

# ■ ANTIGUA & BARBUDA

LAND AREA **441 km<sup>2</sup>** ALTITUDE **0–402 m**  
HUMAN POPULATION **83,000** CAPITAL **St John's**  
IMPORTANT BIRD AREAS **12, totalling 196 km<sup>2</sup>**  
IMPORTANT BIRD AREA PROTECTION **20%**  
BIRD SPECIES **182**  
THREATENED BIRDS **4** RESTRICTED-RANGE BIRDS **11**



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Magnificent Frigatebirds at Codrington Lagoon. (PHOTO: JIM KUSHLAN)

## INTRODUCTION

The nation of Antigua and Barbuda comprises three main islands—Antigua, Barbuda and Redonda—all at the northern end of the Lesser Antilles. Antigua is the largest island (280 km<sup>2</sup>) and lies 40 km north-east of Montserrat (to the UK), 67 km east of Nevis (St Kitts and Nevis) and 60 km north of Guadeloupe (to France). Barbuda is smaller (161 km<sup>2</sup>) and located 42 km north of Antigua. Redonda is the smallest island (just 2.1 km<sup>2</sup>) and is situated 45 km west-south-west of Antigua, between Nevis (St Kitts and Nevis, 25 km to the north-west) and Montserrat (20 km south-east).

Antigua and Barbuda are emergent parts of a 3,400 km<sup>2</sup> sub-marine platform. The depth of water between the two islands is just 27–33 m. Antigua is 19 km across (east to west) and 15 km from north to south. It has an intricate, deeply indented coastline with numerous islands, creeks, inlets and associated sand-bars (behind which wetlands have developed). A large portion of the east, north and south coasts are protected by fringing reefs. A flat, low-lying dry central plain gives rise to gently rolling limestone hills and valleys (vegetated

with xeric scrub) in the north and east. The higher, volcanic mountains of the south-west support moist evergreen forest. Barbuda is a low limestone island with a less varied coastline although it supports extensive reef systems, especially off the east coast. Codrington Lagoon in the north-west is a large, almost enclosed saltwater lagoon bordered by mangroves and sand ridges. An area of highlands (c.35 m high) on the eastern side of the island is an escarpment with a scarp slope on the north and west, a gentle slope to the south, and sea cliffs on the east. Redonda is the cone of a volcano that rises abruptly from the sea in steep cliffs that surround the island. Antigua and Barbuda support some of the most extensive mangrove woodlands in the eastern Caribbean.

Antigua and Barbuda's climate is a tropical maritime one. Average annual precipitation is 1,050 mm but severe droughts are experienced every few years (Barbuda is drier than Antigua). Rainfall is concentrated between September and November, while January to April is considered the driest period. Most of Antigua's land area (up to 92%) was under sugarcane cultivation for 300 years (the industry closed in the 1960s). The abandonment of sugar (and cotton) has resulted in a large increase of livestock production (especially cattle, but also free-roaming sheep and goats). However, tourism is the island's major industry now.

<sup>1</sup> The Environmental Awareness Group is a national NGO and is referred to throughout this chapter under the acronym EAG.

### ■ Conservation

Legislation for the establishment of formal terrestrial protected areas in Antigua and Barbuda is lacking. In the 1990s, a draft of a new Forestry Act was written, making provision for the designation of protected areas. However this draft has not yet been enacted. The Government's Environment Division is currently engaged in the (GEF-funded) Ridges-to-Reef project that may declare specific areas as nature reserves or other protected areas, but currently, very little formal protection is afforded the terrestrial (and land-based wetland) biodiversity in Antigua and Barbuda. The marine environment is better catered for legislatively. The Fisheries Act allows for the designation of marine reserves, and in 2005 the North-East Marine Management Area (NEMMA) was declared—a 3,100-ha area that extends from the northern tip of Antigua to its eastern extremity, and includes 30 offshore islands. This protected area receives more than 50,000 visitors each year, yet tourism contributes nothing to protected area management or conservation. The Fisheries Division (of the Ministry of Lands and Fisheries) has formally invited the Environmental Awareness Group (EAG) to participate in a quasi-autonomous Site Management Entity for the area's management. There is a keen desire to ensure that NEMMA becomes financially self-sustaining, and contributes tangibly to both biodiversity conservation and local livelihoods. Unfortunately, at the moment, this piece of legislation provides legal authority only for the management of the marine and not terrestrial habitats within the protected area. The Wild Bird Protection Act is a specific piece of legislation for bird protection. However, the act currently allows for an open hunting season (July 16–January 31), and thus provides little protection to e.g. the Vulnerable West Indian Whistling-duck *Dendrocygna arborea* or the Near Threatened Caribbean Coot *Fulica caribaea*, both of which are listed as game species. Enforcement of this act and specific provisions for threatened species likely to be hunted are needed if this legislation is to assist bird conservation in the country.

The EAG and its partners in the Antiguan Racer Conservation Project (ARCP) and the subsequent Off-shore Islands Conservation Project (OICP) have been leading an

international effort to eradicate black rats *Rattus rattus* from 10–15 islands, and to raise awareness of the need for an effective off-shore island management system. The ARCP has, to date, reintroduced the endemic (and Critically Endangered) Antiguan racer *Alsophis antiguae* to three rat-free islands, resulting in an increase in the population from 50 snakes in 1995 to 300 in January 2008. Interest that the ARCP generated, coupled with the realisation that many jobs in tourism and fisheries depend on a healthy and biodiverse environment, recently culminated in proposals for a new protected area system to promote conservation and sustainable use. Proposed areas encompass the ranges of Antigua and Barbuda's most threatened species and habitats, from coral reefs to dry forests, and will afford an unprecedented opportunity for biodiversity restoration and protection in the country. Other than protected area designation, Antigua and Barbuda urgently needs greater enforcement and awareness of species protection laws, and an improvement in hunters' abilities to distinguish between protected and game species. There is also a need for training professionals involved in developing and administering conservation programs, and technicians involved in field implementation. At the same time, basic research is needed to assess population size, habitat use and threats to the country's key bird species to ensure that major conservation initiatives are based on sound science, and their efficacy monitored.

Effective biodiversity conservation is severely constrained by the dearth of trained staff in both the government and NGO sectors, a lack of biological knowledge, and inadequate investment by a debt-ridden government. These shortcomings are highlighted in the National Biodiversity Strategy and Action Plan which emphasises the need for protected area and critical species management plans and for strengthened capacities in government and NGOs to manage biodiversity. Habitat loss, degradation and disturbance are serious conservation concerns. Wetland habitats in particular are under pressure on Antigua. They are converted to other uses (e.g. human settlement, tourism, and agriculture); degraded through clear-cutting of mangroves and swamp forest for lumber and agriculture;

Valley Church Bay. (PHOTO: LISA SORENSON)





polluted with sewage, industrial water and pesticides; and impacted by natural catastrophes such as drought and hurricanes whose local effects are exacerbated by the other pressures. Severe overgrazing has resulted in large areas denuded of vegetation. Antigua's garbage landfill is within a coastal ravine. During storm surges, hurricanes and high winds, this trash is dispersed over the coastal-zone, possibly resulting in entanglement or consumption of debris (e.g. seabirds or other marine-life ingesting plastics). Introduced predators include small Indian mongoose *Herpestes auropunctatus*, dogs, cats, rats and mice which are impacting breeding seabirds, ducks and shorebirds on the main islands and offshore islands alike (including Redonda). Excessive and under-regulated sport and subsistence hunting is an issue, especially for *Dendrocygna arborea*. Significant progress has been made with regards to raising knowledge and awareness on the threatened status of *D. arborea* and the importance of local wetlands through participation in the West Indian Whistling-duck and Wetlands Conservation Project. Joseph "Junior" Prosper, EAG colleagues, and volunteers have implemented a monitoring program, counting ducks simultaneously on all wetlands four times per year. Prosper has also led efforts to educate hunters, landowners, decision makers and schoolchildren through talks, field trips, school projects and advocacy. Although serious threats to wetlands remain, this work has had a positive impact: many hunters have stopped shooting whistling-ducks and instead report their sightings to EAG, several wetlands have been saved from destruction, and nesting and local populations of whistling-ducks have increased.

#### ■ Birds

At least 182 bird species have been recorded in Antigua and Barbuda, c.65% of which are Neotropical migratory birds. Eleven (of the 38) Lesser Antilles EBA restricted-range birds occur on the islands. These include relatively uncommon (wet forest dependent) species such as Bridled Quail-dove *Geotrygon mystacea*, Antillean Euphonia *Euphonia musica*, Scaly-breasted Thrasher *Margarops fuscus* and Pearly-eyed Thrasher *M. fuscatus*. However, the most significant species is the Barbuda Warbler *Dendroica subita* which is endemic to

Barbuda. Although it occurs in the mangroves and the dry shrubland around Codrington Lagoon, little is known of this species' island distribution, population or ecological requirements. *Dendroica subita* is one of the country's four globally threatened birds, the threat category and national population sizes of which are listed in Table 1. The Near Threatened Buff-breasted Sandpiper *Tryngites subruficollis* and Piping Plover *Charadrius melodus* are only known as vagrants/rare migrants to the island and are not considered as national conservation priorities. Both *Dendrocygna arborea* and Caribbean Coot *Fulica caribaea* are at risk due to the deterioration of wetland habitats across the islands (something that is impacting other waterbirds such as Masked Duck *Nomonyx dominicus*), especially as they probably rely on a "network" of sites during their annual cycle. Hunting is also affecting the whistling-duck, and presumably the Near Threatened White-crowned Pigeon *Patagioenas leucocephala*.

Barbuda supports the Caribbean's largest colony of Magnificent Frigatebird *Fregata magnificens* with the population estimated at 5,300 individuals (1,743 occupied nests) in March 2008. Less is known about the current status (or population sizes) of the country's other breeding seabirds although surveys by EAG are being undertaken. An interesting recent addition to Antigua's breeding avifauna is the Little Egret *Egretta garzetta*. Previously known to breed only on Barbados within the Western Hemisphere, three nests (and an island population of 12 birds) were documented on Antigua in March 2008 (Kushlan in press).

#### IMPORTANT BIRD AREAS

Antigua and Barbuda's 12 IBAs—the island's international site priorities for bird conservation—cover 196 km<sup>2</sup> (including marine areas), and about 20% of the country's land area. The IBAs have been identified on the basis of 23 key bird species (listed in Table 1) that variously trigger the IBA criteria. These 23 species include all four regularly occurring globally threatened birds, all 11 restricted-range species, and 10 congregatory waterbirds/seabirds.

Magnificent Frigatebird chick at Codrington Lagoon—the Caribbean's largest frigatebird colony. (PHOTO: JIM KUSHLAN)



Most of Antigua and Barbuda's IBAs meet two or more of the criteria categories, quite often combining significance for congregatory waterbirds/seabirds with restricted-range birds and/or globally threatened birds. However, Redonda IBA (AG001) qualifies solely on the basis of its congregatory species. For many of the congregatory species, significant (i.e. >1% of the global or Caribbean population of the species) populations are only found in one IBA. Codrington Lagoon and Creek IBA (AG002) is significant not just as the largest *F. magnificens* colony in the Caribbean, but also as the only IBA where the globally threatened (and endemic) *Dendroica subita* occurs, and also the only IBA in the country where the restricted-range Lesser Antillean Flycatcher *Myiarchus oberi* is found. Walling's Forest IBA (AG008) and Christian Valley IBA (AG009) together represent Antigua's wet forest ecosystem and are the only IBAs in the country where the restricted-range *G. mystacea*, *E. musica*, *Margarops fuscus* and *M. fuscatus* are found, highlighting their critical importance in maintaining Antigua's biodiversity.

State, pressure and response variables at each IBA should be monitored annually to provide an objective status assessment and highlight management interventions that might be required to maintain these internationally important biodiversity sites. Any such basic site status monitoring would be best informed by species-specific status information for the key species listed in Table 1.

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**Table 1. Key bird species at Important Bird Areas in Antigua and Barbuda.**

Key bird species	Criteria	National population
West Indian Whistling-duck <i>Dendrocygna arborea</i>	VU ■ ■	900
Little Egret <i>Egretta garzetta</i>	■	12
Magnificent Frigatebird <i>Fregata magnificens</i>	■	6,000
Brown Pelican <i>Pelecanus occidentalis</i>	■	350
Masked Booby <i>Sula dactylatra</i>	■	170
Red-footed Booby <i>Sula sula</i>	■	300
Brown Booby <i>Sula leucogaster</i>	■	300
Caribbean Coot <i>Fulica caribaea</i>	NT ■	170
Laughing Gull <i>Larus atricilla</i>	■	4,700
Royal Tern <i>Sterna maxima</i>	■	<50
Least Tern <i>Sterna antillarum</i>	■	650–700
White-crowned Pigeon <i>Patagioenas leucocephala</i>	NT ■	200
Bridled Quail-dove <i>Geotrygon mystacea</i>	■	
Purple-throated Carib <i>Eulampis jugularis</i>	■	
Green-throated Carib <i>Eulampis holosericeus</i>	■	
Antillean Crested Hummingbird <i>Orthorhynchus cristatus</i>	■	
Caribbean Elaenia <i>Elaenia martinica</i>	■	
Lesser Antillean Flycatcher <i>Myiarchus oberi</i>	■	
Scaly-breasted Thrasher <i>Margarops fuscus</i>	■	
Pearly-eyed Thrasher <i>Margarops fuscatus</i>	■	
Barbuda Warbler <i>Dendroica subita</i>	NT ■ ■	
Lesser Antillean Bullfinch <i>Loxigilla noctis</i>	■	
Antillean Euphonia <i>Euphonia musica</i>	■	

All population figures = numbers of individuals.  
 Threatened birds: Vulnerable ■; Near Threatened ■.  
 Restricted-range birds ■. Congregatory birds ■.

Egret colony at McKinnon's Saltpond IBA—one of only two New World breeding sites for Little Egret. (PHOTO: JIM KUSHLAN)































Criteria	Antigua and Barbuda IBAs											
	AG001	AG002	AG003	AG004	AG005	AG006	AG007	AG008	AG009	AG010	AG011	AG012
		  	 	 	  	 	  	 	 	  	 	  
		200	74	80	134	65	71			30	38	134
			8									
	500	5,300										
			110		70	40				50		
	170											
	300											
	300											
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		1,000	800	400	200	1,000	500			300	400	
						20						
			500		100	50						
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Figure 1. Location of Important Bird Areas in Antigua and Barbuda.



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### AG001 Redonda

**COORDINATES** 16°56'N 62°20'W  
**ADMIN REGION** Redonda  
**AREA** 720 ha  
**ALTITUDE** 0–250 m  
**HABITAT** Rocky areas, sea cliff, shrubland



Red-footed Booby

### Unprotected

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

### Site description

Redonda IBA is a small, uninhabited island situated 56 km west-south-west of Antigua, in the waters between the islands of Nevis (St Kitts and Nevis) and Montserrat (to the UK). It lies 22 km north-west of Montserrat, and 32 km south-east of Nevis. The IBA is a remnant of an extinct volcano, and protrudes steeply from the sea, mostly as sheer cliffs. It is 1.6 long and 0.5 km wide, with an area calculated at somewhere between 160 and 260 ha. Redonda has one beach (accessible by boat), but is otherwise completely surrounded by steep cliffs. The summit slopes at c.39° and the only “flat” land is a saddle of 0.4 ha at the southern end of the island, about 230 m up. This is accessible only by helicopter. Vegetation comprises coarse grasses and *Opuntia* cacti. A few individual short-leaved fig *Ficus citrifolia* cling to the western cliff-face.

### Birds

This IBA is notable for its breeding seabirds. Breeding colonies of Magnificent Frigatebird *Fregata magnificens*, Masked Booby *Sula dactylatra*, Red-footed Booby *S. sula* and Brown Booby *S. leucogaster* are regionally significant. Other species breed, including over 140 Brown Noddy *Anous stolidus*. Burrowing Owl *Athene cunicularia* is thought to be resident.

### Other biodiversity

Of the six reptile species recorded from Redonda, three (lizards) are endemic to the island: *Ameiva atrata*, *Anolis nubilus*, and a potentially new *Sphaerodactylus* sp. The Endangered green *Chelonia mydas* and Critically Endangered hawksbill *Eretmochelys imbricata* turtles have both been seen in the waters around the island.

### Conservation

Redonda is state owned. From the 1860s until c.1920 the island was mined for its guano (phosphates), yielding 7,000 tons per year. In 1901, the human population was 120, but the island has been uninhabited since the First World War when mining operations were abandoned. The island supports a healthy population of goats which may indirectly impact the seabird populations. Rats are present (as would be expected after at least 40 years of human habitation) and in the last few years brown rats *Rattus norvegicus* have become established and will no doubt be having a serious impact on the seabird (and endemic reptile) populations.

**AG002 Codrington Lagoon and Creek**

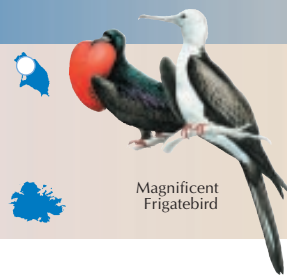
COORDINATES 17°36'N 61°50'W

ADMIN REGION Barbuda

AREA 7,785 ha

ALTITUDE 0–7 m

HABITAT Inland wetland, mangrove, shrubland



Magnificent Frigatebird

**Wildlife Reserve/Ramsar Site**

THREATENED BIRDS 2

RESTRICTED-RANGE BIRDS 4

BIOME-RESTRICTED BIRDS

CONGREGATORY BIRDS ✓

**Site description**

Codrington Lagoon and Creek IBA is on the north-western side of Barbuda. It is a large (c.12 km long and 2 km wide), almost enclosed salt-water lagoon that is bordered by mangroves and sand ridges. The best developed mangroves border the lagoon along the eastern and north-western sides, and also along Codrington Creek which connects the lagoon to the sea in the north. Dry scrub vegetation borders the lagoon on the north-east side.

**Birds**

This IBA supports the largest breeding colony of Magnificent Frigatebird *Fregata magnificens* in the Caribbean, estimated at 1,743 nests and 5,300 birds in March 2008. A significant population (c.200) of Vulnerable West Indian Whistling-ducks *Dendrocygna arborea* occurs in the lagoon, as do four (of Antigua and Barbuda's 11) Lesser Antilles EBA restricted-range birds. The Near Threatened endemic Barbuda Warbler *Dendroica subita* occurs and the presence of up to 1,000 Laughing Gulls *Larus atricilla* is globally significant.

**Other biodiversity**

This is a major nesting site for the Critically Endangered leatherback *Dermochelys coriacea* and hawksbill *Eretmochelys*

*imbricata* turtles. The lagoon is also of considerable importance as a major breeding ground for (economically important) fish and lobster.

**Conservation**

Codrington Lagoon and Creek IBA is publicly owned by the people of Barbuda (as is all land in Barbuda) and administered by the Barbuda Council. The frigatebird colony is within a "Wildlife Reserve" (on the north-west side of the creek), and the lagoon has been declared a Ramsar site. The government Environment Division in conjunction with the Barbuda Council has embarked on a project to help set up proper management systems for the lagoon and associated wetland areas. The EAG carried out a survey of the lagoon (late-1990s) and developed a monitoring plan for the area. Resources were not available to implement the plan, but it is being used to inform management decisions for the area. The government and EAG are educating tour boat operators in an attempt to minimise the disturbance from visitors being taken to see the frigatebird colony. Tour boats (and even helicopters) do approach too close to the colony on occasions. The lagoon's biodiversity needs more study to reinforce the case for minimal development within the IBA.

**AG003 McKinnon's Saltpond**

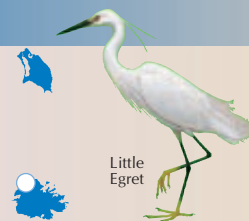
COORDINATES 17°09'N 61°51'W

ADMIN REGION Antigua

AREA 78 ha

ALTITUDE 0–2 m

HABITAT Inland wetland, mangrove, shrubland, salina



Little Egret

**Unprotected**

THREATENED BIRDS 1

RESTRICTED-RANGE BIRDS

BIOME-RESTRICTED BIRDS

CONGREGATORY BIRDS ✓

**Site description**

McKinnon's Saltpond IBA is on the west facing coast of north-west Antigua, 3 km north of St John's and just inland from Runaway Bay. It was once a mangrove-lined lagoon (the largest natural pond on the island), but a road along the western and northern seaward side has cut it off from the sea (except for a small culvert that allows limited exchange of water). The resultant increased water levels (now c.1 m deep) have killed the majority of the mangroves so that most of the shoreline is open (albeit fringed by the "skeletons" of the dead mangroves). Small stands of degraded mangroves remain on the southern and western (seaward) edges. A man-made causeway (accommodating fuel lines from a facility 3 km offshore to the storage area of an oil refinery) runs through the pond, isolating the southernmost section from the main body of water. There is extensive resort development around and adjacent to the pond, as well as private homes.

**Birds**

This IBA is notable for its waterbird populations. Numbers of Brown Pelican *Pelecanus occidentalis* and Least Tern *Sterna antillarum* are regionally significant, while those of Laughing Gull *Larus atricilla* are globally so. The Vulnerable West

Indian Whistling-duck *Dendrocygna arborea* is often present at the site (although not all year) with 56 adults and 18 ducklings found in 2006. Little Egret *Egretta garzetta* breeds in this IBA: three nests found in 2008 represent a significant percentage of the New World breeding population. Numerous Neotropical migratory shorebirds use this site.

**Other biodiversity**

The Critically Endangered hawksbill turtle *Eretmochelys imbricata* nests on the nearby beaches.

**Conservation**

McKinnon's Saltpond is under mixed ownership, and is not protected in any way. There are claims on different parts of the pond by various landowners who have individual ideas about the development of the pond. The Government's Environment Division is currently dredging the pond to reduce flooding and increase the aesthetics of the area. *Dendrocygna arborea* has not been seen in the IBA since the dredging started. The sand flats surrounding the area open to dogs, mongoose and other domestic animals, and are used as parking areas for visitors to the pond or beach nearby. These activities adversely impact the nesting terns and shorebirds.

**AG004 Hanson's Bay–Flashes****Unprotected****COORDINATES** 17°07'N 61°52'W**ADMIN REGION** Antigua**AREA** 185 ha**ALTITUDE** 0–5 m**HABITAT** Inland wetland, mangrove, shrubland

White-cheeked Pintail

**THREATENED BIRDS****1****RESTRICTED-RANGE BIRDS****BIOME-RESTRICTED BIRDS****CONGREGATORY BIRDS****■ Site description**

Hanson's Bay–Flashes IBA is on the west coast of Antigua, just west of St John's. More specifically it lies south-east of Five Island Village, and south-west of Gray's Farm/Green Bay. The area comprises a complex wetland system (with salinas and mangroves) which forms the seaward outfall of the Body Ponds–Big Creek watershed (Antigua's largest). The dense stand of mangroves (the largest mangrove woodland on Antigua) borders Hanson's Bay, and this grades to salina and wet pasture (and bordering shrubland) on the landward side.

**■ Birds**

This IBA is significant as a roosting and feeding area for the Vulnerable West Indian Whistling-duck *Dendrocygna arborea*, with up to 80 occurring. Globally significant counts of 400

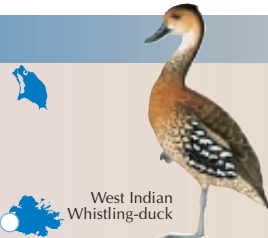
Laughing Gulls *Larus atricilla* have been reported. Good numbers of shorebirds, herons and egrets occur along with up to 100 White-cheeked Pintail *Anas bahamensis*, and the three species of restricted-range hummingbirds.

**■ Other biodiversity**

Nothing recorded.

**■ Conservation**

The area is state-owned, but totally unprotected. There are no conservation actions being undertaken at this site. Hunting is the largest threat to the birds within this IBA: the Bird Protection Law of 1913 permits an open-season for hunting. Tourism related development on the shores at the mouth of the Flashes is very likely in the future, and it is possible that the garbage dump at Cook's is affecting water quality in the Flashes.

**AG005 Valley Church Bay****Unprotected****COORDINATES** 17°04'N 61°53'W**ADMIN REGION** Antigua**AREA** 20 ha**ALTITUDE** 0–10 m**HABITAT** Coastline, inland wetland, mangrove, salina

West Indian Whistling-duck

**THREATENED BIRDS****2****RESTRICTED-RANGE BIRDS****4****BIOME-RESTRICTED BIRDS****CONGREGATORY BIRDS****■ Site description**

Valley Church Bay IBA is on the west coast of Antigua, close to Jolly Harbour and its associated tourist developments. This area was once a large swamp. However, a road has cut it off from the sea, preventing any exchange of water, turning the area into a shallow coastal salt pond encircled by a narrow fringe of mangroves. The area is bordered on the east by a major road and on the west by a narrow beach and sea-grass beds. On the seaward side of this IBA are a number of restaurants and a large hotel (which occupies part of the original mangrove). A road divides the pond to give access to the restaurants from the main road.

**■ Birds**

This IBA supports populations of four (of the 11) Lesser Antilles EBA restricted-range birds that occur in Antigua. However, it is primarily notable for its waterbirds including important populations of the Vulnerable West Indian Whistling-duck *Dendrocygna arborea* which nests underneath vegetation close to the swamp (96 adults and 38 ducklings in 2006 is a maximum count) and Near Threatened Caribbean Coot *Fulica caribaea*. Regionally significant populations of Brown Pelican *Pelecanus occidentalis*,

Laughing Gull *Larus atricilla* and Least Tern *Sterna antillarum* occur. Good numbers of Neotropical migratory shorebirds use this IBA. Masked Duck *Nomonyx dominica* has been recorded.

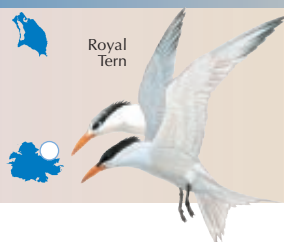
**■ Other biodiversity**

The Critically Endangered hawksbill *Eretmochelys imbricata* and leatherback *Dermochelys coriacea* turtles are known to occur in the bay.

**■ Conservation**

Valley Church Bay is a mix of private and state ownership. However, the wetland is not protected and the surrounding habitat is presently being destroyed by hotel and residential development. Construction rubble and other solid waste have been dumped at the southern end of the pond, and the nesting and feeding areas of *Dendrocygna arborea* are being encroached upon. There are land reclamation plans by the private owners which would result in the complete destruction of the ponds. EAG has tried working with landowners (including one of the restaurateurs) to encourage greater awareness, conservation and potentially even the development of birdwatching infrastructure.



**AG006 Offshore Islands****Marine Management Area/Wildlife Reserve/Park Reserve/Unprotected****COORDINATES** 17°08'N 61°44'W**ADMIN REGION** Antigua**AREA** 9,020 ha**ALTITUDE** 0–50 m**HABITAT** Rocky islands, shoreline, sea, shrubland**THREATENED BIRDS**

1

RESTRICTED-RANGE BIRDS

BIOME-RESTRICTED BIRDS

**CONGREGATORY BIRDS**

✓

**■ Site description**

Offshore Islands IBA comprises many of Antigua's 51 offshore islands. The majority are concentrated off the north-east coast of the mainland in the North Sound area. These include Redhead, Rabbit, Galley, Lobster, "Jenny", Great Bird, Hellsgate and the Exchange islands. The islands of York and Green are located off the eastern most tips of the mainland, and the Five-Island islets to the west of the mainland. The islands range in size from c.40 ha (Green Island) to 0.25 ha (most of the Five-Island islets), and are characterised by limestone cliffs, xeric dry scrub and cactus vegetation, and surrounding mangroves and coral reef systems.

**■ Birds**

This IBA is notable for waterbirds and seabirds. The Vulnerable West Indian Whistling-duck *Dendrocygna arborea* breeds on some of the islands, and the numbers of Laughing Gull *Larus atricilla* are globally significant. Populations of Brown Pelican *Pelecanus occidentalis*, Royal Tern *Sterna maxima* and Least Tern *S. antillarum* are important regionally.

**■ Other biodiversity**

The Critically Endangered Antigua racer *Alsophis antiguae* is found on Great Bird Island and, as a result of reintroductions

since 1999, Rabbit, Green and York islands. Significant numbers of the Critically Endangered hawksbill turtle *Eretmochelys imbricata* nests on the beaches of a number of the offshore islands (e.g. 60 nesting females on Long Island).

**■ Conservation**

The Offshore Islands exhibit a range of ownership. Some are privately-owned or leased (e.g. Green and York islands are leased by the Mill Reef Club), some are state-owned, and some are disputed (e.g. Great Bird Island and Rabbit Island). There is currently no legislation that provides for the protection or management of the terrestrial biodiversity of these islands, although the North East Marine Management Area embraces the marine components of the east coast islands. EAG has been leading an international effort to eradicate black rats from 10–15 islands, and to raise awareness of the need for an effective island management system. The Antiguan Racer Conservation Project has been reintroducing the endemic *Alsophis antiguae* to three rat-free islands (and numbers have increased from 50 in 1995 to 300 in January 2008). Breeding bird numbers are being monitored and are increasing on the islands cleared of rats. Unregulated tourism and recreational use of the islands is causing direct and indirect impact and disturbance to the biodiversity.

**AG007 Fitches Creek Bay–Parham Harbour****Unprotected****COORDINATES** 17°07'N 61°47'W**ADMIN REGION** Antigua**AREA** 730 ha**ALTITUDE** 0–3 m**HABITAT** Inland wetland, mangrove, salina**THREATENED BIRDS**

1

RESTRICTED-RANGE BIRDS

4

BIOME-RESTRICTED BIRDS

**CONGREGATORY BIRDS**

✓

**■ Site description**

Fitches Creek Bay–Parham Harbour IBA is in north-east Antigua. They represent two large bays between Barnacle Point (and the VC Bird International Airport) to the north and Old Fort Point at the elbow of Crabb's Peninsula to the south. The bays are separated by Blackman's Point, and support an almost unbroken stretch of mangroves. At Fitches Creek Bay a deep, mangrove-lined channel extends 1.5 km inland, and mangroves fringe the coast for c.1 km. Parham Harbour supports two broad areas on either side of the town. The western section consists of Vernon's Island and Byam's Wharf; the eastern section starts east of Parham town and follows the coast to Old Fort Point on Crabb's Peninsula. South and west of Vernon's Island is a salina and saltpond, and in the area east of Parham town are three small mangrove creeks, a salina and saltmarsh.

**■ Birds**

This IBA is significant for supporting populations of four (of Antigua's 11) Lesser Antilles EBA restricted-range birds, but primarily this is a wetland site with good numbers of egrets, herons, and wintering shorebirds. Up to 500 Laughing Gulls *Larus atricilla* have been reported (a globally significant number), and the Vulnerable West Indian Whistling-duck *Dendrocygna arborea* occurs (and nests) in significant numbers.

**■ Other biodiversity**

Nothing recorded.

**■ Conservation**

This area is privately-owned and is not protected. EAG has implemented education efforts in an attempt to save these wetlands. The IBA is used as a dumping site for solid waste/garbage by members of the public. There is a road built across the swamp to gain access to the sea. Hurricanes Luis and Marilyn caused (directly and indirectly) significant damage to the taller mangroves.

## AG008 Walling's Forest

Unprotected

**COORDINATES** 17°02'N 61°48'W  
**ADMIN REGION** Antigua  
**AREA** 190 ha  
**ALTITUDE** 120–280 m  
**HABITAT** Wet forest



THREATENED BIRDS 1

RESTRICTED-RANGE BIRDS

BIOME-RESTRICTED BIRDS

CONGREGATORY BIRDS

## ■ Site description

Walling's Forest IBA is in south-west Antigua, in the volcanic Shekerly Mountains. The forest is on the north-west slopes of Signal Hill (Antigua's second highest mountain). Boggy Peak (and Sage Hill) lies c.4 km to the west, beyond which is the Christian Valley IBA (AG009). The slopes of Signal Hill are traversed by contour drainage ditches so that all most run off feeds into Walling's reservoir, created by a dam built in 1900 with a view to supplying neighbouring villages with potable water (something it no longer does). The IBA supports the largest and best remaining tract of moist evergreen forest on the island. A popular trail to the top of Signal Hill starts near the reservoir which is quite heavily used by tourists, and locals at weekends.

## ■ Birds

This IBA supports populations of nine (of the 11) Lesser Antilles EBA restricted-range birds. Within Antigua, some of these species (Bridled Quail-dove *Geotrygon mystacea*, Scaly-breasted Thrasher *Margarops fuscus*, Pearly-eyed Thrasher *M. fuscatus* and Antillean Euphonia *Euphonia musica*) are entirely confined to the Walling's Forest and Christian Valley IBA (AG009) ecosystem. A significant

population of the Near Threatened White-crowned Pigeon *Patagioenas leucocephala* also occurs.

## ■ Other biodiversity

Seven species of bat occur including the Near Threatened insular single leaf bat *Monophylus plethodon* and Brazilian free-tailed bat *Tadarida brasiliensis*.

## ■ Conservation

Walling's Forest and reservoir are partially state-owned. About 5 ha of Wallings was reforested in the early 1900s to protect the watershed. The Forestry Department (Ministry of Agriculture) offers some protection from logging for building and charcoal—the primary threat to this area. However, the draft Forestry Act (of the 1990s) which would enable formal protection to this area has not been enacted. Forestry Department maintain some areas, some trails and offer guided tours. A management plan has been written but not implemented. Forest conversion and disturbance for residential development, tourism (e.g. the recent construction of an aerial ropeway) and agriculture pose a real threat to the integrity of this ecosystem.

## AG009 Christian Valley

Unprotected

**COORDINATES** 17°01'N 61°47'W  
**ADMIN REGION** Antigua  
**AREA** 670 ha  
**ALTITUDE** 50–300 m  
**HABITAT** Forest



THREATENED BIRDS 1

RESTRICTED-RANGE BIRDS 9

BIOME-RESTRICTED BIRDS

CONGREGATORY BIRDS

## ■ Site description

Christian Valley IBA is in south-west Antigua, in the volcanic Shekerly Mountains. The valley lies to the north of Boggy Peak (Antigua's highest mountain). It is surrounded to the south and east by this peak and Sage Hill, with Mount McNish to the north-east. Walling's Forest IBA (AG008) is c.4 km to the east of Boggy Peak. The entrance to Christian Valley is from the road between Jennings and Bolans. Along the entrance road is the ruin of the colonial Blubber Valley sugar estate house (now surrounded by a chicken farm). The Christian Valley estate house lies at the end of the road. During the seventeenth and eighteenth centuries, the surrounding hills served as a refuge for escaped African slaves ("maroons"). Maroon trails are still used by foresters and farmers.

## ■ Birds

This IBA is significant for supporting populations of nine (of the 11) Lesser Antilles EBA restricted-range birds that occur in Antigua. Within Antigua, some of these species (Bridled Quail-dove *Geotrygon mystacea*, Scaly-breasted Thrasher *Margarops fuscus*, Pearly-eyed Thrasher *M. fuscatus* and Antillean Euphonia *Euphonia musica*) are entirely confined to the Christian Valley and Walling's Forest IBA (AG008)

ecosystem. A significant population of the Near Threatened White-crowned Pigeon *Patagioenas leucocephala* also occurs at this IBA.

## ■ Other biodiversity

No globally threatened or endemic species have been recorded, but the area has a diverse flora and insect fauna. Seven bat species (including Antillean fruit-eating bat *Brachyphylla cavernarum* and greater bulldog bat *Noctilio leporinus*) have been documented.

## ■ Conservation

Christian Valley is state owned. It is the subject of a watershed management program administered by the Forestry Division (Ministry of Agriculture) which affords the area some protection. The draft Forestry Act (of the 1990s) which would enable formal protection to this area has not been enacted. A government agricultural station in the valley oversees tree fruit production. Logging for building and charcoal is a real threat, as is the conversion of forest as a result of the expansion of human settlement, tourism, and agriculture. Water from the valley flows into the sea at Lignumvitae Bay, the site of the major tourist developments of Jolly Beach and Jolly Harbour.

**AG010 Potworks Dam****COORDINATES** 17°04'N 61°46'W**ADMIN REGION** Antigua**AREA** 115 ha**ALTITUDE** c.10 m**HABITAT** Inland wetland, shrubland, woodland

Brown Pelican

**Wildlife Reserve****THREATENED BIRDS**

1

**RESTRICTED-RANGE BIRDS**

4

**BIOME-RESTRICTED BIRDS****CONGREGATORY BIRDS****Site description**

Potworks Dam IBA is in south-east Antigua, c.2 km north of the village of Bethesda and Bethesda Dam IBA (AG012). The reservoir dam was under construction in 1969 when the area flooded as a result of exceptionally heavy rains. The dam site filled with water before preparation of the site was finished, but is considered a municipal reservoir and is an important source of water for domestic and agricultural use. Due to the very shallow sides to the reservoir and frequent droughts, the shoreline fluctuates greatly over time, reducing opportunities for the establishment of aquatic vegetation. Land surrounding most of the reservoir is former sugar cane estate land that is now farmed or grazed (primarily by free-roaming cattle).

**Birds**

The planted woodland and shrubland around parts of this IBA support populations of four (of the 11) Lesser Antilles EBA restricted-range birds that occur in Antigua. However, Potworks Dam is most notable for its waterbirds and numerous Neotropical migratory shorebirds. Over 100 Ruddy Duck *Oxyura jamaicensis* and 50 Pied-billed Grebe *Podilymbus podiceps* can be found, but the numbers of

Laughing Gull *Larus atricilla* are globally significant, and Brown Pelican *Pelecanus occidentalis* are regionally so. Significant numbers of the Vulnerable West Indian Whistling-duck *Dendrocygna arborea* have been recorded.

**Other biodiversity**

Nothing recorded.

**Conservation**

The dam and surrounding lands were bought by the government in the late-1950s, but most of these lands are now leased to farmers. Now, due to intense crop cultivation in the area the reservoir is becoming highly polluted by pesticides and fertiliser run-off. Potworks Reservoir is a proposed wildlife reserve, but currently enjoys no formal protection. The Forestry Division has planted trees (e.g. neem, whitewood, *Lignum vitae*) on a small area on the northern side of the reservoir to protect the reservoir edges. The government-owned Public Utilities Company also tries to restrict use of the water for recreational purposes, but cattle still drink the water and feed on any marginal vegetation.

**AG011 Christian Cove****COORDINATES** 17°03'N 61°45'W**ADMIN REGION** Antigua**AREA** 95 ha**ALTITUDE** 0–5 m**HABITAT** Coastline, wetland, mangrove

Laughing Gull

**Unprotected****THREATENED BIRDS**

1

**RESTRICTED-RANGE BIRDS****BIOME-RESTRICTED BIRDS****CONGREGATORY BIRDS****Site description**

Christian Cove IBA is at the head of Willoughby Bay on the south-east coast of Antigua, just north of Christian Point. The IBA is south-east of Bethesda Dam IBA (AG012). The road to Bethesda forms the western boundary of the IBA. Christian Cove is a wetland basin comprising fringing mangroves (shorter mangroves to the north and taller stands on the south-east side), salt-marsh, and a small freshwater marsh. The freshwater marsh is in the north-western corner of the IBA, and is fed by a stream that is bisected by the Bethesda road. Dry woodland of manchineel *Hippomane mancinella* and *Acacia* spp. surrounds the wetland.

**Birds**

This IBA is globally significant for its population of 400 Laughing Gulls *Larus atricilla*, and Vulnerable West Indian

Whistling-duck *Dendrocygna arborea*. The wetland supports a wide diversity of shorebirds and waterbirds (including ducks, herons, egrets and terns). The Near Threatened Piping Plover *Charadrius melodus* and Buff-breasted Sandpiper *Tryngites subruficollis* have all been recorded, although not in significant numbers.

**Other biodiversity**

Nothing recorded.

**Conservation**

Christian Cove is state owned but is not protected in any way, and there are currently no conservation efforts being implemented at the site. Development pressures are a constant threat to these wetlands.



AG012 Bethesda Dam		Unprotected	
<b>COORDINATES</b> 17°02'N 61°44'W <b>ADMIN REGION</b> Antigua <b>AREA</b> 5 ha <b>ALTITUDE</b> c.10 m <b>HABITAT</b> Inland wetland, shrubland	  West Indian Whistling-duck	<b>THREATENED BIRDS</b> 2	<b>RESTRICTED-RANGE BIRDS</b> 4
		<b>BIOME-RESTRICTED BIRDS</b>	<b>CONGREGATORY BIRDS</b> <input checked="" type="checkbox"/>

### ■ Site description

Bethesda Dam IBA is a man-made reservoir in the south-eastern part of the island, just north-west of Bethesda village. The reservoir is surrounded by grass and scrub covered hills to the west and south, and an agricultural area to the north. Bethesda Dam was constructed (by the government) in the 1970s to provide irrigation water for the agricultural area. Water levels vary, but during the rainy season the reservoir covers c.5 ha and provides good feeding and cover for waterbirds.

### ■ Birds

This IBA is significant for its populations of the Near Threatened Caribbean Coot *Fulica caribaea* (up to 110 have been recorded) and Vulnerable West Indian Whistling-ducks *Dendrocygna arborea*. During 2006–2007, 204 whistling-ducks were seen at the reservoir. The species can be highly mobile, but is usually present and does breed at this site. Four (of the 11) Lesser Antilles EBA restricted-range birds occur in the shrubland around the reservoir.

### ■ Other biodiversity

This reservoir was one of the first places where an invasive alien species of reed was observed. The reed has since spread rapidly to other freshwater sites.

### ■ Conservation

Bethesda Dam is state-owned (the dam was a government project, built on government land), but it not protected in any way. There is no conservation management or action on-going at this site. However, the EAG does undertake some informal monitoring of the waterbirds. Hunting takes place within the IBA, posing a threat to the whistling-ducks and other waterbirds. Also, villa construction and landscaping associated with a bar/restaurant has impacted the preferred roosting area of *D. arborea*. Bethesda village is close to the eastern side of the reservoir. Villagers do frequent the IBA, often resulting in disturbance to the birds.