

■ PUERTO RICO

LAND AREA 8,870 km² ALTITUDE 0–1,338 m
HUMAN POPULATION 3,944,259 CAPITAL San Juan
IMPORTANT BIRD AREAS 20, totalling 1,971 km²
IMPORTANT BIRD AREA PROTECTION 10%
BIRD SPECIES 354
THREATENED BIRDS 6 RESTRICTED-RANGE BIRDS 23



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Mona Island IBA, off the coast of western Puerto Rico—important for its seabirds and Endangered Yellow-shouldered Blackbird population. (PHOTO: ENRIQUE A. SILVA RODRIGUEZ)

INTRODUCTION

Puerto Rico is the smallest and most easterly of the Greater Antilles lying 114 km east of the Dominican Republic and just 60 km west of the Virgin Islands (to USA). It is a Commonwealth and territory of the USA. Puerto Rico is a small archipelago of islands and cays such as Vieques, Culebra, Mona, Monito, Desecheo, Caja de Muertos amongst others. Its geographical location and geological history has had a profound influence on the rich diversity of its flora and fauna. It can be divided into three geomorphologic regions of the central mountainous interior, the karst, and coastal plains. Nearly 85% of the country lies below 500 m and less than 1% is above 1,000 m, the highest point being Cerro Punta, at 1,338 m above sea level. The mountainous region acts as a barrier to the moisture-rich trade winds which unload most of their humidity in the form of rain on the windward side of the mountains. Thus, the north and east is relatively wet (averaging 1,550 mm per year), whereas the south is fairly dry (910 mm annually). The west receives the remainder of

the moisture from the trade winds and the humidity-soaked winds from the south. The windward side of the Luquillo Mountains may receive more than 5,000 mm of rain annually. Rainfall is also associated with tropical low-pressure systems which form or pass through the region between June and November (which is the period of highest rainfall).

Forests in Puerto Rico are considered to be subtropical and can be classified into 10 types depending on a combination of temperature, elevation and substrate: dry coastal limestone forests; dry coastal volcanic forests; dry and moist alluvial forests; dry forest; moist and wet forests on igneous rock; moist coastal forests on sandy bedrock; moist and wet forest on limestone; lowland moist forest on volcanic bedrock; montane moist forests on volcanic and granitic bedrock; montane wet forests on volcanic bedrock; montane wet and rain forests on granitic bedrock; and rainforests on volcanic bedrock. Puerto Rico's flora includes c.3,130 species with nearly 9% (240 spp.) endemism. Naturalised exotic species such as *Albizia procera*, *Spathodea campanulata* and *Bambusa vulgaris*, make up a high percentage of forest species, and represent an important component of the “new” forested landscape of Puerto Rico. In addition to forested areas, Puerto Rico also has diverse wetlands, including forested wetlands, such as mangroves, *Pterocarpus officinalis* and *Annona glabra* freshwater swamps,

¹ The Sociedad Ornitológica Puertorriqueña, Inc. (Puerto Rican Ornithological Society, BirdLife in Puerto Rico) is a national NGO and is referred to throughout this chapter under the acronym SOPI.

brackish and freshwater herbaceous wetlands and hypersaline saltflats. Major wetland areas include Caño Tiburones, Laguna Tortuguero, Laguna Cartagena, San Juan and Jobos bays estuaries and Cabo Rojo saltflats.

With a c.3.9 million people (429 people/km²) Puerto Rico has the highest population density in the Caribbean. Between the sixteenth to eighteenth centuries the population remained relatively small and stable, but after this is grew exponentially. This increase peaked in the second half of the twentieth century when the growth rate reach 72%. This growth rate and resultant high-density population has had a profound and detrimental affect on the island’s natural resources.

■ Conservation

Approximately 60,800 ha (about 6.8% of the country’s land area), have been designated by the government as conservation areas in Puerto Rico, but only 31,055 ha (less than 3.5%) have been acquired. The remainder are still in private or public ownership and thus threatened by development. Only land acquisition specifically for protection guarantees these areas’ final conservation. Various state and federal agencies, as well as private institutions, manage these protected areas: the Department of Natural and Environmental Resources (DNER²) is responsible for more than 90% of the total; and the United States Fish and Wildlife Service (USFWS³), United States Forest Service (USFS) and Conservation Trust of

El Yunque IBA in the Sierra de Luquillo, home to many restricted-range species including the Critically Endangered Puerto Rican Amazon and Vulnerable Elfin Woods Warbler. (PHOTO: SOP)



Puerto Rico (CTPR) manages the rest. In addition, other public agencies such as the United States Geological Survey (USGS) and the Natural Resources Conservation Service (NRCS) are involved in protecting water and soil resources through several different programs. The National Oceanic and Atmospheric Administration (NOAA) are also involved in management and protection of marine resources.

These agencies also fund and coordinate research projects, many of which are geared toward avian studies. Locally, the DNER monitors a number of bird species, implements recovery plans, and several initiatives such as the Puerto Rico Critical Wildlife Areas (PRCWA), the Atlantic Coast Joint Venture (ACJV) through the Puerto Rico Waterfowl Focus Areas (PRWFA), the Puerto Rico Gap Analysis Project (PRGAP), and the Fisheries and Wildlife Management Plan (FWMP). In addition, all research projects in the Commonwealth must have a DNER permit. The PRGAP is a joint initiative of the DNER, the U.S. Forest Service International Institute of Tropical Forestry (IITF), the North Carolina Cooperative Fish and Wildlife Research Unit (NCSU), and the U.S. Geological Survey (USGS) Biological Resources Division. At present the DNER is working on the first “Programmatic Safe Harbor Agreement” with the USFWS for the conservation of Plain Pigeon *Patagioenas inornata*. The USFWS conducts surveys of national wildlife refuges throughout the Commonwealth where management usually centres on avian resources. The Caribbean Field Office of the USFWS coordinates funding for research, establishment of management initiatives for endangered bird species, and initiatives with landowners as partners of the Fish and Wildlife Program. The U.S. Forest Service (USFS) contributes to the conservation and protection of native birds through two divisions, the El Yunque National Forest (El Yunque) and the IITF.

At El Yunque, the USFS is involved in managing and studying the resident Puerto Rican Amazon *Amazona vittata* population (until recently, the only wild extant population) in coordination with the USFWS and the DNER. The IITF conducts studies on forest birds and the implication of forestry management practices on their populations. The USGS Biological Resources Division, which collaborates with the PRGAP, has also managed the Puerto Rico Breeding Bird Survey since 1997.

2 The Department of Natural and Environmental Resources is referred to throughout this chapter by the acronym DNER.

3 The United States Fish and Wildlife Service is referred to throughout this chapter by the acronym USFWS.

The Endangered Yellow-shouldered Blackbird is endemic to Puerto Rico and has a population of just 1,250 individuals. (PHOTO: ALFREDO D. COLÓN)





Puerto Rican Nightjar, Critically Endangered and the focus of research and conservation action by SOPI and other institutions. (PHOTO: MICHAEL J. MOREL)

For many years, universities have been an important source of avian scientific research in Puerto Rico. The University of Puerto Rico's campuses at Rio Piedras, Mayagüez, Humacao and Cayey have contributed to our knowledge of local avifauna for over 30 years. The Humacao campus was home to a captive breeding program for *Patagioenas inornata* until 2000, and important research on threatened taxa such as Yellow-shouldered Blackbird *Agelaius xanthomus*, Broad-winged Hawk *Buteo platypterus brunnescens*, Sharp-shinned Hawk *Accipiter striatus venator* and Elfín-woods Warbler *Dendroica angelae* have been implemented by the UPR-Mayagüez. The North Carolina State University's Cooperative Fish and Wildlife Research Unit (NCSU) and Mississippi State University's Cooperative Fish and Wildlife Research Unit (MSU) have also studied native avifauna.

The Sociedad Ornitológica Puertorriqueña, Inc. (SOPI, BirdLife in Puerto Rico) has been coordinating bird-focused conservation efforts, including education, research, land stewardship, and the description of the island's IBAs. Other SOPI projects include the Puerto Rico Shorebird Monitoring Network (Programa Red Limícola) which has volunteers surveying important shorebird sites; the Puerto Rico Breeding Bird Atlas (coordinated by the Puerto Rico Gap Analysis Project), the first atlas project in Latin America; and eBird, in collaboration with the Cornell Lab of Ornithology and the Conservation Trust of Puerto Rico (CTPR). SOPI is the BirdLife Species Guardian for the Critically Endangered Puerto Rican Nightjar *Caprimulgus noctitherus* and, as a result of funding from the British Birdwatching Fair, will implement research to provide additional information about the species' distribution and new breeding populations, and facilitating conservation actions. SOPI has also contributed with bird data, educational activities throughout the island and supported conservation efforts implemented by local community groups. It has also collaborated in bird conservation projects with DNER, USFWS, USDA and the Society for the Conservation and Study of Caribbean Birds (SCSCB). Among the initiatives with SCSCB, are the West Indian Whistling-Duck and Wetlands Conservation Project and the Caribbean Endemic Bird Festival. Volunteers coordinate and participate in four Christmas Bird Counts sponsored by National Audubon Society (BirdLife in the US) at Fajardo, San Juan, Arecibo and Cabo Rojo. Counts have been carried out for more than 30 years at the latter site.

The island has numerous laws and regulations to protect the island's precious natural resources. Among the most important are the New Wildlife Law (1999) and its associated regulations: Regulation for Management of Vulnerable and Endangered Species (2004) and Regulation for the Management of Wildlife, Exotic Species and Hunting in the Commonwealth of Puerto Rico (2004). Also, the DNER has been responsible for protecting the coastal littoral zone (areas under tidal

influence) since its creation in 1972. As a US territory, Puerto Rico has to abide by federal laws such as the Endangered Species Act (1972), Migratory Bird Treaty Act (1918) and the Clean Water Act (1972). However, although these laws and regulations can be very strict they are rarely enforced properly due to lack of resources and government bureaucracy. Local and federal laws provide for private entities to set aside part of their land as conservation easements. The Conservation Trust of Puerto Rico (CTPR) has been working with this provision, encouraging and providing guidance to landowners willing to take advantage of the tax benefits associated with the conservation easements.

Conservation concerns on the island include habitat loss, lack of environmental education, the introduction of exotic species, illegal hunting and natural events. Habitat loss is the main threat for birds and other wildlife. Since the late twentieth century, there has been a major increase in urban expansion, with housing projects being built at a fast pace. Agricultural areas are being converted into housing projects and forested land is cleared for agriculture as well as for development. Major roads are being constructed through the island leading to more development and increased strain on natural resources, especially water. Forest fragmentation is a major concern as it promotes negative impacts from exotic species, diseases, illegal hunting, intentional fires, filling of wetlands and pollution. Ocean resources have also been impacted, reducing fish stocks and therefore affecting resident marine species. Puerto Ricans are, for the most part, unaware of their local flora and fauna. The lack of proper environmental education limits the capacity of environmentalists and land managers to conserve the natural resources of the island. The introduction of exotic species is a major concern as laws and regulations are in place but these are not enforced properly and illegal trafficking continues. In addition, some native bird species are trapped and exported, a fact that very few people are aware of. Hunting is strictly regulated and permitted only for certain species during the year, but enforcement is lacking in most areas. The number of non-licensed hunters exceeds that of the legal hunters, demonstrating the scale of the illegal hunting problem on the island. Puerto Rico lies on the path of many tropical storms and hurricanes. Since 1989, the island has endured two major hurricanes and a strong tropical storm. In 1989, Hurricane Hugo demonstrated the destructive force that these tropical systems may have on local endangered bird species, wiping out nearly half the wild population of Puerto Rican Amazon *Amazona vittata*.

Conservation needs for Puerto Rico are: land protection, education, biological information, enforcement and planning. Even though several laws exist to protect natural resources, land acquisition is the most effective way to protect important areas for birds and other wildlife. Money is a severe constraint but several NGOs and the DNER have stepped in and have been very active in finding funds for land acquisition. A major conservation need is the development of a strong educational program for land managers and their staff, environmental law enforcement personnel, lawmakers and the general public. Recent initiatives by SOPI, the SCSCB and the USFWS are raising public awareness on the importance of bird conservation. Most available information related to the ecological requirements of species is incomplete and often outdated (being based on data gathered 20–30 years ago). Efforts are being made to increase our knowledge, but information from most initiatives is not publicly available. Formerly, information was gathered mainly by the DNER and the USFWS but these agencies have since reorganised or changed their priorities. Current population trends in several species are very different from what had been published decades ago and many common species are now showing apparent declines. Also, previously unknown breeding species do not receive any conservation consideration even when immediate protection is warranted. A recent generation of biologists and an increasing group of volunteers have begun to fill the gaps through various projects including the Puerto Rico Gap Analysis Project and the Breeding Bird Atlas. The local

Table 1. Key bird species at Important Bird Areas in Puerto Rico.

Key bird species	Criteria	National population	Criteria						
			PR001	PR002	PR003	PR004	PR005	PR006	PR007
West Indian Whistling-duck <i>Dendrocygna arborea</i>	VU	60–90							
Masked Duck <i>Nomonyx dominicus</i>		90–150							
White-tailed Tropicbird <i>Phaethon lepturus</i>		450–750		237					
Magnificent Frigatebird <i>Fregata magnificens</i>		1,500–2,200	600–900						
Brown Pelican <i>Pelecanus occidentalis</i>		180–450							
Masked Booby <i>Sula dactylatra</i>		225–750	315						
Red-footed Booby <i>Sula sula</i>		3,000–9,000	3,600–7,200						
Brown Booby <i>Sula leucogaster</i>		2,400–4,500	1,800						
Black-necked Stilt <i>Himantopus mexicanus</i>									
Black-bellied Plover <i>Pluvialis squatarola</i>									
Semipalmated Plover <i>Charadrius semipalmatus</i>									
Wilson's Plover <i>Charadrius wilsonia</i>		300–600							
Kentish Plover <i>Charadrius alexandrinus</i>		30–60							
Short-billed Dowitcher <i>Limnodromus griseus</i>									
Greater Yellowlegs <i>Tringa melanoleuca</i>									
Lesser Yellowlegs <i>Tringa flavipes</i>									
Ruddy Turnstone <i>Arenaria interpres</i>									
Semipalmated Sandpiper <i>Calidris pusilla</i>									
Western Sandpiper <i>Calidris mauri</i>		708							
Least Sandpiper <i>Calidris minutilla</i>		723							
White-rumped Sandpiper <i>Calidris fuscicollis</i>		147							
Pectoral Sandpiper <i>Calidris melanotos</i>		168							
Stilt Sandpiper <i>Calidris himantopus</i>									
Royal Tern <i>Sterna maxima</i>		90–375							
Sandwich Tern <i>Sterna sandvicensis</i>		2,250–3,300							
Roseate Tern <i>Sterna dougallii</i>		1,800–2,400				250			
Least Tern <i>Sterna antillarum</i>		225–360							
Sooty Tern <i>Sterna fuscata</i>		150,000–180,000							
Brown Noddy <i>Anous stolidus</i>		3,000–6,000							
Plain Pigeon <i>Patagioenas inornata</i>	NT								
Bridled Quail-dove <i>Geotrygon mystacea</i>									
Puerto Rican Amazon <i>Amazona vittata</i>	CR	51			25–27				
Puerto Rican Lizard-cuckoo <i>Coccyzus vieilloti</i>				✓	✓	✓	✓		✓
Puerto Rican Screech-owl <i>Megascops nudipes</i>				✓	✓	✓	✓	✓	✓
Puerto Rican Nightjar <i>Caprimulgus noctitherus</i>	CR	1,500–2,000					177		12–16
Antillean Mango <i>Anthracothorax dominicus</i>				✓	✓	✓	✓	✓	✓
Green Mango <i>Anthracothorax viridis</i>				✓	✓	✓	✓	✓	✓
Green-throated Carib <i>Eulampis holosericeus</i>				✓	✓				
Antillean Crested Hummingbird <i>Orthorhynchus cristatus</i>									
Puerto Rican Emerald <i>Chlorostilbon maugaeus</i>				✓	✓	✓	✓	✓	✓
Puerto Rican Tody <i>Todus mexicanus</i>				✓	✓	✓	✓	✓	62
Puerto Rican Woodpecker <i>Melanerpes portoricensis</i>				✓	✓	✓	✓	✓	22
Lesser Antillean Pewee <i>Contopus latirostris</i>				✓	✓		✓	✓	✓
Caribbean Elaenia <i>Elaenia martinica</i>								✓	✓
Puerto Rican Flycatcher <i>Myiarchus antillarum</i>				✓	✓	✓	✓	✓	43
Puerto Rican Vireo <i>Vireo latimeri</i>				✓	✓	✓	✓	✓	50
Pearly-eyed Thrasher <i>Margarops fuscatus</i>				✓	✓	✓	✓	✓	✓
Adelaide's Warbler <i>Dendroica adelaidae</i>				✓	✓	✓	✓	✓	✓
Elfin-woods Warbler <i>Dendroica angelae</i>	VU	1,830					250–999		
Yellow-shouldered Blackbird <i>Agelaius xanthomus</i>	EN	1,250	260					<50	✓
Puerto Rican Bullfinch <i>Loxigilla portoricensis</i>				✓	✓	✓	✓	✓	68
Puerto Rican Tanager <i>Nesospingus speculiferus</i>					✓		✓		
Puerto Rican Spindalis <i>Spindalis portoricensis</i>				✓	✓	✓	✓	✓	✓
Antillean Euphonia <i>Euphonia musica</i>				✓	✓	✓	✓	✓	✓

All population figures = numbers of individuals.

Threatened birds: Critically Endangered ; Endangered ; Vulnerable ; Near Threatened . Restricted-range birds . Congregatory birds .

Important Bird Areas in the Caribbean – Puerto Rico

Puerto Rico IBAs												
PR008	PR009	PR010	PR011	PR012	PR013	PR014	PR015	PR016	PR017	PR018	PR019	PR020
█	█	█	█	█	█	█	█	█	█	█		█
█	█		█		█							█
█	█		█		█							█
				35-40					35-70			
120												300
											225-600	
2,891					500							
213					382							
381					516							
294					93							
266												
					547							
					110							
3,000					1,059							
315					173							
2,372					5,506							
708					5,506							
723					3,666							
147												
168												
19,895					4,385							
											150-465	
1,395												
300-650	350											
			81-89									
											75-105,000	
											1,440-1,860	
						200	50-249					
												✓
									26-30			
✓	✓	✓				✓	✓	✓	✓	✓		
✓	✓	✓		✓	✓	✓	✓	✓	✓	✓		✓
✓	347											
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
✓	✓	✓	✓	✓	✓	✓	✓	100	✓	✓		✓
	✓		✓	✓	✓	✓	✓		✓	✓		✓
	✓		✓	✓	✓	✓	✓		✓	✓		✓
✓	✓	✓	✓	✓	✓	✓	✓	104	✓	✓		✓
✓	✓	✓	✓	✓	✓	✓	✓	50-130	✓	✓		✓
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
✓	✓	✓	✓			✓	✓					✓
✓	✓	✓	✓	✓	✓	✓	✓	8	✓	✓		✓
✓	88	✓	✓	✓	✓	✓	✓	✓				✓
✓	✓	✓	✓	✓	✓	✓	✓	28	✓	✓		✓
✓	✓	✓	✓		✓				✓	✓		✓
								414				
994					59							
✓	26	✓	✓		✓	✓	✓	<16	✓	✓		
		✓				✓	✓	40				
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		



Punta Ventanas in the Karso del Sur IBA: effective conservation of this important Puerto Rican Nightjar area is threatened by a wind energy project. (PHOTOS: F. GONZÁLEZ)

legislature must be pressured to assign more funds and resources instead of creating more regulations. This could be achieved by a strong educational campaign and the help of a “Conservation Champion”, a charismatic person who could summon public interest and force politicians to respond accordingly. A significant factor hampering Puerto Rico’s conservation efforts is lack of proper land-use planning which has been, until recently, implemented at very small scales, usually for individual projects or municipalities. There is a clear need for an island-wide land-use framework. The Commonwealth government recently presented such a land-use plan (for Puerto Rico) but developers, conservationists and government officials have not been able to work out their different opinions and finalisation of the plan seems to have lost momentum.

■ Birds

Of Puerto Rico’s 354 recorded bird species, c.133 are known to breed and over 200 species occur as wintering Neotropical migrants, transients or vagrants. More than 45 exotic bird species have been reported in Puerto Rico and more than 35 are either well-established or have small breeding populations. The geographical position of Puerto Rico integrates a Greater Antillean and Lesser Antillean avifauna like no other island in the region. A number of the restricted-range species are shared with neighbouring islands such as Antillean Mango *Anthracothorax dominicus*, Lesser Antillean Pewee *Contopus latirostris* and Antillean Euphonia *Euphonia musica*. Of the 27 species within the Puerto Rico and Virgin Islands Endemic Bird Area (EBA), 23 are covered by the Puerto Rican IBA network. Although 27 species are known from Puerto Rico, two are now considered extinct: the White-necked Crow *Corvus leucognaphalus* and the Hispaniolan Parakeet *Aratinga chloroptera*. However, *A. chloroptera* has recently been considered as an introduced species (albeit a different subspecies), as individuals have been seen in various parts of the island.

A total of 16 breeding species are confined to the island, primarily to natural forest and woodlands, one of which—*Nesospingus*—represents a monotypic endemic genus. Waterbirds are an important component of the local avifauna representing more than 35% of the species recorded for the Commonwealth: 45 species are known to breed on the island.

Over the last 120 years a number of taxa have become extinct in Puerto Rico, namely: Limpkin *Aramus guarauna*, *Corvus leucognaphalus*, Culebra Island Parrot *Amazona vittata gracipiles* and *Aratinga chloroptera maugei*. Puerto Rican

endemics that are heading in the same direction include the Critically Endangered Puerto Rican Amazon *Amazona vittata* and Puerto Rican Nightjar *Caprimulgus noctitherus*. The wild population of *A. vittata* is estimated at c.26–30 individuals in El Yunque National Forest (IBA PR016) and 25–27 in the Rio Abajo State Forest (IBA PR003). The *Caprimulgus noctitherus* population is estimated to be 1,500–2,000 individuals, confined to the drier forests of south-western Puerto Rico. Other globally threatened species (the threat categories and national populations for which are presented in Table 1) include the endemic Yellow-shouldered Blackbird *Agelaius xanthomus* (with a population of 1,250) and the Elf-woods Warbler *Dendroica angelae* (with 1,830 individuals). At the island-level, various species are considered by the DNER and USFWS as threatened, namely: Snowy Plover *Charadrius alexandrinus* (10–20 breeding pairs); Masked Duck

Puerto Rican Woodpecker, endemic to the island and Puerto Rico’s national bird. (PHOTO: ALFREDO D. COLÓN)





Punta Soldado in the Culebra IBA—one of Puerto Rico’s major seabird sites. (PHOTOS: F. GONZÁLEZ)

Nomonyx dominicus (30–50 breeding pairs); Brown Pelican *Pelecanus occidentalis* (60–150 breeding pairs); Ruddy Duck *Oxyura jamaicensis* (200–600 breeding pairs); White-cheeked Pintail *Anas bahamensis* (200–600 breeding pairs); Caribbean Coot *Fulica caribaea* (200–400 breeding pairs); Roseate Tern *Sterna dougallii* (200–800 breeding pairs); and the migratory Piping Plover *Charadrius melodus*. Other species such as Least Tern *Sterna antillarum*, Least Grebe *Tachybaptus dominicus*, Wilson’s Plover *Charadrius wilsonia*, American Oystercatcher *Haematopus palliatus*, and Willet *Catoptrophorus semipalmatus* should be considered locally as species of concern and may warrant higher conservation status. Two subspecies of birds are locally classified as critically endangered: Puerto Rican Sharp-shinned Hawk *Accipiter striatus venator* and Puerto Rican Broad-winged Hawk *Buteo platypterus brunnescens*.

IMPORTANT BIRD AREAS

Puerto Rico’s 20 IBAs—the island’s international site priorities for bird conservation—cover 1,969 km² including marine areas, about 22% of Puerto Rico’s land area. Many of the terrestrial IBAs overlap to some extent with protected areas such as state forests, natural reserves and wildlife refuges, thus some form of protection is in place. However, only 10% of the area covered by the IBAs is under formal protection. The IBAs have been identified on the basis of 52 key bird species (listed in Table 1) that variously meet the IBA criteria. These 52 species include six globally threatened birds, all 23 (extant) restricted-range species, and 28 congregatory waterbirds/seabirds. The restricted-range species are well represented within the IBA network which also covers all the main populations of the globally threatened birds.

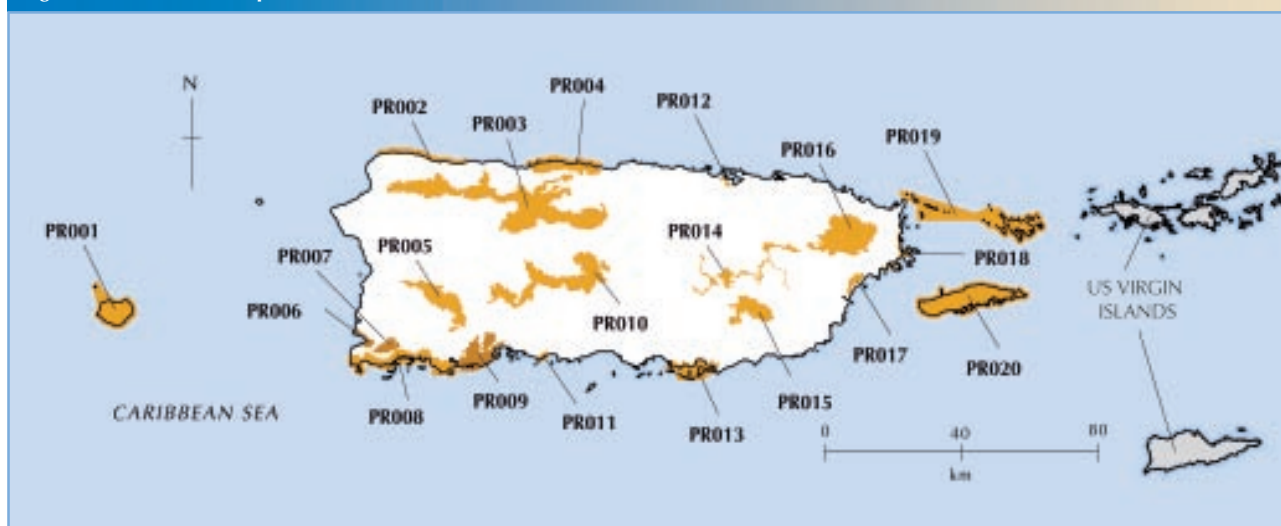
The IBA program in Puerto Rico is an initiative of the Sociedad Ornitológica Puertorriqueña, Inc. (SOPI). The program started initially in 2002 with visits (led by SOPI volunteers) to “potential” IBAs to document the presence of key bird species. A committee was established to evaluate the field survey and site information, and in June 2006 a national IBA workshop, in which state and federal personnel and NGO members participated, was held. Participants had the opportunity to review the information, discuss proposals and revise the criteria of the selected areas. The initial list of 26 proposed IBAs was consolidated to 18 selected sites. An additional two IBAs were proposed and have been included in the final inventory of 20 IBAs which embrace protected areas and privately owned lands. These 20 IBAs represent a critical network covering the full diversity of habitats for Puerto Rico’s avifauna.

SOPI is continuing to implement conservation actions at IBAs through the provision of assistance to IBA Site Support Groups; monitoring IBAs through the Shorebird Monitoring Network, Christmas Bird Counts, and eBird; and collaboration with state and federal agencies. The results from the shorebird, threatened bird and seabird monitoring undertaken by SOPI, DNER, USFWS and others should be used to inform the annual assessment of state, pressure and response variables at each IBA in order to provide an objective status assessment and highlight management interventions

Cabo Rojo Salt Flats (Suroeste IBA) with the Sierra Bermeja and Laguna Cartagena IBA in the distance: two areas where SOPI is implementing collaborative conservation projects. (PHOTOS: F. GONZÁLEZ)



Figure 1. Location of Important Bird Areas in Puerto Rico.



that might be required to maintain these internationally important biodiversity sites.

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PR001 Mona and Monito		Natural Reserve								
<p>COORDINATES 18°05'N 67°54'W</p> <p>ADMIN REGION Rincón</p> <p>AREA 10,761 ha</p> <p>ALTITUDE 0–80 m</p> <p>HABITAT Rocky areas, shrubland, coastline, sea, caves, introduced/exotic vegetation</p>	 <p style="font-size: small;">Red-footed Booby</p>	<table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: x-small; color: #0072bc;">THREATENED BIRDS</td> <td style="background-color: #0072bc; color: white; text-align: center; width: 20px;">1</td> </tr> <tr> <td style="font-size: x-small; color: #0072bc;">RESTRICTED-RANGE BIRDS</td> <td style="background-color: #ccc; width: 20px;"></td> </tr> <tr> <td style="font-size: x-small; color: #0072bc;">BIOME-RESTRICTED BIRDS</td> <td style="background-color: #ccc; width: 20px;"></td> </tr> <tr> <td style="font-size: x-small; color: #0072bc;">CONGREGATORY BIRDS</td> <td style="background-color: #0072bc; color: white; text-align: center;">✓</td> </tr> </table>	THREATENED BIRDS	1	RESTRICTED-RANGE BIRDS		BIOME-RESTRICTED BIRDS		CONGREGATORY BIRDS	✓
THREATENED BIRDS	1									
RESTRICTED-RANGE BIRDS										
BIOME-RESTRICTED BIRDS										
CONGREGATORY BIRDS	✓									

Site description

Mona and Monito IBA is situated c.66 km south-west of Mayagüez, Puerto Rico and 61 km south-east of Punta Espada, Dominican Republic, in the centre of the Mona Passage. Mona is a 5,700-ha island composed of emergent coral rock plateaus surrounded by sea cliffs and beaches, with caves found throughout. Monito is a 14-ha islet lying 5 km north-west of Mona, and is very difficult to access. The islands are extremely dry, and support four types of subtropical dry forest: cacti scrub, highland forest, coastal forest, and central lowland forest. The islands are uninhabited (except for guards and visitors) and their isolated location has limited human interventions.

Birds


This IBA is home to large numbers of seabirds including regionally significant breeding populations of Magnificent Frigatebird *Fregata magnificens*, Red-footed Booby *Sula sula*, Masked Booby *S. dactylatra* and Brown Booby *S. leucogaster*. Other seabirds observed in the IBA include Audubon’s Shearwater *Puffinus lherminieri* and Sooty Tern *Sterna fuscata*. A subspecies of the Endangered Yellow-shouldered Blackbird *Agelaius xanthomus monensis* is endemic to the IBA, with an estimated population of 260 individuals.

Other biodiversity

Mona Island supports a number of endemic taxa including the Endangered Mona blind snake *Typhlops monensis*, and the Vulnerable Mona island rock iguana *Cyclura cornuta stejnegeri* and Mona coqui *Eleutherodactylus monensis*. The Mona dwarf gecko *Sphaerodactylus monensis* and a number of reptile subspecies are also endemic. Four species of globally threatened (Critically Endangered and Endangered) sea-turtles nest on Mona Island’s beaches. The Endangered Monito gecko *Sphaerodactylus micropithecus* is endemic to Monito Island.

Conservation

Mona and Monito islands IBA is state owned and legally protected as a natural reserve. It is mainly used for conservation, although hunting, fishing, scuba-diving, and nature tourism activities are allowed to a limited degree. Feral pigs and goats are present on the islands and, in an attempt to control these populations, access is permitted to hunters during a prescribed season. The DNER has undertaken eradication programs for black rat *Rattus rattus* on Monito Island. The NGO Amigos de Amoná, Inc. promotes the sustainable-use of these islands’ resources. Threats include water pollution, invasive species, overfishing, and human disturbance.

PR002 Acantilados del Noroeste		Unprotected								
<p>COORDINATES 18°30'N 67°00'W</p> <p>ADMIN REGION Camuy, Isabela, Quebradillas, Aguadilla</p> <p>AREA 4,147 ha</p> <p>ALTITUDE 5–80 m</p> <p>HABITAT Rocky areas, coastline, sea, caves, forest, shrubland, introduced/exotic vegetation</p>	 <p style="font-size: small;">White-tailed Tropicbird</p>	<table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: x-small; color: #0072bc;">THREATENED BIRDS</td> <td style="background-color: #ccc; width: 20px;"></td> </tr> <tr> <td style="font-size: x-small; color: #0072bc;">RESTRICTED-RANGE BIRDS</td> <td style="background-color: #0072bc; color: white; text-align: center;">15</td> </tr> <tr> <td style="font-size: x-small; color: #0072bc;">BIOME-RESTRICTED BIRDS</td> <td style="background-color: #ccc; width: 20px;"></td> </tr> <tr> <td style="font-size: x-small; color: #0072bc;">CONGREGATORY BIRDS</td> <td style="background-color: #0072bc; color: white; text-align: center;">✓</td> </tr> </table>	THREATENED BIRDS		RESTRICTED-RANGE BIRDS	15	BIOME-RESTRICTED BIRDS		CONGREGATORY BIRDS	✓
THREATENED BIRDS										
RESTRICTED-RANGE BIRDS	15									
BIOME-RESTRICTED BIRDS										
CONGREGATORY BIRDS	✓									

Site description

The Acantilados del Noroeste (north-west cliffs) IBA covers the coastline from the municipality of Aguadilla to Camuy in north-west Puerto Rico, and includes the area where the Guajataca river flows into the sea at Quebradillas. It comprises the karstic fringe of the island’s northern karst zone and has sea cliffs, canyons, caves and coastal sand-dunes. The cliffs provide protection for nesting seabirds. The area is subject to strong winds and waves. The IBA includes marine areas up to 1 km from the shoreline.

Birds

The coastal cliffs of this IBA are home to a regionally significant breeding population (237 birds) of the White-tailed Tropicbird *Phaethon lepturus*. The IBA also supports populations of 15 (of the 23) Puerto Rico and the Virgin Islands EBA restricted-range species (11 of which are island endemics) which inhabit the coastal forests adjacent to the rocky areas and dunes. The

Endangered Yellow-shouldered Blackbird *Agelaius xanthomus* has been seen in this IBA, but it does not breed.

Other biodiversity



The endemic butterfly *Atlantea tulita* inhabits this IBA. Some shrubs present are the pricklybush *Oplonia spinosa*, rosewood *Drypetes ilicifolia* and the endemic *Manilkara pleeana*. The endemic shrub *Ottoschulzia rhodoxylon*, classified as Endangered by USFWS and Critically Endangered by DNER, is also found at this IBA.

Conservation

Acantilados del Noroeste IBA comprises privately-owned lands, and is unprotected. The area is used primarily for tourism, recreation and fisheries. Habitat loss and degradation is the main threat and results from housing and industrial development, invasive species, water pollution and human disturbance.

PR003 Karso del Norte State Forest/Unprotected

COORDINATES 18°22'N 66°45'W
 ADMIN REGION Arecibo, Barceloneta, Camuy, Ciales, Guaynabo, Hatillo, Isabela, Manatí, Moca, Quebradillas, Utuado
 AREA 37,893 ha
 ALTITUDE 1–490 m
 HABITAT Forest, shrubland, caves, introduced/exotic vegetation

Puerto Rican Amazon

THREATENED BIRDS	1
RESTRICTED-RANGE BIRDS	18
BIOME-RESTRICTED BIRDS	0
CONGREGATORY BIRDS	0

Site description

The Karso del Norte (northern karst) IBA stretches across north-central Puerto Rico, from Camuy in the west to Guaynabo in the east. It lies to the south of Acanilados del Noroeste (PR002) and Caño Tiburones (PR004). The IBA embraces the karstic fringe of the northern limestone formations, and contains the largest freshwater aquifer and the most extensive underground cave system on the island. It also supports the island’s most extensive mature moist forest areas.

Birds

This IBA supports populations of 18 (of the 23) Puerto Rico and the Virgin Islands EBA restricted-range species (12 of which are island endemics). The Critically Endangered Puerto Rican Amazon *Amazona vittata* was reintroduced into this IBA (starting in 2007). The 25–27 parrots now present in the area represent a second wild population of the bird (the other being in El Yunque IBA, PR016). The endemic subspecies of Broad-winged Hawk *Buteo platypterus brunnescens* (classified as critically endangered by DNER) occurs in this IBA.

Other biodiversity

The Vulnerable Desmarest’s fig-eating bat *Stenoderma rufum*, Critically Endangered bronze coqui *Eleutherodactylus*



richmondi and Endangered melodius coqui *E. wightmanae* all occur. Trees (of which there are more than 200 species) and shrubs include the Critically Endangered *Pleodendron macranthum*, *Banara vanderbiltii* and *Auerodendron pauciflorum*, and the Endangered *Goetzea elegans*. The endemic Puerto Rican boa *Epicrates inornatus* and crustacean *Alloweckelia gurneii* have also been recorded.

Conservation

Karso del Norte IBA includes the state-owned and legally protected Rio Abajo and Cambalache state forests. However, the majority of land in the IBA is privately owned. Land-use within the IBA includes conservation, research, tourism, recreation and agriculture. The José Vivaldy Puerto Rican Parrot Aviary, an initiative of the DNER and USFWS, was developed within the IBA to facilitate the reintroduction and recovery of the parrot. The NGO Ciudadanos del Karso promotes the conservation of Puerto Rico’s karst forest, and North Carolina State University undertakes research on the birds throughout this karst region. The main threats within this IBA are habitat loss and degradation, especially as a result of housing and industrial infrastructure development, invasive species and human disturbance.

PR004 Caño Tiburones Natural Reserve/Unprotected

COORDINATES 18°28'N 66°30'W
 ADMIN REGION Arecibo, Barceloneta, Manatí
 AREA 8,517 ha
 ALTITUDE 0–40 m
 HABITAT Wetlands, grassland, shrubland, rocky coast, sea, introduced/exotic vegetation

West Indian Whistling-duck

THREATENED BIRDS	1
RESTRICTED-RANGE BIRDS	14
BIOME-RESTRICTED BIRDS	0
CONGREGATORY BIRDS	✓

Site description

Caño Tiburones IBA is located on the north coast between the Manatí and Arecibo rivers, and is the largest estuarine wetland in Puerto Rico. It is located over an underground aquifer fed by springs from Karso del Norte (IBA PR003) resulting in a wide diversity of freshwater wetland habitats. The IBA includes marine areas up to 1 km offshore, and thus embraces the seabird nesting cays of Peñón de Mera (and others) to the north of the wetland.

Birds

This IBA is a significant waterbird and seabird site supporting c.30 Vulnerable West Indian Whistling-duck *Dendrocygna arborea*, and regionally important populations of Masked Duck *Nomonyx dominicus* and Roseate Tern *Sterna dougallii*. The terns breed on the cays to the north of Caño Tiburones and at Hacienda La Esperanza. The wetlands are home to large numbers of duck, herons, egrets and shorebirds. White Ibis *Eudocimus albus* have also recently been found breeding in the IBA (representing the first breeding record for Puerto Rico), and a number of vagrant waterbirds have been recorded. The shrubland supports 14 (of the 23) Puerto Rico and the Virgin Islands EBA restricted-range species (10 of which are island endemics), and the Endangered Yellow-shouldered Blackbird *Agelaius xanthomus* has been recorded visiting the IBA.

Other biodiversity

The herpetofauna includes the endemic common coqui *Eleutherodactylus coqui* and whistling coqui *E. cochranae*, the Puerto Rican slider *Trachemys stejnegeri* and Nichol’s dwarf gecko *Sphaerodactylus nicholsi townsendi*.

Conservation

The majority of lands within the Caño Tiburones IBA are state and NGO owned (and legally protected within the Caño Tiburones Natural Reserve and Hacienda La Esperanza Natural Reserve), although some are held by private landowners. Land uses include conservation, research, water resources management, hunting, fisheries, tourism and recreation. It is monitored as part of SOPI’s Shorebird Monitoring Network. Some NGOs promoting the conservation of this IBA are Ciudadanos en Defensa del Ambiente (CEDDA), Sierra Club, Comité de Amigos y Vecinos del Barrio Islote and the Sociedad Protectora de Tortugas. Threats include habitat loss and degradation, housing and industrial development, invasive species, illegal hunting, soil and water pollution caused by the presence of a nearby landfill site, and human disturbance.

PR005 Maricao and Susúa State Forest/Unprotected

COORDINATES 18°07'N 66°57'W
 ADMIN REGION Maricao, San Germán, Yauco, Sabana Grande
 AREA 8,555 ha
 ALTITUDE 60–900 m
 HABITAT Forest, shrubland, caves, introduced/exotic vegetation




Elfin-woods Warbler

THREATENED BIRDS	2
RESTRICTED-RANGE BIRDS	18
BIOME-RESTRICTED BIRDS	0
CONGREGATORY BIRDS	0

Site description

Maricao and Susúa IBA is in the Cordillera Central of central south-western Puerto Rico, in the municipalities of Maricao, Sabana Grande, San Germán and Yauco. The forests of this IBA grow on serpentine soils, setting them apart from other forests on the island, and resulting in high floristic and faunal diversity.

Birds

This IBA is home to 18 (of the 23) Puerto Rico and the Virgin Islands EBA restricted-range species (14 of which are island endemics), including significant populations of the Critically Endangered Puerto Rican Nightjar *Caprimulgus noctitherus* (177 individuals) and Vulnerable Elfin-woods Warblers *Dendroica angelae*. The IBA is one of only two areas known to support populations of this rare warbler (the other being El Yunque IBA, PR016). It also has the largest population of the endemic Sharp-shinned Hawk *Accipiter striatus venator* subspecies (classified as critically endangered by DNER).

Other biodiversity

Trees present in Susúa include the Endangered *Stahlia monosperma*, and the endemic *Polygala cowelli*, *Ottoschulzia rhodoxylon*, and *Calophyllum cabala*. The Puerto Rican helmet orchid *Cranichis ricartii* (classified as endangered by the DNER), is also present. The endemic blue-tailed ground lizard *Ameiva wetmorei* occurs.

Conservation

Maricao and Susúa IBA incorporates the state-owned and legally protected Maricao State Forest and Susúa State Forest, but the IBA also includes privately-owned (and therefore unprotected) areas including state forest buffer zones and corridors. Lands are used for conservation, research, tourism and recreation. The main threats at this IBA are habitat loss and degradation, primarily resulting from infrastructure and housing development, invasive species, water pollution and human disturbance.

PR006 Guaniquilla and Boquerón Nature Reserve/Wildlife Refuge/Unprotected

COORDINATES 18°00'N 67°10'W
 ADMIN REGION Cabo Rojo
 AREA 1,152 ha
 ALTITUDE 0–50 m
 HABITAT Coastline, forest, shrubland, wetland, introduced/exotic vegetation




Yellow-shouldered Blackbird

THREATENED BIRDS	1
RESTRICTED-RANGE BIRDS	16
BIOME-RESTRICTED BIRDS	0
CONGREGATORY BIRDS	0

Site description

Guaniquilla and Boquerón IBA is in south-westernmost Puerto Rico, in the municipality of Cabo Rojo. It includes part of Boquerón village to the east and Punta Melones to the south. It is separated from the Suroeste IBA (PR008, which lies to the south) by Combate village. This IBA is characterised by dry coastal forest, beaches, saltflats and mangroves swamps. At Guaniquilla there are karst formations inside the lagoons, and also caves (including one named after the pirate Cofresi).

Birds

This IBA supports populations of 16 (of the 23) Puerto Rico and the Virgin Islands EBA restricted-range species (10 of which are island endemics), including the Endangered Yellow-shouldered Blackbird *Agelaius xanthomus*. The blackbird has a population of less than 50 individuals in this IBA, diminished by a combination of habitat loss and Shiny Cowbird *Molothrus bonariensis* brood-parasitism. It is possible that the Critically Endangered Puerto Rican Nightjar *Caprimulgus noctitherus* occurs in these forests and this should be the focus of future research. Migratory shorebirds such as Black-bellied Plover

Pluvialis squatarola and Greater Yellowlegs *Tringa melanoleuca* frequent the lagoons.

Other biodiversity

The endemic Cook's anole *Anolis cooki* (classified as endangered by DNER, and confined to south-west Puerto Rico), inhabits the dry forests in this IBA.

Conservation

Guaniquilla and Boquerón IBA lands are mainly state and NGO owned, and are legally protected within the Punta Guaniquilla Nature Reserve and Boquerón Wildlife Refuge. However, the IBA does contain some privately-owned land. Lands are used for conservation, research, hunting, tourism, recreation and pasture. The Yellow-shouldered Blackbird Recovery Project, run by DNER, monitors this species on a regular basis. SOPI's Shorebird Monitoring Network also operates at this site. Hunting is permitted during the designated season in the wildlife refuge. Major threats include: habitat lost and degradation, housing and industrial development, invasive species, water pollution and human disturbance.

PR007 Sierra Bermeja and Laguna Cartagena

National Wildlife Refuge/Unprotected

COORDINATES 17°59'N 67°06'W
ADMIN REGION Cabo Rojo, Lajas
AREA 1,979 ha
ALTITUDE 11–301 m
HABITAT Shrubland, grassland, forest, wetlands, introduced/exotic vegetation



THREATENED BIRDS 3
RESTRICTED-RANGE BIRDS 18
BIOME-RESTRICTED BIRDS
CONGREGATORY BIRDS

Site description

Sierra Bermeja and Laguna Cartagena IBA is located in southwestern Puerto Rico. It is surrounded by Guaniquilla and Boquerón IBA (PR006) to the west and Suroeste IBA (PR008) to the south and east. Part of the Maguayo community is within the IBA's eastern boundary. Sierra Bermeja (1,537 ha) is a series of hills (the highest being Cerro Mariquita) over the oldest rocks on the Caribbean Plate, south of Laguna Cartagena (428 ha). It is an area of high biodiversity, geological importance and low housing development. Laguna Cartagena is fed by rainfall and runoff from irrigation channels of the Lajas Valley.

Birds

This IBA supports populations of 18 (of the 23) Puerto Rico and the Virgin Islands EBA restricted-range species (12 of which are island endemics), including a population of 12–16 Critically Endangered Puerto Rican Nightjar *Caprimulgus noctitherus*, and the Endangered Yellow-shouldered Blackbird *Agelaius xanthomus*. Laguna Cartagena is home to a population of 30 Vulnerable West Indian Whistling-duck *Dendrocygna arborea*. It is also an important nesting site for waterbirds, and number of vagrants been recorded in this IBA.

Other biodiversity

Flora at this IBA includes shrubs such as the Critically Endangered *Eugenia woodburyana*, the Endangered *Stahlia monosperma*, and *Vernonia proctorii*, *Aristida portoricensis* and *Ottoschulzia rhodoxylon* (all of which are considered endangered by USFWS). The mistletoe *Dendrophthora bermejae* is restricted to just a few areas in the south-west of the IBA.

Conservation

Sierra Bermeja and Laguna Cartagena IBA includes the federally-owned and legally protected Laguna Cartagena National Wildlife Refuge, but other parts of the IBA are under private ownership and remain unprotected. Lands are used for agriculture, hunting, conservation, research, pasture, tourism and recreation. A conservation plan (entitled “A call to protect Sierra Bermeja for future generations”) has been developed by SOPI. The NGO Comité Caborrojeños Pro Salud y Ambiente is leading a reforestation project and promotes the conservation of the Sierra Bermeja. Main threats are habitat loss and degradation, housing and industrial development, invasive species such as patas monkey *Erythrocebus patas* and rhesus macaque *Macaca mulatta*, soil and water pollution, diversion of runoff, and human disturbance.

PR008 Suroeste

National Wildlife Refuge/Natural Reserve/State Forest/Unprotected

COORDINATES 17°57'N 67°03'W
ADMIN REGION Cabo Rojo, Lajas
AREA 13,600 ha
ALTITUDE 5–155 m
HABITAT Forest, shrubland, grassland, wetlands, coastline, rocky areas, sea, introduced/exotic vegetation



THREATENED BIRDS 2
RESTRICTED-RANGE BIRDS 18
BIOME-RESTRICTED BIRDS
CONGREGATORY BIRDS ✓

Site description

Suroeste IBA covers an area along the south coast of southwestern Puerto Rico, extending from Cabo Rojo, east through La Parguera to Guánica. It includes marine areas up to 1 km from the coast and includes a number of offshore cays. The IBA supports various ecosystems including dry coastal forest (with cacti, mesquite etc.), saltflats, saline lagoons and mangrove swamps. However, the forests are mostly secondary, having been affected by agricultural practices.

Birds

This IBA supports populations of 18 (of the 23) Puerto Rico and the Virgin Islands EBA restricted-range species (12 of which are island endemics), including unknown numbers of the Critically Endangered Puerto Rican Nightjar *Caprimulgus noctitherus*, and almost 80% of the known Endangered Yellow-shouldered Blackbird *Agelaius xanthomus* population. This IBA is also significant for its waterbirds. Over 20,000 shorebirds (including Neotropical migratory species) congregate on the Cabo Rojo Salt Flats, and large numbers also present on the Papayo Salt Flats in Lajas. Regionally significant populations of Brown Pelican *Pelecanus occidentalis*, Sandwich Tern *Sterna sandvicensis*, Roseate Tern *S. dougallii*, Wilson's Plover *Charadrius wilsonia*, Snowy Plover *C. alexandrinus* and Stilt Sandpiper *Calidris himantopus*



also occur. The Near Threatened Piping Plover *Charadrius melodus* is an annual visitor to the IBA (in small numbers).

Other biodiversity

The coastal waters are inhabited by Critically Endangered leatherback *Dermochelys coriacea* and hawksbill *Eretmochelys imbricata*, and Endangered green *Chelonia mydas* turtles, and also the Vulnerable West Indian manatee *Trichechus manatus*.

Conservation

Suroeste IBA embraces the Cabo Rojo National Wildlife Refuge, Papayo Salt Flats Natural Reserve, La Parguera Natural Reserve and the Boquerón State Forest—all variously state-, federal- and NGO-owned legally protected areas. However, parts of the IBA are privately-owned and unprotected. Land is used for agriculture, fisheries, conservation, tourism, recreation and pasture. DNER coordinates the Yellow-shouldered Blackbird Recovery Project in this IBA and SOPI's Shorebird Monitoring Network operates at a number of wetland sites within the IBA. The local NGO Comité Caborrojeños Pro Salud y Ambiente promotes conservation and education projects. Threats include development of industrial and housing infrastructure, invasive species such as *Erythrocebus patas* and *Macaca mulatta*, water pollution and human disturbance.

PR009 Karso del Sur		State Forest/Natural Reserve/Biosphere Reserve/Unprotected	
<p>COORDINATES 17°58'N 66°50'W ADMIN REGION Guayanilla, Guánica, Yauco, Guayanilla AREA 8,162 ha ALTITUDE 1–240 m HABITAT Forest, shrubland, coastline, rocky areas, wetlands, introduced/exotic vegetation</p>		 <p>Puerto Rican Nightjar</p>	<p>THREATENED BIRDS 2</p> <p>RESTRICTED-RANGE BIRDS 19</p> <p>BIOME-RESTRICTED BIRDS</p> <p>CONGREGATORY BIRDS ✓</p>

Site description

Karso del Sur IBA covers the dry forest zone from Guánica to Ponce along the southern coast of Puerto Rico. It includes the Guánica Dry Forest (biosphere reserve) containing a well preserved and exceptionally diverse dry subtropical forest with xerophytic vegetation on karst soils. The IBA includes marine areas (and a number of cays) up to 1 km from the coast.

Birds

The forests and shrubland in this IBA are home to 19 (of the 23) Puerto Rico and the Virgin Islands EBA restricted-range species (11 of which are island endemics), including the largest known population (c.20% of the total) of the Critically Endangered Puerto Rican Nightjar *Caprimulgus noctitherus*. The IBA also supports a regionally significant breeding population of Roseate Tern *Sterna dougallii*. Small numbers of Brown Pelican *Pelecanus occidentalis* nest on Don Luis Cay—one of the few nesting locations for the species in Puerto Rico.



Other biodiversity

The herpetofauna includes the Critically Endangered Puerto Rican crested toad *Bufo lemur*, and the endemic blue-tailed

ground lizard *Ameiva wetmorei*. The IBA has more than 700 plant species including the Critically Endangered Woodbury’s stopper *Eugenia woodburyana*, Vahl’s boxwood *Buxus vahlii* and Puerto Rico manjack *Cordia rupicola*, and the Endangered lignumvitae *Guaiacum officinale* and *Stahlia monosperma*.

Conservation

Karso del Sur IBA includes the state-owned and legally protected Guanica State Forest (Puerto Rico’s second UNESCO-designated biosphere reserve) and Bahia Ballena Natural Reserve, but also privately owned lands. The land in this IBA is variously used for conservation, research, pasture, tourism and recreation. Since 1973, annual bird migration studies have been carried out in the Guánica State Forest. The NGO Coalición Pro Bosque Seco Ventanas Verraco, is promoting the integration of Punta Verraco, Ventanas and Cerro Toro (currently in private hands) into the Guánica protected area. A wind energy project threatens the effective conservation of this IBA. Habitat loss and degradation is occurring as a result of housing and industrial development, invasive species, water pollution and human disturbance.

PR010 Cordillera Central		State Forest/Protected Natural Area/Unprotected	
<p>COORDINATES 18°10'N 66°37'W ADMIN REGION Orocovis, Ciales, Jayuya, Juana Díaz, Ponce, Utuado, Adjuntas, Peñuelas, Guayanilla, Yauco AREA 18,250 ha ALTITUDE 220–1,338 m HABITAT Forest, introduced/exotic vegetation</p>		 <p>Puerto Rican Tanager</p>	<p>THREATENED BIRDS</p> <p>RESTRICTED-RANGE BIRDS 16</p> <p>BIOME-RESTRICTED BIRDS</p> <p>CONGREGATORY BIRDS</p>

Site description

The Cordillera Central IBA embraces the forested mountains of central Puerto Rico, creating an ecological corridor between five protected areas. These forests, classified as subtropical humid forest are characterised by high annual rainfall and relatively low temperatures. The IBA includes the mountains of Cerro Punta (1,338 m) and Monte Guilarte (1,204 m), and several north-flowing rivers, such as the Arecibo River, traverse the IBA.

Birds

This IBA supports populations of 16 (of the 23) Puerto Rico and the Virgin Islands EBA restricted-range species (12 of which are island endemics), including the Puerto Rican Tanager *Nesospingus speculiferus* (an endemic, monotypic genus) which occurs in relatively few of the IBAs. The forests are important for a number of wintering Neotropical migratory warbler species (including Magnolia Warbler *Dendroica magnolia*, Cape May Warbler *D. tigrina* and Black-throated Green Warbler *D. virens*), and the endemic Sharp-shinned Hawk *Accipiter striatus venator* subspecies (classified as critically endangered by DNER) occurs in the Toro Negro and Guilarte state forests within the IBA.

Other biodiversity

The herpetofauna at this IBA include the Critically Endangered Eneida’s coqui *Eleutherodactylus eneidae*, the Endangered melodius coqui *E. wightmanae*, and the common coqui *E. coqui*, barred anole *Anolis stratulus*, emerald anole *A. evermanni* and Puerto Rican boa *Epicrates inornatus*.

Conservation

Cordillera Central IBA includes state owned and legally protected lands in the form of Toro Negro State Forest, Guilarte State Forest, Bosque del Pueblo, Río Encantado Protected Natural Area, and Tres Picachos State Forest, but also areas in under private ownership. Land-uses include conservation, research, agriculture and recreation, with a number of urban areas sited within the IBA. The NGO Casa Pueblo leads activities focused on protection, education and natural resources management at Bosque del Pueblo. The major threats are habitat loss and degradation from housing and industrial development, invasive species, water pollution and human disturbances.

PR011 Salinas de Punta Cucharas **Unprotected**

COORDINATES 17°58'N 66°39'W
 ADMIN REGION Ponce
 AREA 661 ha
 ALTITUDE 0–10 m
 HABITAT Coastline, sea, wetlands, mangroves, introduced/exotic vegetation, shrubland




THREATENED BIRDS
 RESTRICTED-RANGE BIRDS 14
 BIOME-RESTRICTED BIRDS
 CONGREGATORY BIRDS ✓

Site description

Punta Cucharas IBA is on the coast of central-south Puerto Rico, on the south-western limits of Ponce municipality. It is an area of dry coastal forest, saltflats, open water and mangroves, and includes marine areas up to 1 km from the coast and thus embraces Arena cay. The salinas are bounded to the north by the P.R. State Road #2, and to the west and east by tourist and urban developments.

Birds

This IBA supports a regionally significant breeding population of Least Tern *Sterna antillarum*. Other waterbirds occur (including shorebirds, Royal Tern *S. maxima* and White-cheeked Pintail *Anas bahamensis*) but not in significant numbers. The shrublands and mangroves are home to 14 (of the 23) Puerto Rico and the Virgin Islands EBA restricted-range species (10 of which are island endemics). The Endangered Yellow-shouldered Blackbird *Agelaius xanthomus* has occurred as a visitor to this IBA. Antillean Nighthawks *Chordeiles gundlachii* nest at the edge of the saltflats.

Other biodiversity



The herpetofauna recorded in this IBA includes the common coqui *Eleutherodactylus coqui*, dryland grass anole *Anolis poncensis*, crested anole *A. cristatellus*, common grass anole *A. pulchellus* and Puerto Rican ground lizard *Ameiva exsul*.

Conservation

Salinas de Punta Cucharas IBA includes lands owned privately, and none of it is protected. The area is used for tourism, fisheries and recreation. The NGO Amigos de la Laguna leads conservation efforts and educational activities at the site. The IBA is also monitored as part of SOPI's Shorebird Monitoring Network. Main threats include habitat loss and degradation at the hands of housing and industrial infrastructure development, invasive species, water pollution and human disturbances. Housing, infrastructure and highway development on the northern side of the IBA could limit the flow of freshwater into the wetland.

PR012 Ciénaga Las Cucharillas **Unprotected**

COORDINATES 18°26'N 66°08'W
 ADMIN REGION Cataño
 AREA 395 ha
 ALTITUDE 1–3 m
 HABITAT Wetlands, mangroves, shrubland, introduced/exotic vegetation

THREATENED BIRDS 1
 RESTRICTED-RANGE BIRDS 9
 BIOME-RESTRICTED BIRDS
 CONGREGATORY BIRDS

Site description

Ciénaga Las Cucharillas IBA lies just to the west of San Juan on the north coast of Puerto Rico. It is an estuarine system on the north-western side of the Bahía de San Juan, the largest bay on the island, and contains a system of bays, channels, and lagoons connected to the Atlantic Ocean. The IBA includes: Secret Lagoon, Bahía de San Juan, Caño Martín Peña, San José Lagoon, Los Corozos Lagoon, Suarez Channel, La Torrecilla Lagoon, Piñones Lagoon, Condado Lagoon, and the San Antonio Channel. Vegetation includes large areas of mangrove, dragonsblood tree *Pterocarpus officinalis*, and cattail *Typha domingensis* marsh.

Birds

This IBA is home to a significant breeding population (35–40 individuals) of the Vulnerable West Indian Whistling-duck *Dendrocygna arborea*. Other waterbirds occur, including nesting populations of Ruddy Duck *Oxyura jamaicensis* and the Near Threatened Caribbean Coot *Fulica caribaea* (both classified as vulnerable by the DNER), but not in significant numbers. The IBA also supports nine (of the 23) Puerto Rico and the Virgin Islands EBA restricted-range species (six of which are island endemics). The Endangered Yellow-

shouldered Blackbird *Agelaius xanthomus* has recorded visiting the IBA.

Other biodiversity

The endemic common coqui *Eleutherodactylus coqui* and barred anole *Anolis stratullus* occur.

Conservation

Ciénaga Las Cucharillas IBA includes lands owned privately, and none of it is protected. However, it is under the management of the San Juan Bay Estuary Consortium (itself managed by the local government) which has conservation, management and education as its major goals. The consortium has identified Ciénaga Las Cucharillas and the Secret Lagoon as having the highest diversity of waterbirds within the San Juan Bay estuary. The IBA has been proposed for acquisition in order to ensure its eventual conservation and restoration. The NGOs Ciudadanos Unidos en contra de la Contaminación (CUCCO) and Corredor del Yaguazo have been leading conservation initiatives at the site. Threats include habitat loss and degradation from housing and industrial infrastructure development, invasive species, air, soil and water pollution, and human disturbance.

PR013 Bahía de Jobos

COORDINATES 17°56'N 66°13'W
ADMIN REGION Guayama, Salinas
AREA 6,917 ha
ALTITUDE 0–14 m
HABITAT Forest, mangrove, shrubland, coastline, sea, wetlands, introduced/exotic vegetation



Yellow-shouldered Blackbird

Wildlife Reserve

THREATENED BIRDS	1
RESTRICTED-RANGE BIRDS	16
BIOME-RESTRICTED BIRDS	
CONGREGATORY BIRDS	<input checked="" type="checkbox"/>

Site description

Bahía de Jobos IBA is on the south coast of eastern Puerto Rico in the municipalities of Guayama and Salinas. It is the second largest bay in the island, and the IBA includes small mangrove islands to the south that are surrounded by sea-grass beds, coral reefs and channels between the cays. It is mainly an estuarine system, fed by groundwater and freshwater springs from the easternmost section of the Cordillera Central. The bay includes hypersaline lagoons, saltponds and other wetland habitats.

Birds

This wetland IBA hosts over 20,000 shorebirds on an annual basis. Migratory birds such as Semipalmated Sandpiper *Calidris pusilla*, Western sandpiper *C. mauri*, Least Sandpiper *C. minutilla* and Stilt Sandpiper *C. himantopus* are the most numerous species, but many others occur and shorebirds like Wilson's Plover *Charadrius wilsonia* and Willet *Catoptrophorus semipalmatus* breed. The IBA supports populations of 16 (of the 23) Puerto Rico and the Virgin Islands EBA restricted-range species (nine of which are island endemics), including an important population of the Endangered Yellow-shouldered Blackbird *Agelaius xanthomus*

which nests on the cays. The Near Threatened Plain Pigeon *Patagioenas inornata* has been observed in the Aguirre Forest, although not in significant numbers.

Other biodiversity

The Vulnerable West Indian manatee *Trichechus manatus*, Critically Endangered hawksbill *Eretmochelys imbricata* and Endangered green *Chelonia mydas* turtles frequent marine areas within the IBA.

Conservation

Bahía de Jobos IBA is state owned and legally protected as a wildlife reserve. The area is used for conservation, research, tourism, conservation, fisheries, agriculture and pasture. The reserve's environmental monitoring program has carried out research on abiotic parameters, biodiversity and land-use patterns as well as community education and participation projects. The IBA is included within SOPI's Shorebird Monitoring Network and thus the shorebirds are monitored on a regular basis. Although protected, the IBA is threatened by habitat loss and degradation from housing and industrial development, invasive species, water pollution and human disturbances.

PR014 Este Central

COORDINATES 18°12'N 66°05'W
ADMIN REGION Aguas Buenas, Caguas, Cidra, Comerio, Gurabo, Juncos, San Lorenzo
AREA 5,166 ha
ALTITUDE 45–550 m
HABITAT Forest, introduced/exotic vegetation



Plain Pigeon

Unprotected

THREATENED BIRDS	1
RESTRICTED-RANGE BIRDS	17
BIOME-RESTRICTED BIRDS	
CONGREGATORY BIRDS	

Site description

Este Central IBA is in the central eastern part of the island, to the north of Carite IBA (PR015) and west of El Yunque (PR016). The IBA boundary follows the watershed of the Cidra River and reservoir. It is an area of freshwater systems, humid forest and high rainfall. The forests provide important habitat for the Plain Pigeon *Patagioenas inornata*.

Birds

This IBA supports populations of 17 (of the 23) Puerto Rico and the Virgin Islands EBA restricted-range species (12 of which are island endemics) including Puerto Rican Lizard-cuckoo *Coccyzus vieilloti*, Puerto Rican Screech-owl *Megascops nudipes*, Green Mango *Anthracothonax viridis*, Puerto Rican Emerald *Chlorostilbon maugaeus*, Puerto Rican Tody *Todus mexicanus*, Puerto Rican Woodpecker *Melanerpes portoricensis*, Puerto Rican Flycatcher *Myiarchus*

antillarum, Puerto Rican Vireo *Vireo latimeri*, Puerto Rican Bullfinch *Loxigilla portoricensis* and Puerto Rican Spindalis *Spindalis portoricensis*. A significant population (200 birds) of the Near Threatened *Patagioenas inornata* occurs within the IBA.

Other biodiversity

The endemic common grass anole *Anolis pulchellus* and crested anole *A. cristatellus* occur.

Conservation

Este Central IBA is privately owned and unprotected, leaving this important catchment area exposed to expanding housing and infrastructure developments which are being built at the expense of the forest. Invasive species, storms and human disturbance are also threatening the habitat and birds within this IBA.

PR015 Carite	State Forest/Unprotected
<p>COORDINATES 18°06'N 66°04'W ADMIN REGION Caguas, Cayey, Guayama, Patillas, San Lorenzo, Yabucoa AREA 6,000 ha ALTITUDE 190–910 m HABITAT Forest, introduced/exotic vegetation</p>	<p>THREATENED BIRDS 1 RESTRICTED-RANGE BIRDS 15 BIOME-RESTRICTED BIRDS CONGREGATORY BIRDS </p>



Site description

Carite IBA is in central-eastern Puerto Rico, and covers an area of subtropical humid forest in the watersheds of the Loiza, Patillas and Plata rivers. The latter is the longest river (97 km) in Puerto Rico. Este Central IBA (PR014) lies to the north. The Carite forests support more than 200 species of tree including candle tree *Dacryodes excelsa*, leatherwood *Cyrilla racemiflora*, mahogany *Swietenia macrophylla*, Caribbean pine *Pinus caribaea*, assai palm *Euterpe globosa*, Puerto Rican royal palm *Roystonea borinquena* and the endemic shrub *Micropholis garciniifolia*.

Birds

This IBA supports populations of 15 (of the 23) Puerto Rico and the Virgin Islands EBA restricted-range species (11 of which are island endemics). A significant population (249 birds) of the Near Threatened Plain Pigeon *Patagioenas inornata* occurs within the IBA. The Vulnerable Elfin-woods Warbler *Dendroica angelae* was suspected to be present in this IBA, but recent research has been unable to confirm its presence. The endemic subspecies of Broad-winged Hawk *Buteo platypterus*

brunnescens and the Sharp-shinned Hawk *Accipiter striatus venator* (both classified as critically endangered by the DRNA, and endangered by USFWS) which are confined to humid montane forest, both occur in this IBA.

Other biodiversity

The Endangered Hedrick’s coqui *Eleutherodactylus hedricki* and melodius coqui *E. wightmanae* both occur. The IBA used to support populations of the Critically Endangered golden coqui *E. jasperi*, Eneida’s coqui *E. eneidae* and web-footed coqui *E. karlschmidti*, but these species are currently presumed extinct in this forest.

Conservation

Much of Carite IBA is state owned and legally protected as a state forest, but some areas under private ownership are included within the IBA. Land use is mainly for conservation, research and tourism. Private lands in the IBA (such as in the state forest buffer zones) are threatened by habitat loss from housing and infrastructure development, and human disturbance. Invasive species are a problem for the whole IBA.

PR016 El Yunque	National Forest/Biosphere Reserve/Unprotected
<p>COORDINATES 18°17'N 65°47'W ADMIN REGION Canóvanas, Ceiba, Fajardo, Juncos, Las Piedras, Luquillo, Naguabo, Rio Grande AREA 15,306 ha ALTITUDE 40–1,060 m HABITAT Forest, introduced/exotic vegetation</p>	<p>THREATENED BIRDS 2 RESTRICTED-RANGE BIRDS 18 BIOME-RESTRICTED BIRDS CONGREGATORY BIRDS </p>



Site description

El Yunque IBA is in the Sierra de Luquillo, at the eastern end of the island. It lies to the west of Ceiba and Naguabo IBA (PR018) and north of Carite IBA (PR015). The IBA includes areas down to 40 m elevation, but is primarily a montane area with high rainfall (ranging between 2,000 to 5,000 mm per year). El Yunque IBA is the watershed for four main rivers namely Rio Mameyes (Puerto Rico’s last pristine river), Rio Blanco, Rio Fajardo and Rio Espíritu Santo. The main vegetation types include tabonuco, palo colorado, sierra palm, and cloud forests.

Birds

This IBA supports one of only two wild populations of the Critically Endangered Puerto Rican Amazon *Amazona vittata* (the other being of recently reintroduced birds at Karso del Norte IBA, PR003). The 18 individuals at El Yunque is the remnant of a population reduced by habitat destruction, removal of chicks, and hurricanes. The IBA supports 18 (of the 23) Puerto Rico and the Virgin Islands EBA restricted-range species (12 of which are island endemics), including the parrot and the Vulnerable Elfin-woods Warbler *Dendroica angelae* (which occurs only in this IBA and the Maricao and Susúa IBA, PR007). The largest populations of the endemic Broad-winged Hawk *Buteo platypterus brunnescens* and the

Sharp-shinned Hawk *Accipiter striatus venator* subspecies (both classified as critically endangered by DRNA, and endangered by USFWS) are in this IBA.

Other biodiversity

The Critically Endangered webbed-footed coqui *Eleutherodactylus karlschmidti* and the endemic Puerto Rican boa *Epicrates inornatus* occur. There are 23 species of tree endemic to this forest, and shrubs include the Critically Endangered *Ternstroemia subsessilis* and *Styrax portoricensis*.

Conservation

Most of El Yunque IBA is state owned and legally protected (since 1876) as a national forest, although some privately owned lands are included within the IBA. The IBA is a UNESCO-designated biosphere reserve. Land is used for conservation, research, tourism and recreation. The Puerto Rican Parrot Recovery Program, led by USFWS, USDA and DRNA, and with the Iguaca Aviary, has coordinated activities aimed at the parrot’s long-term conservation. Organisations leading conservation efforts in the national forest’s buffer zone are Coalición Pro Corredor Ecológico del Noreste and Liga de Conciencia Ambiental del Este. Threats come from housing and infrastructure development at the edge of the forest, habitat degradation, invasive species and hurricanes.

PR017 Humacao

Wildlife Refuge/Natural Reserve

COORDINATES 18°10'N 65°46'W
ADMIN REGION Humacao, Naguabo
AREA 1,378 ha
ALTITUDE 1–60 m
HABITAT Forest, shrubland, coastline, sea, wetlands, introduced/exotic vegetation



THREATENED BIRDS	1
RESTRICTED-RANGE BIRDS	13
BIOME-RESTRICTED BIRDS	
CONGREGATORY BIRDS	

Site description

Humacao IBA is on the coast of eastern Puerto Rico, bordered by the village of Punta Santiago to the east and Humacao town to the south-west. It extends to Naguabo municipality in the north. The IBA consists of brackish lagoons, coastal mangroves and beaches.

Birds

This IBA is home to a significant breeding population (35–70 individuals) of the Vulnerable West Indian Whistling-duck *Dendrocygna arborea*. Many other waterbirds occur, including White-cheeked Pintail *Anas bahamensis* (classified as vulnerable by DNER) and Purple Gallinule *Porphyrio martinica* but not in significant numbers. The IBA also supports 13 (of the 23) Puerto Rico and the Virgin Islands EBA restricted-range species (eight of which are island endemics), namely: Puerto Rican Lizard-cuckoo *Coccyzus vieilloti*, Puerto Rican Screech-owl *Megascops nudipes*, Green Mango *Anthracothorax viridis*, Puerto Rican Tody *Todus mexicanus*, Puerto Rican Woodpecker *Melanerpes portoricensis*, Puerto Rican Flycatcher *Myiarchus antillarum*, Adelaide's Warbler *Dendroica adelaidae*, Puerto Rican Bullfinch *Loxigilla portoricensis* and Puerto Rican Spindalis *Spindalis portoricensis*.

Other biodiversity

The beaches of this IBA are used for nesting by the Critically Endangered leatherback *Dermochelys coriacea* and hawksbill *Eretmochelys imbricata*, and Endangered loggerhead *Caretta caretta* turtles. Other reptiles include the endemic Puerto Rican slider *Trachemys stejnegeri stejnegeri*, crested anole *Anolis cristatellus* and common grass anole *A. pulchellus*. Puerto Rico's largest stand of bloodwood *Pterocarpus officinalis* grows in the freshwater swamps of this IBA.

Conservation

Humacao IBA is state owned and legally protected as the Humacao Wildlife Refuge and Humacao Pterocarpus Forest Natural Reserve. The area is used for conservation, research, tourism, recreation and hunting. The Programa de Educación Comunal de Entrega y Servicio (PECES) has an agreement with the DNER and Tourism Company to promote ecotourism micro-enterprise development at the reserve. Principal threats come from the increasing salinity of the lagoons and residual pesticides from agriculture. Other threats include encroaching infrastructure and housing development, invasive species, water pollution, storms and human disturbance. Hunting is only permitted at certain times of the year in designated areas and is regulated by the DNER.

PR018 Ceiba and Naguabo

State Forest/Unprotected

COORDINATES 18°15'N 65°38'W
ADMIN REGION Ceiba, Naguabo
AREA 1,987 ha
ALTITUDE 1–70 m
HABITAT Coastline, shrubland, forest, introduced/exotic vegetation



THREATENED BIRDS	
RESTRICTED-RANGE BIRDS	16
BIOME-RESTRICTED BIRDS	
CONGREGATORY BIRDS	

Site description

Ceiba and Naguabo IBA is on the easternmost coast of mainland Puerto Rico. It lies east of El Yunque (IBA PR016) and stretches from the coast of Fajardo in the north, south along the coast to Naguabo municipality. The IBA comprises dry coastal forest, mangroves, sandy beaches and coral reefs.

Birds

This IBA supports populations of 16 (of the 23) Puerto Rico and the Virgin Islands EBA restricted-range species (10 of which are island endemics) including the Antillean Crested Hummingbird *Orthorhynchus cristatus* which in Puerto Rico is mainly confined to the south-east. The population of the Endangered Yellow-shouldered Blackbird *Agelaius xanthomus* has declined within this IBA in recent years, but the area is still considered as important habitat for the bird.

Other biodiversity

The Vulnerable West Indian manatee *Trichechus manatus* is present in the coastal waters of this IBA.

Conservation

Ceiba and Naguabo IBA is owned by the state and is legally protected within the Ceiba State Forest. Land is used for conservation, research, tourism, recreation and, in the past, by the military. The Yellow-shouldered Blackbird Recovery Project monitors this species within the IBA. The Alianza Pro Desarrollo de Ceiba (APRODEC) is a consortium of several organisations which are working on projects related to sustainable tourism, alternatives for cultural and social development, collective transport systems and the development of a scientific research centre. Threats include encroaching housing and infrastructure development, invasive species, water pollution, tropical storms, hurricanes and human disturbance.

PR019 Culebra **National Wildlife Refuge/Natural Reserve/Unprotected**

COORDINATES 18°20'N 65°20'W
 ADMIN REGION Culebra
 AREA 23,704 ha
 ALTITUDE 1–195 m
 HABITAT Forest, shrubland, rocky areas, sea, wetlands, shrubland, introduced/exotic vegetation




THREATENED BIRDS
 RESTRICTED-RANGE BIRDS
 BIOME-RESTRICTED BIRDS
 CONGREGATORY BIRDS

Site description

Culebra IBA embraces the cays of La Cordillera, from Las Cabezas de San Juan to the east of Fajardo on mainland Puerto Rico, and extending 27 km east to the 2,800-ha island-municipality of Culebra and its satellite cays, rocky islets and coral reefs. The IBA includes Los Farallones, Icosos, Ratones, Diablo, la Blanquilla, Cuchara, Lobo, Yerba, Luis Peña, Matojo, Del Agua, Ratón, Lobito, Alcarraza, Noreste, Molinos, Geñiqui, Culebrita, Pelá, Tiburón and Pelaíta cays; Hermanos and Barriles reefs; Palominito and Palomino islands; and Punta Soldado. The IBA boundary extends 1 km out to sea from the cays and the shoreline.

Birds

The IBA is major seabird site, supporting a globally important population of is Sooty Tern *Sterna fuscata* (75,000–105,000 birds), and regionally significant numbers of Royal Tern *S. maxima* (150–465 birds) and Brown Noddy *Anous stolidus* (1,440–1,860 birds). Other seabirds nesting on Culebra include Brown Booby *Sula leucogaster*, Black Noddy *A. minutus* and Sandwich Tern *Sterna sandvicensis*. The restricted-range Puerto Rican Flycatcher *Myiarchus antillarum*, Adelaide’s Warbler *Dendroica adelaidae* and two hummingbirds, Green-throated Carib *Eulampis holosericeus* and Antillean

Crested Hummingbird *Orthorhyncus cristatus* all occur on the island.

Other biodiversity

The Mona boa *Epicrates monensis granti* (classified as endangered by USFWS) occurs. *Peperomia wheeleri* is a shrub endemic to Culebra, and Britton sebucan *Leptocereus grantianus* (classified as endangered by DNER) is also present.

Conservation

Culebra IBA includes state and federally owned, legally protected areas (namely Culebra National Wildlife Refuge and La Cordillera Natural Reserve), and privately owned, unprotected lands. Land use is for conservation, research, tourism, recreation and in the past included military use. Educational projects, environmental interpretation, law enforcement and wildlife monitoring takes place in areas managed by USFWS. The organisation CORALations specialises in coral reef conservation, educational activities and the conservation of Culebra. It coordinates coral restoration projects and sea-turtle monitoring. Threats to the IBA include habitat loss and degradation, housing and infrastructure development, invasive species, soil contamination, tropical storms, and human disturbances.

PR020 Vieques **Wildlife Refuge/Unprotected**

COORDINATES 18°07'N 65°26'W
 ADMIN REGION Vieques
 AREA 22,646 ha
 ALTITUDE 0–300 m
 HABITAT Coastline, sea, rocky areas, wetland, shrubland, grassland, introduced/exotic vegetation




THREATENED BIRDS
 RESTRICTED-RANGE BIRDS 9
 BIOME-RESTRICTED BIRDS
 CONGREGATORY BIRDS

Site description

Vieques IBA is a 13,500-ha island-municipality located 13 km east of the Puerto Rico mainland, south of Culebra. It is an island of rolling hills, with an east–west oriented centre ridge. The highest point is Monte Pirata at 300 m. The IBA includes cays, islets and open sea, up to 1 km from the shore of the main island. The human population of Vieques reaches 10,000 individuals at its peak.

Birds

This IBA supports a regionally significant population of Brown Pelican *Pelecanus occidentalis* (listed as endangered by DNER). The nesting colony of 300 birds at Conejo Cay represents one of only three nesting sites in Puerto Rico. The IBA is home to nine (of the 23) Puerto Rico and the Virgin Islands EBA restricted-range species (three of which are island endemics), including the Antillean Crested Hummingbird *Orthorhyncus cristatus* (which in Puerto Rico is mainly confined to the south-east), Puerto Rican Woodpecker *Melanerpes portoricensis*, Puerto Rican Screech-owl *Megascops nudipes* and Puerto Rican Flycatcher *Myiarchus antillarum*. Three quail-doves coexist in Vieques: Key West Quail-dove *Geotrygon chrysis*, Bridled Quail-dove *G. mystacea* and Ruddy Quail-dove *G. montana*. It is the only known site for *G. mystacea* in Puerto Rico.

Other biodiversity

Three species of sea-turtle nest in Vieques: the Critically Endangered leatherback *Dermodochelys coriacea* and hawksbill *Eretmodochelys imbricata*, and Endangered loggerhead *Caretta caretta*. The Vulnerable West Indian Manatee *Trichechus manatus* occurs. The herpetofauna includes the endemic Mona boa *Epicrates monensis*, Puerto Rican giant anole *Anolis cuvieri* (classified as endangered by USFWS), and Gunther’s white-lipped frog *Leptodactylus albilabris*. Plants include the endemic Endangered Thomas’ lidflower *Calypttranthes thomasiana* and beautiful goetzea *Goetzea elegans*.

Conservation

Vieques IBA includes state and federally owned, legally protected lands (namely the Cerro El Buey Wildlife Refuge and Vieques National Wildlife Refuge), but it also includes privately-owned, unprotected areas. Land is used for conservation, research, tourism, recreation and, in the past, for military purposes. The Comité Pro Desarrollo y Rescate de Vieques promotes initiatives to clean up soils contaminated by military exercises as well as healthcare and sustainable development projects. Threats to this IBA are housing and infrastructure development, inappropriate recreational uses, invasive species, soil contamination (from military use), tropical storms, fires and human disturbances.