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Important Bird Areas AMERICAS

BARBADOS

Wayne Burke





Country facts at a glance

Area:	431 km ²
Population:	279,000
Capital:	Bridgetown
Altitude:	0–343 m
Number of IBAs:	6
Total IBA area:	49 ha
IBA coverage of land area:	0.2 %
Total number of birds:	233
Globally threatened birds:	0
Globally threatened birds in IBAs:	0
Country endemics:	1

General introduction

Barbados is situated in the Atlantic, east of the Windward Islands towards the southern end of the Lesser Antilles. It is the most easterly of the Lesser Antilles, lying 165 km east of St Vincent and 220 km north-north-east of Tobago. The island is teardrop shaped, 31 km long from north to south, and 22 km east to west at its widest in the south (Figure 1). Barbados is divided into 11 parishes with Bridgetown, the capital, in the south-western parish of St Michael. It is densely populated. In contrast to the older, mountainous volcanic islands of the Lesser Antilles, Barbados is a geologically-recent, low-lying, coral island. The majority of the island (85%) rises in a series of raised coral limestone terraces. Two of these old sea cliffs run north–south inland of the west coast, and another runs east–west inland of the south coast. The oldest and highest ridge (over 300 m) overlooks the island’s east coast. The limestone in this part of the island is fractured in places by an extensive network of gullies up to 30 m deep. The remainder of the island, on the north-east coast (north and east of Hackleton’s Cliff, in the parishes of St Andrew, St Joseph and St John) is eroded into irregular topography with sharp ridges and steep valleys exposing older sedimentary rock. This rolling, rugged landscape is known as the Scotland District and is the least populated part of the island. The coast of Barbados is primarily sandy beach, but sea cliffs (some up to 35 m high) dominate in the south-east and at the northern end of the island.

Barbados’ climate is tropical marine with a dry season characterized by north-east trade winds between November and May. Average annual precipitation is 1400–1500 mm, falling mainly during June to October. The deciduous and semi-deciduous forest that once covered the island was almost entirely removed for cultivation (especially for sugar cane) within c.60 years of British settlement in 1627. Relict woodlands persist on steep slopes at Turner’s Hall Woods (c.20 ha), and the under-cliff woodland in the Scotland District is regenerating. Mature woodland also survives in the gullies that cross the coral surface of the island—c.250 km of the total gully system is wooded. Surface water is scarce on the limestone island. The wetland of greatest significance is the 33-ha Graeme Hall Swamp (GHS) on the south coast. This wetland supports areas of fresh water with sedges, and others of brackish water with red (*Rhizophora mangle*) and white mangrove (*Laguncularia racemosa*). The smaller, seasonal Chancery Lane Swamp is also a very important wetland. Much of the former sugar cane land has been, or is being converted to golf courses. Though these are mostly “green deserts”, their irrigation ponds do offer some opportunities for waterbirds and additional habitat for American Golden Plover (*Pluvialis dominica*) to put down in heavy weather.

Conservation and protected area system

The 1907 Wild Birds Protection Act provides a measure of protection to most resident birds and some migrants. It is currently being reviewed, and proposals have been made to include the Vulnerable West Indian Whistling-duck (*Dendrocygna arborea*) and the island endemic Barbados Bullfinch (*Loxigilla barbadensis*). Unfortunately, the only migratory shorebirds listed are Upland Sandpiper (*Bartramia longicauda*), Buff-breasted Sandpiper (*Tryngites subruficollis*), Hudsonian Godwit (*Limosa haemastica*) and Ruff (*Philomachus pugnax*). Habitat protection is afforded under various designations such as the Graeme Hall Swamp Nature Preserve and Bird Sanctuary (given legal protection after it was designated a Ramsar site); Chancery Lane Swamp “special study area” (a poor second-best to the stricter protection suggested for this area by Captain Maurice Hutt); the Scotland District “protected landscape” (a poor second-best to the proposal by Hutt to make this area a national park); and the under-cliff woodlands of St John and St Joseph at Hackleton’s Cliff and Joe’s River, and Turner’s Hall Wood which are now listed as “national forest candidates”. If the endemic Barbados racer (*Liophis perfuscus*) still survives it will most likely be found in these under-cliff woodlands.

Initiatives focused on Graeme Hall Swamp have been at the forefront of conservation in Barbados. Captain Hutt started efforts to protect the swamp in the 1970s, and Dr Karl Watson (University of the West Indies, UWI) continued



Chancery Lane (BB005).
Photo: Ryan Chenery

these efforts. However, Peter Allard finally seized the opportunity to purchase the western portion of the swamp in 1994, and opened the Graeme Hall Nature Sanctuary (GHNS) in May 2004 with a mandate for conservation, environmental education and nature tourism. Over 11,000 school children have now visited GHNS on discounted tours from the island's secondary and primary schools. GHNS has also sponsored celebrations of World Wetlands Day to raise awareness (among invited school children and UWI students) of the numerous benefits of wetland conservation. Karl Watson also works tirelessly to educate the public and students about the need for conservation measures. A regular water sampling regime is conducted for GHNS by the Centre for Resource Management and Environmental Studies (CERMES) of UWI. CERMES, through its affiliation with Caribbean Coastal Marine Productivity (CARICOMP), also conducts regular monitoring of the health of the swamp's mangrove ecosystem. GHNS staff record daily observations of bird life in the Sanctuary. The whole 33-ha Graeme Hall Swamp was designated a Ramsar site in 2005 and a proposal exists to make GHS a national park. However, this proposed plan could further degrade the wetland in significantly reducing available waterbird habitat, as well as increasing human disturbance through recreational activities. Throughout the rest of the island little formal bird conservation work is being implemented, although a project on shorebird hunting and wetland conservation has recently started (August 2008) and a network of dedicated birdwatchers keeps detailed records of the island's avifauna.

Threats to birds and habitats on the island stem from a single root cause: the pressures of commercial and residential development on a small, densely populated island. The proposed construction of a "wind farm" in St Lucy by Barbados Light and Power is just one of many such development projects, which in this case could add to the mortality of migrant shorebirds in the parish. There is an urgent need for wise management of the inevitable encroachment of new developments (e.g. housing estates, golf courses etc.) on existing woodlands or indeed agricultural land. The pressure is enormous and the resistance limited. The threat to woodlands could be mitigated by a low-cost tree planting scheme (using native tree species) implemented on tracts of government-owned land in the Scotland District. Secondary school environmental groups could play an active part in such a scheme, keeping costs low and returns high.

The complex issue of bird shooting on the island also needs to be addressed (Box 1). This is not to argue for elimination of the "sport" but for regulation based on accurate data concerning numbers of each species being shot. With greater transparency and a more accurate picture of numbers, informed decisions about species-specific bag limits could be set, thus protecting the most vulnerable birds, such as American Golden Plover (*Pluvialis dominica*) which has a global population estimated at just 200,000 individuals. The artificially maintained shooting swamps provide habitat for many non-target waterbirds for at least part of the year and some that are maintained throughout the year provide year-round habitat. These swamps are important components of the island's wetland network, and they exist solely as a result of shooting-specific management actions. Even with regulated hunting, the ideal would be for the maintenance of two "no-shooting" wetlands (one in the north and one in the east) to offer sanctuary for migratory shorebirds. This, combined with the preservation of Chancery Lane Swamp IBA (BB005), would provide necessary refuge. Unfortunately, such projects are severely constrained by lack of funding.

"Swamps are important components of the island's wetlands and exist solely as a result of shooting-specific management actions."

Ornithological importance



Typical of oceanic islands, the breeding avifauna of Barbados is depauperate with just 28 species breeding. However, Barbados' position east of the main island chain makes it a first landfall for wandering migrants (e.g. trans-Atlantic species) resulting in over 33% of the island's recorded species (78 of 233) being considered vagrants. This is reflected in the occurrence of globally threatened birds on the island. The Near Threatened Piping Plover (*Charadrius melodus*) is known from a single record (of a bird shot) in 1957; four West Indian Whistling-ducks (*Dendrocygna arborea*; Vulnerable) were present at Graeme Hall Swamp in 1961; two Black-capped Petrels (*Pterodroma hasitata*; Endangered) 10–12 km southwest of Barbados in April 2003 were the first island records; and Caribbean Coot

(*Fulica caribaea*; Near Threatened) started breeding on the island in 1999. The Critically Endangered Eskimo Curlew (*Numenius borealis*) was once a regular autumn passage migrant (into the late nineteenth century) but the last certain record on Barbados (and indeed anywhere) was of a single bird shot in September 1963 at a shooting swamp in St Lucy.

Barbados is a geologically young island compared with its neighboring Antillean islands and, as a result, levels of endemism are low. The Barbados Bullfinch (*Loxigilla barbadensis*), which is common in all habitats, has recently been recognized as a species distinct from the Lesser Antillean Bullfinch (*Loxigilla noctis*). It is the only island endemic, and it occurs alongside three other Lesser Antilles Endemic Bird Area (EBA 030) restricted-range birds, namely Green-throated Carib (*Eulampis holosericeus*), Antillean Crested Hummingbird (*Orthorhynchus cristatus*) and Caribbean Elaenia (*Elaenia martinica*). The two hummingbirds are common in woodlands and gardens. Two more restricted-range species are known from the island, but are not considered to sustain viable populations. The Scaly-breasted Thrasher (*Margarops fuscus*) was last recorded in the 1920s and is now almost certainly extirpated from the island, and the Pearly-eyed Thrasher (*Margarops fuscatus*) is known from just a few sightings (possibly of vagrants) over the last two years.

Barbados is most important for its waterbirds. The network of natural and (in the case of the shooting swamps) artificially maintained wetlands provides critical habitat for an increasing number of waterbird species. In recent decades, a range of waterbirds have been added as breeding species to the Barbados avifauna. For example, Little Egret (*Egretta garzetta*) first nested in 1994 (representing the first breeding record of this species in the



Little Egret (*Egretta garzetta*) colony at Graeme Hall Swamp (BB003), the first New World breeding site for the species. Photo: Jim Kushlan

New World); Snowy Egret (*Egretta thula*) also nested for the first time in 1994; Pied-billed Grebe (*Podilymbus podiceps*) in 2004; Black-bellied Whistling-duck (*Dendrocygna autumnalis*) in 2002; and Masked Duck (*Nomonyx dominicus*) in 1990. These, and other waterbirds, rely on a functioning network of wetlands to provide their various feeding and breeding requirements throughout the year.

It is as a staging post for Arctic-nesting Neotropical migratory shorebirds that Barbados stands out in terms of global importance. Adverse weather conditions in the Atlantic can cause large flights of shorebirds to put down in Barbados' wetlands. Unfortunately, many of these birds are shot at privately-owned wetlands designed and maintained specifically to attract the flocks. Though exact data are not available, the number of birds killed by the 10 active shooting swamps on the island ranges between 15,000 and 30,000 each July-to-October shooting season. Information from hunters in the five shooting swamps in the

northern parish of St Lucy suggests that between 2400–3000 birds are shot at each swamp, and that a combined total of 12,000–15,000 birds are shot each year in this parish. The same hunters have suggested that the number of birds shot represents “just” 10% of the total number of birds passing (although this estimate comes with obvious biases), indicating that 150,000–300,000 shorebirds could be using the island's wetlands each autumn. Pectoral Sandpiper (*Calidris melanotos*) and Lesser Yellowlegs (*Tringa flavipes*) make up 70–75% of the birds shot, and 10% are American Golden Plovers (*Pluvialis dominica*).

“Barbados is globally important as a staging post for Arctic-nesting Neotropical migratory shorebirds.”

IBA overview

Of Barbados' six IBAs¹ (Table 1, Figure 1), two have some form of protective designation, representing 76% of the area covered by the IBAs, although some of these designations do not alleviate the threat of development. The IBAs have been identified on the basis of nine key bird species: all four restricted-range species, and five congregatory waterbirds/seabirds. The IBAs are wetland focused, and together they form an important national network of sites for the waterbird species that rely on them. The occurrence of the various restricted-range birds is mostly incidental with three of these species being widespread

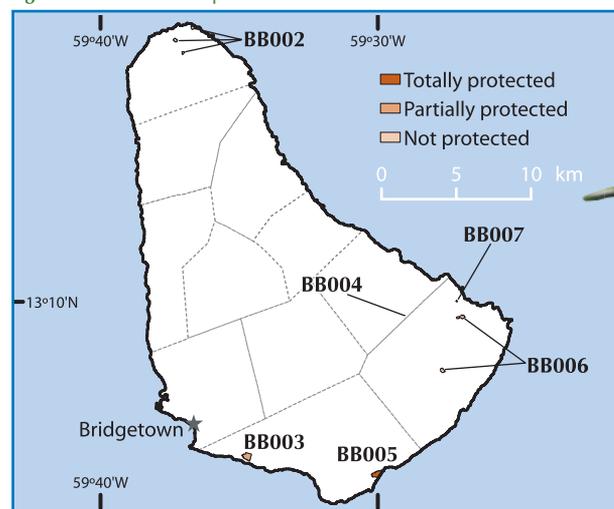
and common in most habitats. However, in terms of the IBA network, the Caribbean Elaenia (*Elaenia martinica*) is found only in Graeme Hall Swamp IBA (BB003). If either of the restricted-range *Margarops* thrashers were found to be breeding on the island again, it would be appropriate to identify woodland IBAs supporting populations of all of the restricted-range birds. No globally threatened species occur on the island in numbers significant for IBA identification. However, the small, recently established population of the Near Threatened Caribbean Coot (*Fulica caribaea*) should be monitored as it grows.

Table 1. Important Bird Areas in Barbados

IBA code	IBA name	Adm unit	Area (ha)	A1				A2				A3				A4			
				CR	EN	VU	NT												
BB002	Shooting Swamps of St. Lucy	St. Lucy	9							X					X				X
BB003	Graeme Hall Swamp	Christ Church	33							X				X					
BB004	East Point Pond	St. Philip	1							X				X					
BB005	Chancery Lane Swamp	Christ Church	3							X				X					
BB006	Shooting Swamps of St. Philip	St. Philip	2							X				X				X	
BB007	Bayfield Pond	St. Philip	1							X									

For information on trigger species at each IBA, see individual site accounts at BirdLife's Data Zone: www.birdlife.org/datazone/sites/

Figure 1. Location of Important Bird Areas in Barbados



Antillean Crested Hummingbird (*Orthorhyncus cristatus*)
Photo: Howard Nelson

Threats to the IBAs are essentially those that are outlined above (see Conservation and protected area system), namely pressure from developments. Ironically, Graeme Hall Swamp IBA (BB003), Barbados' best protected area, faces probably the greatest threats, especially related to the maintenance of water quality. There is measureable mild biocide runoff into the swamp from surrounding agricultural land, including from government-owned agricultural land inside the swamp

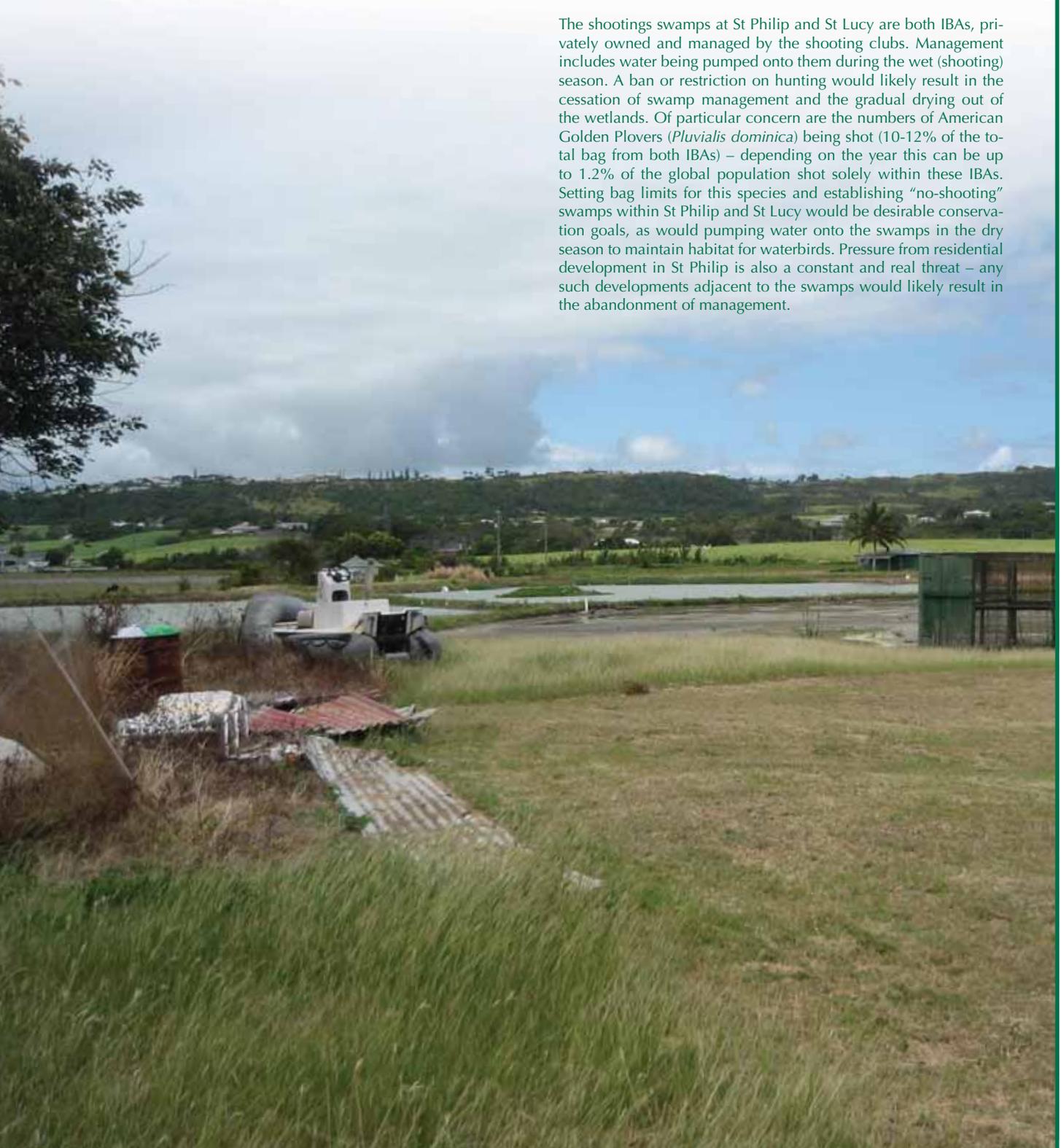
watershed. Of more concern though, is the South Coast Sewerage Project treatment plant which is situated in the government-owned eastern section of the wetland. In the event of a plant failure, there is a plan to discharge raw sewerage directly into the wetland. This occurred in July 2005 with a small discharge that resulted in a limited fish-kill and blue-green algal bloom. However, a major discharge of untreated sewerage would result in serious eutrophication.

¹ This directory only includes global IBAs, for regional IBAs using “B” or Caribbean criteria, see BirdLife International (2008).

Box 1

Careful management of shooting swamps could benefit both hunters and birds

The shootings swamps at St Philip and St Lucy are both IBAs, privately owned and managed by the shooting clubs. Management includes water being pumped onto them during the wet (shooting) season. A ban or restriction on hunting would likely result in the cessation of swamp management and the gradual drying out of the wetlands. Of particular concern are the numbers of American Golden Plovers (*Pluvialis dominica*) being shot (10-12% of the total bag from both IBAs) – depending on the year this can be up to 1.2% of the global population shot solely within these IBAs. Setting bag limits for this species and establishing “no-shooting” swamps within St Philip and St Lucy would be desirable conservation goals, as would pumping water onto the swamps in the dry season to maintain habitat for waterbirds. Pressure from residential development in St Philip is also a constant and real threat – any such developments adjacent to the swamps would likely result in the abandonment of management.



Golden Grove Swamp (BB006), one of four shooting swamps in St Philip.
Photo: Jim Kushlan

Opportunities

In response to conservation issues affecting migratory shorebirds on Barbados, BirdLife International has recently secured funding for a local coordinator on Barbados to address the issues of shorebird hunting and wetland conservation on the island (Box 1). The main objectives of this project are to increase survival prospects of migratory shorebirds through the establishment of no-hunting conservation wetlands, and the negotiation of conservation agreements (e.g. bag limits) with the Barbados Wild Fowls Association (BWFA). This sixteen-month project of hemispheric significance is in its infancy and will require time to reach fruition. When project goals have been accomplished, there will be a need for monitoring and management of conservation wetlands and continuous negotiation with the BWFA as conservation issues arise.

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. Monitoring the status of key bird species at each IBA, as well as species of interest such as the new population of Caribbean Coot (*Fulica caribaea*), will be an important component of this broader site-monitoring process.

Further information

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Barbados Bullfinch
Photo: Steve Mlodinow