

BRITISH VIRGIN ISLANDS

LAND AREA **153 km²** ALTITUDE **0–521 m**
HUMAN POPULATION **23,550** CAPITAL **Road Town**
IMPORTANT BIRD AREAS **3, totalling 53 km²**
IMPORTANT BIRD AREA PROTECTION **45%**
BIRD SPECIES **210**
THREATENED BIRDS **3** RESTRICTED-RANGE BIRDS **8**



CLIVE PETROVIC (BVI ENVIRONMENTAL CONSULTANT), ESTHER GEORGES AND NANCY WOODFIELD PASCOE (BVI NATIONAL PARKS TRUST)



The Magnificent Frigatebird colony on Great Tobago IBA is one of the top five for the species in the insular Caribbean. (PHOTO: ANDY MCGOWAN)

INTRODUCTION

The British Virgin Islands (BVI), a UK Overseas Territory, is at the eastern end of the Greater Antillean chain of islands in the northern Caribbean Sea, and comprise more than 60 islands, cays and rocks. As an archipelago, the Virgin Islands are politically divided between BVI (which stretch out to the north-east) and the United States Virgin Islands (USVI, the south-western group of islands), and are located on the Puerto Rican Bank. The archipelago once formed a continuous landmass with Puerto Rico and was only isolated in relatively recent geologic time. With the exception of the isolated limestone island of Anegada, the islands are volcanic in origin and are mostly steep-sided with rugged topographic features and little flat land, and are surrounded by coral reefs. The main islands are Tortola, Virgin Gorda, Jost Van Dyke and Anegada, although 15 islands are inhabited. Tortola is the largest island (c.20 km long and 5 km wide) and supports over 80% of the population. The capital, Road Town, is on Tortola.

BVI experiences a dry subtropical climate with average annual rainfall of c.700 mm (in coastal areas) and 1,150 mm on higher ground falling mostly September–November. The most abundant vegetation types on the islands are cactus scrub and dry woodland, although much of this has been modified.

Habitat alteration during the plantation era and the introduction of invasive alien species has had major impacts on populations of native flora and fauna. Economic development and population expansion have placed great stresses on the natural environment, which is especially true on the main island of Tortola where coastal development pressures have resulted in the degradation of most wetland ecosystems. The impact of human activities on the fauna has been substantial and many invertebrate species have decreased in abundance or been extirpated by human induced habitat changes, especially within native freshwater habitats. Whilst these freshwater ecosystems have always been ephemeral, they are now frequently dry and lack their former species richness. Vertebrate fauna have been similarly impacted by the loss of freshwater habitats such as ghuts, and freshwater fish have been eliminated or greatly reduced in numbers.

Conservation

The conservation of natural resources in the BVI is provided through local legislation such as the National Parks Act (2006), the Fisheries Act (2003), and the Endangered Animals and Plants Ordinance (1987). The Wild Birds Protection Ordinance (1959) protects 21 species of rare or threatened wild birds within the BVI and also the nests, eggs and young of all bird



The British Virgin Islands National Parks Trust runs regular birdwatching tours as part of its environmental education and public awareness activities. (PHOTO: BVINPT)

species. The Physical Planning Act (2004) addresses land development issues, environmental assessments and historical preservation. Responsibility for conservation in the BVI falls to the Ministry of Natural Resources and Labour. The Conservation and Fisheries Department (CFD) and the BVI National Parks Trust (BVINPT) are the two main conservation implementing agencies within the ministry. CFD is responsible for biodiversity conservation including environmental monitoring and fisheries management. The National Parks Ordinance established the BVINPT in 1961 (replaced by the National Parks Act 2006) as a statutory body with responsibility for the territory's terrestrial and marine national parks. The BVINPT is a non-profit organisation that receives an annual subvention from the BVI government and raises the remainder of its budget from park entrance fees and mooring permit fees. The Trust manages 21 national parks and protected areas, five of which are bird sanctuaries, including Dead Chest,

Fallen Jerusalem, Great Tobago, Little Tobago and Prickly Pear. Overall there are 20 designated bird sanctuaries, some of which are also proposed protected areas. Environmental education courses are part of the Community College curriculum, with additional public awareness environmental programmes managed by the BVINPT and CFD.

■ Birds

More than 210 species of birds have been recorded from the BVI. A small core of permanent resident breeding species is augmented by seabirds in the summer months and numerous Neotropical migrants from North America during the winter months. Puerto Rico and Virgin Islands EBA restricted-range species (of which there are 27) are represented by eight species (see Table 1), none of which is endemic to BVI. Of these eight species, the Antillean Mango *Anthracothorax dominicus* is a rare permanent resident and there are few recent confirmed reports although it is suspected to be more common on Anegada and perhaps Guana Island. Puerto Rican Flycatcher *Myiarchus antillarum* may be a rare nesting species but breeding has not been confirmed. The Puerto Rican Screech-owl *Megascops nudiceps* has been considered extirpated from the territory for this IBA analysis. While it was previously recorded with regularity, there are no reliable recent sightings although there have been reports of the characteristic calls and possible pellets both on Tortola and Guana Island.

Three globally threatened (all Near Threatened) birds have been recorded in BVI but their status is such that they have not been considered in the IBA analysis. Piping Plover *Charadrius melodus* is a rare migrant and the Caribbean Coot *Fulica caribaea* is now a rare visitor to the islands (although previously it was a rare permanent resident). However, a total of 33 adult coots, with 10 young, were counted on Josiah's Bay pond on Tortola in March 2006, so a population could re-establish itself if suitable wetland conditions persist. White-crowned Pigeon *Patagioenas leucocephala* was historically abundant throughout the islands but was nearly extirpated by hunting and is now considered rare and largely confined

Caribbean Elaenia, one of eight restricted-range species on the islands. (PHOTO: VINCENT LEMOINE)





Globally significant populations of Roseate Tern breed on the islands.
(PHOTOS: VINCENT LEMOINE)

to mangrove habitats. It may still nest in small numbers in isolated areas, particularly on Anegada. In the mid-1990s, the Guana Island Wildlife Sanctuary embarked on an ambitious project to reintroduce this species and re-establish a breeding colony on Guana. The effort has been successful and young birds from Guana may be responsible for an apparent increase in recent sightings, especially on Beef Island. More research is required on these globally threatened (and indeed the rarer restricted-range) species to determine their current status and populations.

During the summer months, BVI hosts a range of seabirds that nest on the offshore cays and islets. At least 15 species of seabird breed on the islands and the populations of Roseate Tern *Sterna dougallii* and Magnificent Frigatebird *Fregata magnificens* are globally significant. These nesting seabirds face a range of threats including human disturbance, and predation from a range of invasive mammalian predators.

IMPORTANT BIRD AREAS

BVI's three IBAs—the territory's international priority sites for bird conservation—cover 53 km² (including marine areas), and about 10% of the islands' land area. The IBAs have been identified on the basis of 16 key bird species (listed in Table 1) that variously trigger the IBA criteria. These 16 species comprise all eight extant restricted-range species, and eight congregatory seabirds. The Near Threatened Caribbean Coot *Fulica caribaea*, Piping Plover *Charadrius melodus* and White-crowned Pigeon *Patagioenas leucocephala* have not been considered in the analysis due to the nature of their small populations on the islands (see above). Great Tobago IBA (VG001) is protected as a national park and a bird sanctuary, and Anegada wetlands IBA (VG003) is partly (the western end) protected as an island-level nature reserve and Ramsar site. However, the eastern end wetlands are unprotected, as is Green

Wetlands on eastern Anegada, important for a wide diversity of waterbirds
(PHOTO: ANDY MCGOWAN)



Table 1. Key bird species at Important Bird Areas in the British Virgin Islands.

Key bird species	Criteria	National population	Criteria	British Virgin Islands IBAs		
				VG001	VG002	VG003
Brown Pelican <i>Pelecanus occidentalis</i>	■			■		27
Masked Booby <i>Sula dactylatra</i>	■			■		18
Magnificent Frigatebird <i>Fregata magnificens</i>	■	1,500–3,000				
Laughing Gull <i>Larus atricilla</i>	■	200				150
Royal Tern <i>Sterna maxima</i>	■					21
Sandwich Tern <i>Sterna sandvicensis</i>	■					275
Roseate Tern <i>Sterna dougallii</i>	■				1,755	157
Least Tern <i>Sterna antillarum</i>	■					180
Bridled Quail-dove <i>Geotrygon mystacea</i>	■		✓			
Antillean Mango <i>Anthracothorax dominicus</i>	■					✓
Green-throated Carib <i>Eulampis holosericeus</i>	■		✓	✓		✓
Antillean Crested Hummingbird <i>Orthorhynchus cristatus</i>	■		✓			✓
Caribbean Elaenia <i>Elaenia martinica</i>	■		✓	✓		✓
Puerto Rican Flycatcher <i>Myiarchus antillarum</i>	■		✓	✓		✓
Pearly-eyed Thrasher <i>Margarops fuscatus</i>	■		✓	✓		✓
Lesser Antillean Bullfinch <i>Loxigilla noctis</i>	■			✓		✓

All population figures = numbers of individuals.
 Restricted-range birds ■. Congregatory birds ■.

Cay IBA (VG002), and all three IBAs face a range of threats (see individual IBA profiles below). The system of salt ponds on Anegada is most urgently in need of national level protection. Great Tobago IBA represents one of the five main Magnificent Frigatebird *Fregata magnificens* colonies in the insular Caribbean. With the control of goats on the island, the frigatebird colony (and indeed the vegetation) should be monitored to assess the impact that the goats had, and to inform future management actions.

The IBA process has highlighted the need for more systematic surveys and monitoring to be undertaken. In the mid-1990s Green Cay IBA supported a large Roseate Tern *Sterna dougallii* colony. However, numbers appear to have declined at this site. At the same time, the numbers of this species on other islands (e.g. Cockroach Island, Cistern Rock, Necker Island, Virgin Gorda) have increased, but fluctuate dramatically. This suggests that the BVI population

of this bird is highly mobile and sensitive to disturbance. The network of breeding sites needs to be monitored on an annual basis to determine the conservation actions to be taken. There are also several potential additional IBAs in the territory, but further data are required. For example, the network of ponds and mangroves on Tortola (including Bar Bay), and Guana and Norman islands need more quantitative information, but may all qualify as IBAs. Guana and Norman islands appear to support significant breeding populations of Brown Pelican *Pelecanus occidentalis*. 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. Site status monitoring would be helpfully informed by regular survey results focused on the key bird species (both restricted-range species and seabirds alike) listed in Table 1.

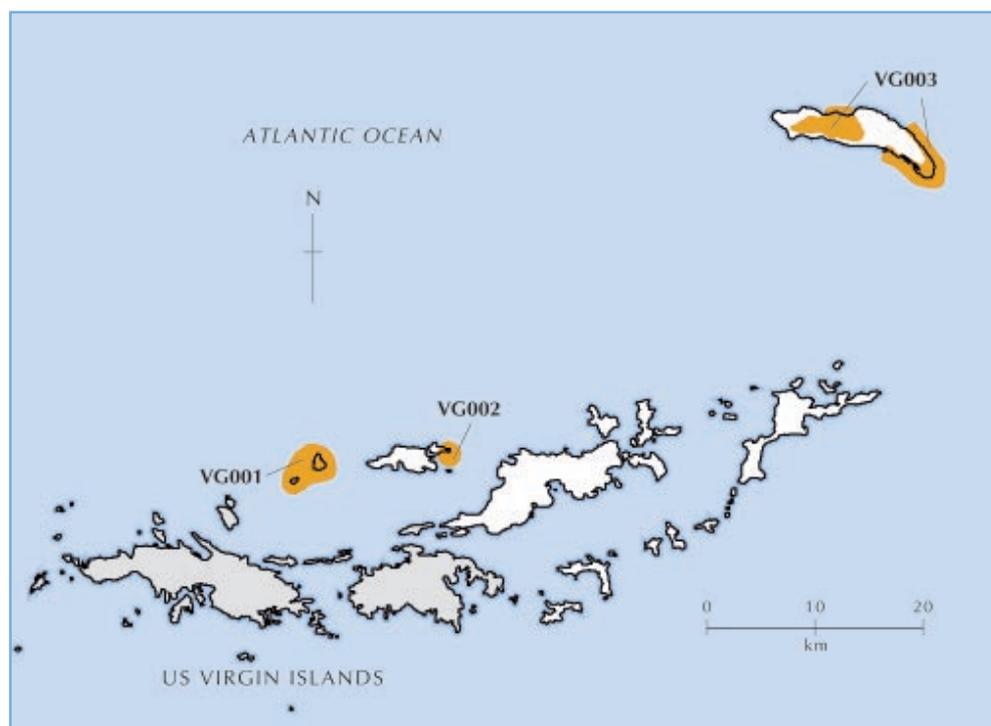


Figure 1. Location of Important Bird Areas in the British Virgin Islands.

KEY REFERENCES

- BARNES, J. A. (1992) Flamingos return to BVI. *Forum News* (NGO Forum for the UK Dependent Territories) 7: 2.
- CLUBBE, C., GILLMAN, M., ACEVEDO-RODRIGUEZ, P. AND WALKER, R. (2004) Abundance, distribution and conservation significance of regionally endemic plant species on Anegada, British Virgin Islands. *Oryx* 38: 342–246.
- COLLAZO, J. A., SALIVA, J. E. AND PIERCE, J. (2000) Conservation of the Brown Pelican in the West Indies. Pp 39–45 in E. A. Schreiber and D. S. Lee, eds. *Status and conservation of West Indian Seabirds*. Ruston, USA: Society of Caribbean Ornithology (Spec. Publ. 1).
- CONYERS, J. (1996) The BVI flamingo restoration project. *Critter Talk* (Bermuda Zoological Society) 19(2): 1–2.
- GOODYEAR, N. C. (1992) Flamingos return to Anegada: status update. *National Parks Trust News* (British Virgin Islands), August: 1.
- LABASTILLE, A. AND RICHMOND, M. (1973) Birds and mammals of Anegada Island, British Virgin Islands. *Carib. J. Sci.* 13: 91–109.
- LINDSAY, K., HORWITH, B. AND SCHREIBER, E. A. (2000) Status of the Magnificent frigatebird in the Caribbean. Pp 58–64 in E. A. Schreiber and D. S. Lee, eds. *Status and conservation of West Indian Seabirds*. Ruston, USA: Society of Caribbean Ornithology (Spec. Publ. 1).
- MCGOWAN, A., BRODERICK, A. C., CLUBBE, C., GORE, S., GODLEY, B. J., HAMILTON, M., LETTSOME, B., SMITH-ABBOTT, J. AND WOODFIELD, N. K. (2006) Darwin Initiative action plan for the coastal biodiversity of Anegada, British Virgin Islands. Downloaded from: <http://www.seaturtle.org/mtrg/projects/aneгада/> (July 2008).
- MCGOWAN, A., BRODERICK, A. C., GORE, S., HILTON, S., WOODFIELD, N. K. AND GODLEY, B. J. (2006) Breeding Seabirds in the British Virgin Islands. *Endangered Species Research* 3: 1–6. Downloaded from: <http://www.int-res.com/journals/esr/> (July 2008).
- MCGOWAN, A., WOODFIELD, N., HILTON, G., BRODERICK, A. AND GODLEY, B. (2007) A Rigorous Assessment of the Avifauna of a Small Caribbean Island: A Case Study in Anegada, British Virgin Islands; *Caribbean Journal of Science*, Vol. 43, No. 1, 99–116, 2007
- NORTON, R., CHIPLEY, R. AND LAZELL, J. (1989) A contribution to the ornithology of the British Virgin Islands. *Carib. J. Sci.* 25: 115–118
- PETROVIC, C., GEORGES, E. AND WOODFIELD, N. (2006) British Virgin Islands. Pp.55–64 in S. M. Sanders, ed. *Important Bird Areas in the United Kingdom Overseas Territories*. Sandy, U.K.: Royal Society for the Protection of Birds.
- RAFFAELE, H. WILEY J., GARRIDO, O., KEITH, A. AND RAFFAELE, J. (1998) *A guide to the birds of the West Indies*. Princeton, New Jersey: Princeton University Press.
- VEITCH, C. R. (1998) Survival of the Anegada Rock Iguana: an assessment of threats and possible remedial actions. Papakura, New Zealand: Unpublished report to BVI National Parks Trust.

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VG001 Great Tobago		National Park/Bird Sanctuary	
COORDINATES 18°26'N 64°50'W	 <p>Magnificent Frigatebird</p>	THREATENED BIRDS	<input type="checkbox"/>
ADMIN REGION Great Tobago and marine environment		RESTRICTED-RANGE BIRDS	<input checked="" type="checkbox"/> 6
AREA 1,695 ha		BIOME-RESTRICTED BIRDS	<input type="checkbox"/>
ALTITUDE 0–175 m		CONGREGATORY BIRDS	<input checked="" type="checkbox"/>
HABITAT Coastline, shrubland, forest			

Site description

Great Tobago IBA is one of the most westerly of islands in BVI, just 4 km west of Jost Van Dyke Island and c.11 km north-west of St John (USVI). It is a small (104 ha), uninhabited steep island of volcanic origin with exposed sea cliffs and mixed but sparse vegetation including dry forest and coastal scrub. The IBA includes all marine areas up to 1 km from the island. Recent removal of most of the feral goats by the BVINPT has resulted in the regeneration of vegetation particularly within the bird colony at Man O' War Bay (on the eastern side).

Birds

This IBA supports the BVI's only colony of Magnificent Frigatebird *Fregata magnificens*. With c.3,000 breeding birds this is one of the five largest colonies in the insular Caribbean and is globally significant. The main nesting areas are in the trees at Man O' War Bay and on the steep eastern hillsides. Other seabirds nesting on the island (albeit not in significant numbers) include Brown Booby *Sula leucogaster*, Brown Pelican *Pelecanus occidentalis*, Laughing Gull *Larus atricilla*, Roseate Tern *Sterna dougalli* and both tropicbird species *Phaethon* spp. Six (of the eight) Puerto Rico and the Virgin

Islands IBA restricted-range birds have been recorded from this IBA, including Bridled Quail-dove *Geotrygon mystacea*. However, Puerto Rican Flycatcher *Myiarchus antillarum* might only be a visitor to the island.

Other biodiversity

No globally threatened or endemic species have been recorded.

Conservation

Great Tobago Island is a designated national park and bird sanctuary under the management of the BVINPT. The Trust has established a culling program for the goats that are present on the island and have been severely impacting the vegetation. About 95% of the goats have been removed and vegetation is starting to regenerate. Loss of trees caused by hurricanes has posed a threat to the frigatebird colony (especially when compounded by the grazing pressure of goats that have prevented post-hurricane regeneration). As a short-term measure, artificial nesting platforms have been installed within the frigatebird colony to compensate for the lost trees. The island is relatively undisturbed, but entanglement of seabirds in monofilament fishing line appears to be a substantial threat.

VG002 Green Cay		Unprotected
<p>COORDINATES 18°27'N 64°42'W ADMIN REGION Green Cay and marine environment AREA 425 ha ALTITUDE 0–30 m HABITAT Coastline, shrubland</p>	 <p>Roseate Tern</p>	<p>THREATENED BIRDS <input type="checkbox"/></p> <p>RESTRICTED-RANGE BIRDS 5</p> <p>BIOME-RESTRICTED BIRDS <input type="checkbox"/></p> <p>CONGREGATORY BIRDS <input checked="" type="checkbox"/></p>

Site description

Green Cay IBA lies just 1 km east of the eastern end of Jost Van Dyke Island. It is a small (6 ha) volcanic island comprised of igneous bedrock reaching a maximum elevation of 30 m. The shore is rocky on the eastern end, but this grades to a broad sandy beach on the western (sheltered) end of the island. The IBA includes all marine areas up to 1 km from the island. Green Cay is covered in xerophytic coastal scrub.

Birds

This IBA is globally significant for its Roseate Tern *Sterna dougallii* colony. In 1996 a total of 1,755 were counted making Green Cay the largest breeding colony for this species in the US and British Virgin Islands. However, more recently numbers appear to have declined. A range of other seabirds breed in small numbers. Five (of the eight) Puerto Rico and the Virgin Islands EBA restricted-range birds have been

recorded from this IBA, namely Green-throated Carib *Eulampis holosericeus*, Caribbean Elaenia *Elaenia martinica*, Pearly-eyed Thrasher *Margarops fuscatus* and Puerto Rican Flycatcher *Myiarchus antillarum* (although this latter species might only be a visitor to the island).

Other biodiversity

No globally threatened or endemic species have been recorded.

Conservation

Green Cay IBA has been purchased by the BVI Government and is indentified as a proposed protected area. However, it has been proposed as a protected area within the system of national parks. High rates of visitation by yachts to the adjacent island of Sandy Spit which is 160 m to the south) will result in increasing disturbance to the nesting terns unless mitigated.

VG003 Anegada wetlands		Unprotected/Nature Reserve/Ramsar Site
<p>COORDINATES 18°44'N 64°21'W ADMIN REGION — AREA 4,000 ha ALTITUDE 0–5 m HABITAT Sea, wetland, mangrove, shrubland</p>	 <p>Sandwich Tern</p>	<p>THREATENED BIRDS <input type="checkbox"/></p> <p>RESTRICTED-RANGE BIRDS 7</p> <p>BIOME-RESTRICTED BIRDS <input type="checkbox"/></p> <p>CONGREGATORY BIRDS <input checked="" type="checkbox"/></p>

Site description

Anegada is 25 km north of Virgin Gorda, at the eastern end of the BVI. Unlike the other islands in the territory, it is a flat limestone island with an arid landscape. The soils are shallow and alkaline, and with low rainfall the vegetation is mainly xerophytic coastal scrub and dry woodland. Mangroves fringe much of the south and east coast, and the interior wetlands. The western sandy plain supports edaphic and xeric vegetation. The entire north coast is sandy beach. The IBA covers the networks of salt ponds and mangrove at the eastern and western ends of the island, and the adjacent marine areas.

Birds

This IBA supports a wide diversity of shorebirds, waterbirds and seabirds. The breeding population of Roseate Tern *Sterna dougallii* is globally significant, while those of Sandwich Tern *S. sandvicensis*, Royal Tern *S. maxima*, Least Tern *S. antillarum*, Laughing Gull *Larus atricilla* and Brown Pelican *Pelecanus occidentalis* are regionally so. Seven (of the eight) Puerto Rico and the Virgin Islands EBA restricted-range birds occur in the mangroves and coastal scrub. Antillean Mango *Anthracothorax dominicus* is rare on the island, and the Puerto Rican Flycatcher *Myiarchus antillarum* may only be a visitor.

Other biodiversity

The Critically Endangered Anegada rock iguana *Cyclura pinguis* occurs and is the focus of recovery efforts led by BVINPT. Critically Endangered hawksbill *Eretmochelys imbricata* and Endangered green *Chelonia mydas* turtles nest on the island. Plants include 16 that are globally threatened including three island endemics (*Acacia anegadensis*, *Metastelma anegadense* and *Senna polyphylla*) that are Critically Endangered.

Conservation

Anegada is government owned. The Anegada Nature Reserve (also a Ramsar site) embraces the 445-ha Flamingo Pond—a salt pond at the western end of the island. The extensive ponds and stands of mangrove on the eastern end of the island are presently unprotected. Conservation activities have included the reintroduction of the Caribbean Flamingo *Phoenicopiterus ruber* (18 birds introduced in 1992 started breeding in 1995, and the population in 2007 numbered over 140), *Cyclura pinguis* recovery activities and the development of a coastal biodiversity action plan. The IBA is threatened from development and grazing animals, and invasive mammalian predators (cats, rats, mongoose, dogs and pigs). Historically, hunting was responsible for the local extirpation of the flamingo, West Indian Whistling-duck *Dendrocygna arborea* and White-crowned Pigeon *Patagioenas leucocephala*.