
Amphibia	69.	*Eleutherodactylus sisyphodemus*		CR	Jamaica	Cockpit Country
Amphibia	70.	*Eleutherodactylus thorectes*		CR	Haiti	Macaya
Amphibia	71.	*Eleutherodactylus ventrilineatus*		CR	Haiti	Macaya
Amphibia	72.	*Osteopilus wilderi*	Green Bromeliad Frog	EN	Jamaica	Blue and John Crow Mountains National Heritage and surroundings
Amphibia	73.	*Pristimantis euphronides*		EN	GRD	Grand Etang National Park^; Mount Saint Catherine^
Amphibia	74.	*Pristimantis shrevei*		EN	St. Vincent and the Grenadines	Cumberland Forest Reserve
Actinopterygii	75.	*Gambusia dominicensis*	Domingo Mosquito Fish	EN	Hispaniola	Parque Nacional Lago Enriquillo e Isla Cabritos; Lac Azuéi – Trou Caiman
Liliopsida	76.	*Acianthera compressicaulis*		EN	Hispaniola	Macaya
Liliopsida	77.	*Pseudophoenix ekmanii*		CR	Dominican Republic	Parque Nacional Jaragua
Magnoliopsida	78.	*Comocladia parvifoliola*		CR	Jamaica	Dolphin Head

Class	No.	Scientific Name	English Name	Red List Status	Island Endemic	Key Biodiversity Area
Magnoliopsida	79.	*Tabernaemontana ovalifolia*		EN	Jamaica	Dolphin Head
Magnoliopsida	80.	*Ilex jamaicana*		EN	Jamaica	Blue and John Crow Mountains National Heritage and surroundings
Magnoliopsida	81.	*Dendropanax grandiflorus*		CR	Jamaica	Litchfield Mountain - Matheson's Run
Magnoliopsida	82.	*Bursera hollickii*		EN	Jamaica	Bull Bay^; Portland Bight Protected Area
Magnoliopsida	83.	*Consolea spinosissima*		EN	Jamaica	Bull Bay^; Portland Bight Protected Area
Magnoliopsida	84.	*Pseudorhipsalis alata*		EN	Jamaica	Cockpit Country, Peckham Woods
Magnoliopsida	85.	*Maytenus harrisii*		CR	Jamaica	Blue and John Crow Mountains National Heritage and surroundings
Magnoliopsida	86.	*Bernardia trelawniensis*		EN	Jamaica	Cockpit Country
Magnoliopsida	87.	*Phyllanthus axillaris*		EN	Jamaica	Cockpit Country
Magnoliopsida	88.	*Sebastiania fasciculata*		EN	Jamaica	Dolphin Head
Magnoliopsida	89.	*Sebastiania spicata*		EN	Jamaica	Litchfield Mountain - Matheson's Run
Magnoliopsida	90.	*Nectandra pulchra*		CR	Haiti	Forêt des Pins 1; Macaya
Magnoliopsida	91.	*Ocotea staminoides*		EN	Jamaica	Litchfield Mountain - Matheson's Run
Magnoliopsida	92.	*Ormosia jamaicensis*		EN	Jamaica	Dolphin Head
Magnoliopsida	93.	*Sophora saxicola*		EN	Jamaica	Cockpit Country
Magnoliopsida	94.	*Magnolia ekmanii*		CR	Haiti	Grand Bois
Magnoliopsida	95.	*Magnolia hamorii*	Caimoni	EN	Dominican Republic	Refugio de Vida Silvestre Monumento Natural Miguel Domingo Fuerte
Magnoliopsida	96.	*Magnolia pallescens*		EN	Dominican Republic	Parque Nacional Montaña La Humeadora; Parque Nacional Valle Nuevo; Reserva Científica Ébano Verde
Magnoliopsida	97.	*Miconia nubicola*		EN	Jamaica	Blue and John Crow Mountains National Heritage and surroundings
Magnoliopsida	98.	*Ardisia brittonii*		EN	Jamaica	Blue and John Crow Mountains National Heritage and surroundings
Magnoliopsida	99.	*Ardisia byrsonimae*		CR	Jamaica	Peckham Woods
Magnoliopsida	100.	*Calyptranthes acutissima*		CR	Jamaica	Dolphin Head

Class	No.	Scientific Name	English Name	Red List Status	Island Endemic	Key Biodiversity Area
Magnoliopsida	101.	*Calyptranthes discolor*		EN	Jamaica	Dolphin Head
Magnoliopsida	102.	*Eugenia aboukirensis*		CR	Jamaica	Litchfield Mountain - Matheson's Run
Magnoliopsida	103.	*Eugenia eperforata*		EN	Jamaica	Litchfield Mountain - Matheson's Run; Portland Bight Protected Area
Magnoliopsida	104.	*Eugenia laurae*		EN	Jamaica	Cockpit Country
Magnoliopsida	105.	*Eugenia polypora*		CR	Jamaica	Dolphin Head
Magnoliopsida	106.	*Eugenia rendlei*		CR	Jamaica	Blue and John Crow Mountains National Heritage and surroundings
Magnoliopsida	107.	*Eugenia sachetae*		EN	Jamaica	Cockpit Country
Magnoliopsida	108.	*Mitranthes macrophylla*		CR	Jamaica	Cockpit Country
Magnoliopsida	109.	*Mitranthes nivea*		EN	Jamaica	Litchfield Mountain - Matheson's Run
Magnoliopsida	110.	*Pimenta richardii*		EN	Jamaica	Cockpit Country
Magnoliopsida	111.	*Ouratea elegans*		CR	Jamaica	Catadupa
Magnoliopsida	112.	*Ternstroemia bullata*		CR	Jamaica	Litchfield Mountain - Matheson's Run
Magnoliopsida	113.	*Ternstroemia calycina*		EN	Jamaica	Litchfield Mountain - Matheson's Run; Peckham Woods
Magnoliopsida	114.	*Ternstroemia glomerata*		CR	Jamaica	Catadupa
Magnoliopsida	115.	*Cassipourea brittoniana*		EN	Jamaica	Cockpit Country
Magnoliopsida	116.	*Cassipourea subcordata*		CR	Jamaica	Cockpit Country
Magnoliopsida	117.	*Cassipourea subsessilis*		CR	Jamaica	Dolphin Head
Magnoliopsida	118.	*Exostema orbiculatum*		CR	Jamaica	Cockpit Country
Magnoliopsida	119.	*Guettarda longiflora*		CR	Jamaica	Catadupa; Cockpit Country
Magnoliopsida	120.	*Phialanthus revolutus*		EN	Jamaica	Portland Bight Protected Area
Magnoliopsida	121.	*Psychotria bryonicola*		CR	Jamaica	Blue and John Crow Mountains National Heritage and surroundings
Magnoliopsida	122.	*Psychotria clarendonensis*		EN	Jamaica	Litchfield Mountain - Matheson's Run; Peckham Woods
Magnoliopsida	123.	*Psychotria clusioides*		EN	Jamaica	Blue and John Crow Mountains National Heritage and surroundings
Magnoliopsida	124.	*Psychotria hanoverensis*		CR	Jamaica	Dolphin Head
Magnoliopsida	125.	*Psychotria siphonophora*		EN	Jamaica	Cockpit Country

Class	No.	Scientific Name	English Name	Red List Status	Island Endemic	Key Biodiversity Area
Magnoliopsida	126.	*Rondeletia amplexicaulis*		EN	Jamaica	Cockpit Country
Magnoliopsida	127.	*Rondeletia brachyphylla*		EN	Jamaica	Blue and John Crow Mountains National Heritage and surroundings
Magnoliopsida	128.	*Rondeletia cincta*		CR	Jamaica	Dolphin Head
Magnoliopsida	129.	*Rondeletia clarendonensis*		EN	Jamaica	Litchfield Mountain - Matheson's Run; Peckham Woods
Magnoliopsida	130.	*Scolosanthus howardii*		EN	Jamaica	Cockpit Country
Magnoliopsida	131.	*Spathelia coccinea*		CR	Jamaica	Cockpit Country
Magnoliopsida	132.	*Manilkara excisa*		EN	Jamaica	Cockpit Country
Pinopsida	133.	*Juniperus gracilior*		EN	Hispaniola	Parque Nacional Montaña La Humeadora; Parque Nacional Sierra de Parque Nacional Valle Nuevo Bahoruco;
Pinopsida	134.	*Pinus occidentalis*	Hispaniolan Pine	EN	Hispaniola	Parque Nacional Sierra de Bahoruco; Parque Nacional Valle Nuevo; Refugio de Vida Silvestre Monumento Natural Miguel Domingo
Pinopsida	135.	*Podocarpus buchii*		EN	Hispaniola	Parque Nacional Sierra de Bahoruco; Parque Nacional Valle Nuevo; Reserva Científica Ébano Verde
Pinopsida	136.	*Podocarpus hispaniolensis*		EN	Hispaniola	Parque Nacional Montaña La Humeadora; Parque Nacional Valle Nuevo; Refugio de Vida Silvestre Monumento Natural Miguel Domingo
Pinopsida	137.	*Podocarpus purdieanus*	Yacca	EN	Jamaica	Cockpit Country
Pinopsida	138.	*Podocarpus urbanii*	Blue Mountain Yacca	CR	Jamaica	Blue and John Crow Mountains National Heritage and surroundings

Notes: *** =** Species accepted by the IUCN, but not yet published on the Red List; ^ = Non-CEPF priority KBA.