

# Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7, as amended by Resolution VIII.13 of the Conference of the Contracting Parties.

Note for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers are strongly urged to provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of maps.

## 1. Name and address of the compiler of this form:

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FOR OFFICE USE ONLY.

DD MM YY		
Designation date		

Site Reference Number							

(With assistance from

**UK Overseas Territories Conservation Forum**  
 102 Broadway  
 Peterborough PE1 1JY  
 UK  
 Email: pienkowski@cix.co.uk )

## 2. Date this sheet was completed/updated:

11 November 2004

## 3. Country:

**UK (British Virgin Islands)**

## 4. Name of the Ramsar site:

**Anegada Eastern Ponds and The Horseshoe Reef**

## 5. Map of site included:

Refer to Annex III of the *Explanatory Notes and Guidelines*, for detailed guidance on provision of suitable maps.

a) **hard copy** (required for inclusion of site in the Ramsar List): yes  -or- no

b) **digital (electronic) format** (optional): Yes

## 6. Geographical coordinates (latitude/longitude):

Horseshoe Reef: 18 40 30N, 64 15 56 W

Eastern Ponds: 18 42 07 N, 64 17 01 W

## 7. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

The boundary for the proposed Eastern Ponds Ramsar site is less than 500 km east of The Settlement, Anegada whilst the Horseshoe Reef is a continuous system that surrounds the entire island of Anegada.

**Administrative region:** British Virgin Islands

<b>8. Elevation</b> (average and/or max. & min.) (metres):	<b>9. Area</b> (hectares):
Min.	Eastern Ponds: 463.65 ha
Max.	Horseshoe Reef: 29,545.46 ha
Mean	

**10. Overview:**

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

The Eastern Ponds area is situated within the eastern end of Anegada, whereupon the south-eastern coast is primarily comprised of an extensive mangrove system that is the largest continuous stand in the BVI. This site also represents the only mangrove system in the BVI that has not yet been altered by land clearance and development. The eastern and central parts of the island are eroded with hole-pocked limestone plains where there is very little soil.

The Horseshoe Reef is the third largest continuous reef in the eastern Caribbean. The entire shelf lies around Anegada and is extremely shallow, with few depths greater than 10 m. An extensive patch reef extends along the southern coast. The Horseshoe Reef provides a habitat for approximately 185 species of reef fishes and 30 species of coral.

**11. Ramsar Criteria:**

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

**1, 2, 3, 4, 7, 8**

**12. Justification for the application of each Criterion listed in 11. above:**

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

- 1 The Eastern Ponds are a good example of salt pond wetlands with associated intertidal forested wetlands in the Greater Antilles. The Horseshoe Reef is the third largest continuous reef in the Eastern Caribbean.
- 2 The Horseshoe Reef is an important biological reserve for coral species within the BVI and the Eastern Caribbean, particularly *Acropora* sp. that are slowly returning following the mass die-off throughout the Caribbean in 1998. Additionally the patch reefs and seagrass beds are an important foraging ground for the endangered sea turtles that nest on the northern coast of Anegada.
- 3 The Horseshoe Reef is an important habitat for trans migratory species, including endangered sea turtles and cetaceans that inhabit the western Atlantic Ocean.
- 4 The Eastern Ponds mangrove system provides an important habitat as an intermediate nursery for juvenile reef fish who begin in the seagrass beds, then move on to the patch reefs, followed by the fringing reef that comprise the Horseshoe Reef. The Horseshoe Reef is also an important habitat for sea turtles throughout their entire life cycle from hatchlings to nesting adults.
- 7 The site is also a nationally important breeding site for conch *Strombus gigas* and lobster *Panulirus argus*.

- 8 As stated under criterion 4 the Eastern Ponds mangrove system are an important habitat for juvenile reef fish and endangered sea turtles.

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**13. Biogeography** (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

**a) biogeographic region:**

Caribbean

**b) biogeographic regionalisation scheme** (include reference citation):

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**14. Physical features of the site:**

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	limestone, mud, nutrient-rich, sand
Geomorphology and landscape	coastal, island, mangrove lagoon, lowland, pools, subtidal sediments (including sandbank/mudbank)
Nutrient status	highly eutrophic
pH	Alkaline
Salinity	brackish / mixosaline, hypersaline / hyperhaline
Soil	mainly organic
Water permanence	usually permanent, usually seasonal / intermittent
Summary of main climatic features	Anegada lies in the hurricane area. Prevailing winds are easterly. Average temperature range 24 – 34° C. Rainfall is 750 – 1000 mm per annum.

The Horseshoe Reef is comprised of an abundant mixed coral and algal ridge system that extends from the easternmost corner of the island platform at “the White Horse” along the Horseshoe Reef to the north side of the island. The area is also comprised of *Acropora palmata*. The inshore reef extends roughly 1.25 miles east of Pelican Point and approximately 1320 ft to the west of the point. The inshore area consists of a sand bottom largely represented by algae and spermatophytes, while the outer regions are dominated by coralline algae and living coral *Acropora palmata* and *Millepora* are predominant, whereas in deeper areas, patches of *A. cervicornis* and *Monstaraea* can be found.

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**15. Physical features of the catchment area:**

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

Being of (coquina) limestone formation, the island of Anegada is unique in the BVI. Soils are shallow and alkaline, predominantly composed of calcium carbonate and detritus. There are a network of salt ponds throughout the western and eastern sections. The eastern and central parts of the island are eroded with coverage of hole-pocked limestone plains. The island is subjected to constant wind driven sea and salt spray, and with little rain, its vegetation is mostly stunted scrub and dry woodland. No agricultural activities occur within the eastern end of Anegada due to minimal soil cover, soil pH, limited rainfall, and constant winds that increase erosion in exposed areas, and gullyng takes place after heavy rainfalls.

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## 16. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

The Eastern Ponds mangrove system and the Horseshoe Reef play a critical role in shoreline stabilization and coastal protection for the entire island of Anegada, with particular reference to flood control from Atlantic storm swells during the hurricane season.

## 17. Wetland types

Horseshoe Reef:

The remaining 73 % of this area is comprised of sand, rock, rubble and algae. It should be noted that the 17.45% of coral reef is continuous on the northern and south-eastern end, whilst patch reefs cover the entire southern coast, interspersed with 9.5% seagrass beds.

Code	Name	Area (m <sup>2</sup> )	% Area
C	Coral reefs	51,516,476.75	17.45 %
B	Marine subtidal aquatic beds	281,38,517.31	9.5 %

Eastern Ponds:

Code	Name	Area (m <sup>2</sup> )	% Area
Zk (a)	Karst and other subterranean hydrological systems	2,991,300.33	63.59 %
J	Coastal brackish / saline lagoons	686,327.01	14.81 %
G	Intertidal mud, sand or salt flats	626,332.49	13.5 %
I	Intertidal forested wetlands	329,076.5	8.10 %

## 18. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site.

Eastern Ponds:

The main habitats include salt ponds, mangroves, limestone plains, coral reefs and seagrass beds. The predominant vegetation types include dry woodlands, cactus scrub and mangroves.

The limestone plain contains the most diverse range of flora: *Guaiacum*, yellow prickly (Zanthoxylum) and loblollies (*Pisonia*) are just a few. The northern coast is comprised of littoral hedges, such as bay cedar (*Suriana maritima*), *Tournefortia gnephalodes* and sea grape (*Coccoloba uvifera*). The salt ponds are bounded by buttonwood mangrove (*Conocarpus erecta*), *Coccoloba uvifera*, white mangrove (*Laguncularia racemosa*) and *Borrchia arborescens*. Whilst the southern mangrove system is a dense red mangrove (*Rhizophora mangle*) forest.

Horseshoe Reef:

The site is comprised of 185 fish species, from 55 families among the reef with 30 species of coral, with elk horn (*Acropora palamata*) being the most predominant. The southeastern reef section has an abundance of patch reefs, whilst the northern side is an almost continuous formation, broken only in a few areas. Additionally, there are 46 species of algae, from 14 families, with 2 species of sea grass on the sandy bottom of the reef flat. The site is also a nationally important breeding site for conch (*Strombus gigas*) and lobster (*Panulirus argus*). Hawksbill (*Eretmochelys imbricata*), green (*Chelonia mydas*) and leatherback (*Dermochelys coriacea*) turtles nest and forage within the site.

**19. Noteworthy flora:**

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Three species of flora of global significance exist inland within the Eastern Ponds site, including *Acacia anegadensis*, (Leguminosae) an Anegada endemic, *Malpighia woodburyan* (Malpighiaceae) a Puerto Rican bank endemic, and *Metastelma anegadenses* (Ascepiadaceae) a BVI endemic.

**20. Noteworthy fauna:**

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

The regionally endangered Hawksbill (*Eretmochelys imbricata*), green (*Chelonia mydas*) and leatherback (*Dermochelys coriacea*) turtles nest and forage within the Horseshoe Reef .

**21. Social and cultural values:**

e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

The site contains two pre-Columbian midden sites, in addition to other anthropogenic features of the period within the Eastern Ponds network and offshore within the Horseshoe Reef.

The Horseshoe Reef contains over 300 historic shipwrecks, dating back as far as the 16<sup>th</sup> century.

The site is important for scientific research of flora, fauna, historical features and the marine environment.

**22. Land tenure/ownership:**

Ownership category	On-site	Off-site
National/Crown estate	+	+
Private		+

**23. Current land (including water) use:**

Activity	On-site	Off-site	Scale
Nature conservation	+	+	Large-scale
Tourism	+	+	Medium-scale
Research	+	+	Medium-scale
Fishing: subsistence	+	+	Small-scale
Fishing: commercial	+	+	Medium-scale
Gathering of shellfish	+	+	Medium-scale
Bait collection	+	+	Small-scale
Rough or shifting grazing	+	+	Medium-scale
Flood control	+	+	Large-scale

**24. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:**

Activity	On-site	Off-site	Scale	Status of factor
Over grazing	+	+	Medium-scale	Existing
Over fishing	+	+	Medium-scale	Existing
Invasive species	+	+	Medium-scale	Potential
Land clearance	+	+	Large-scale	Potential

Dredging	+	+	Large-scale	Potential
Anchor damage	+	+	Large-scale	Potential
Scuba diver damage	+	+	Large-scale	Potential

The potential adverse factors refer to the type of development activities that are likely to occur if the site is not legally designated as a protected area.

There is the potential for damage from vessel anchors and scuba divers if the moratorium on diving within the Horseshoe Reef is revoked.

## 25. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site
Site management statement/plan implemented	+	
Fisheries Protected Area	+	
Scuba diving moratorium	+	

A section of the of the Horseshoe Reef, representing fourteen percent (41, 055,347 m<sup>2</sup>) of the total area is a legally declared Fisheries Protected Area, under the British Virgin Islands Fisheries Regulations 2003.

A moratorium on scuba-diving within the Horseshoe Reef has been in place for over six years in order to prevent anchor damage, scuba diver damage and removal of historical artefacts. Scuba diving is also a prohibited activity within a Fisheries Protected Area.

## 26. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

The entire Horseshoe Reef is a proposed Marine Protected Area under the Marine Parks and Protected Areas Ordinance, 1979 and the Eastern Ponds are a proposed Protected Area under the National Parks Ordinance, 1961.

## 27. Current scientific research and facilities:

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

A two-year collaborative project, from 2003-2005 entitled the 'Darwin Initiative Assessment of the Coastal Biodiversity of Anegada, BVI' is in progress with a main objective to carry out a detailed assessment of the coastal biodiversity of Anegada, including the network of ponds leading to a Biodiversity Action Plan and the creation of the capacity for its future monitoring. Partners include the BVI National Parks Trust, the Conservation and Fisheries Department, H. Lavity Stoutt Community College, Royal Botanical Gardens Kew, Royal Society for the Protection of Birds, and the UK Marine Turtle Research Institute.

The BVI National Parks Trust embarked upon a two-year collaborative project, from 2004-2006, funded by the UK Overseas Territories Environment Programme (OTEP) entitled 'Assessment & Improved Management of New and Existing Marine Protected Areas (MPAs) in the British Virgin Islands'. The project has the following objectives (a) determine whether the proposed MPAs are representative of all marine habitats within the BVI that require protection, (b) acquisition of baseline ecological data and, (c) development of adaptive management practices required to conserve, manage or restore these key marine habitats. As the Horseshoe Reef is a proposed MPA and the largest continuous reef in the BVI it will be a site of critical importance in this project.

**28. Current conservation education:**

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

As part of all of the aforementioned projects listed in Section 27, conservation education has been a priority with school visits and guided tours conducted by project scientists and the BVI NPT.

Brochures, posters, newsletters and a web page have also been created for the 'Darwin Initiative Assessment of the Coastal Biodiversity of Anegada, BVI' and the OTEP project 'Assessment & Improved Management of New and Existing Marine Protected Areas (MPAs) in the British Virgin Islands'.

Public lectures pertaining to the flora, marine environment and historical attributes of Anegada are presented throughout the year by project scientists at the H. Lavity Stoutt Community College (HLSCC) on Tortola and special lectures have also been presented as part of the HLSCC course 'Environments of the BVI'.

**29. Current recreation and tourism:**

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Tourism is predominantly focused upon the marine and coastal zone environment of Anegada, with visitors accessing the island predominately by sea. As there is currently a moratorium on scuba diving within the Horseshoe Reef visitor activities include: swimming, snorkelling and beach recreation.

**30. Jurisdiction:**

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.

Ministry of Natural Resources and Labour, British Virgin Islands Government  
Central Administration Complex, Road Town, Tortola  
British Virgin Islands

**31. Management authority:**

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

The Ministry of Natural Resources and Labour is the overall management authority for the site, with the Conservation and Fisheries Department responsible for the Fisheries Protected Area, and the BVI National Parks Trust is the managing authority for the proposed Horseshoe Reef Marine Protected Area and Eastern Ponds Protected Area.

Ministry of Natural Resources and Labour, British Virgin Islands Government  
Central Administration Complex, Road Town, Tortola  
British Virgin Islands

Conservation and Fisheries Department, British Virgin Islands Government  
Central Administration Complex, Road Town, Tortola  
British Virgin Islands

Joseph Smith Abbott, Director  
BVI National Parks Trust, P.O. Box 860  
Road Town, Tortola  
British Virgin Islands

**32. Bibliographical references:**

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 13 above), list full reference citation for the scheme.

**Site-relevant references**

Blytman, T.W. (2003) The Saga of the Anegada Island Shipwrecks 1500 – 1899. <http://www.blytman.com/anegada.htm>

- Davis, D. & Oldfield, K (2003) Archaeological Reconnaissance of Anegada, British Virgin Islands. In: *Journal of Caribbean Archaeology* 4, 2003, ed. by Clement, C. & Keegan, W.F., <http://www.flmnh.ufl.edu/JCA/davisandoldfield.pdf>
- Hepburn, I, Oldfield, S & Thompson, K (1992) *UK Dependent Territories Ramsar study: Stage 1*. Unpublished report to Department of the Environment, European and International Habitat Protection Branch, Bristol, from International Waterfowl and Wetlands Research Bureau/ NGO Forum for Nature Conservation in UK Dependent Territories, Slimbridge/ Sandy (Research contract, No. 7/2/126)
- Jarecki, L (1991) Hypersaline pond ecology in the British Virgin Islands. In: *Proceedings of the regional symposium on public and private cooperation in national park development, August 23-25 1991*, ed. by G. Cambers, 60-65. British Virgin Islands National Parks Trust, Tortola
- Jennison, M (1991) *Inclusion of the British Virgin Islands into the Ramsar Convention*. Unpublished M.Sc. dissertation, Heriot-Watt University, Institute of Offshore Engineering, Edinburgh
- National Parks Trust of the British Virgin Islands (1986) *A parks and protected area system plan for the British Virgin Islands*. National Parks Trust of the British Virgin Islands, Tortola
- Petrovic, C, Georges, E & Woodfield, N (2005) Important Bird Areas – British Virgin Islands. In: Sanders, SM et al (eds) *Important Bird Areas in the United Kingdom Overseas Territories*. RSPB, Sandy, UK.
- Scott, DA & Carbonell, M (eds.) (1986) *A directory of neotropical wetlands*. IUCN/IWRB, Cambridge/Slimbridge

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# Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7, as amended by Resolution VIII.13 of the Conference of the Contracting Parties.

Note for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers are strongly urged to provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of maps.

**1. Name and address of the compiler of this form:**

**Joseph Smith Abbott, Director**  
**BVI National Parks Trust**  
 P.O. Box 860  
 Road Town, Tortola  
 British Virgin Islands  
 Tel / Fax: 284-494-3904 / 284- 494-6383  
 E-mail: director@bvinationalparkstrust.org

FOR OFFICE USE ONLY.

DD MM YY		
Designation date		

Site Reference Number							

(With assistance from

**UK Overseas Territories Conservation Forum**  
 102 Broadway  
 Peterborough PE1 1JY  
 UK  
 Email: pienkowski@cix.co.uk )

**2. Date this sheet was completed/updated:**

11 November 2004

**3. Country:**

**UK (British Virgin Islands)**

**4. Name of the Ramsar site:**

**Fat Hogs and Bar Bays**

**5. Map of site included:**

Refer to Annex III of the *Explanatory Notes and Guidelines*, for detailed guidance on provision of suitable maps.

**a) hard copy** (required for inclusion of site in the Ramsar List): yes  -or- no

**b) digital (electronic) format** (optional): Yes

**6. Geographical coordinates** (latitude/longitude):

Park reference points go clockwise from **F1** to **F4**: **F1** 18° 26' 9.96" N, 64° 34' 8.25" W; **F2** 18° 26' 10.23" N, 64° 33' 35.53" W; **F3** 18° 25' 53.64" N, 64° 33' 35.38" W; **F4** 18° 25' 53.50" N, 64° 33' 51.74" W.

**7. General location:**

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

Fat Hogs Bay lies on the east end of Tortola, on the south shore between Hodge's Creek and East End Bay. The area includes the mangrove system fringing the bay and Bar Bay itself. Bar Bay is situated between Buck Island and Bar Bay Point on Tortola's southeastern-most end.

**Administrative region:** British Virgin Islands

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<b>8. Elevation</b> (average and/or max. & min.) (metres):	<b>9. Area</b> (hectares):
Min.	49 acres (approx. 20 ha)
Max.	
Mean	

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**10. Overview:**

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

Fat Hogs Bay is a flooded lagoon, fringed by mangroves. On the east-end of the bay is a green plain, with coconuts and mahoganies. The south and west sides are more elevated and covered with scrub and cactus. The mangroves are habitat for numerous seabirds, eleven species of which nest only at this site and at Josiah's Bay. The lagoon and mangrove are important nursery areas for commercial fish species.

**11. Ramsar Criteria:**

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

**1, ?2, ?3, 4, 8**

**12. Justification for the application of each Criterion listed in 11. above:**

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

- 1 Proposed Bar Bay National Park (28.1 acres) holds one of the last remaining extensive stands of red (*Rhizophora mangle*), black (*Avicenia nitida*), white (*Laguncularia racemosa*) and buttonwood (*Conocarpus erectus*) mangroves in the BVI (National Parks Trust, 1996). Bar Bay holds two main patterns of mangrove distributions: lagoonal and coastal.
  - a) Lagoonal, whereby the area known as the "creek" acts as an inlet of seawater into the mangrove system (NPT, 1996). Lagoonal mangrove stands serve an important function in further developing lagoons. In such lagoons salt concentrations exceed that of the surrounding sea water (along a gradient as one proceeds towards the road from the sea) due to evaporation; and,
  - b) Coastal regions, with stands of red mangrove (*Rhizophora mangle*) growing exposed to the Bay.

Totalling 113, 860 sq. yards, the Witches Brew mangrove stand is considered the second most important mangrove system on Tortola, and the third most important in the BVI. Overing and Hodge (1993) designate it as "critical habitat" in need of immediate protection.

The mangrove system is linked to sea grass beds and coral reef systems adjacent to Bar Bay Point.

2

- 3 Some 62 species of sea birds are found within the stand.
- 4 Some 62 species of sea birds are found within the stand.
- 8 The lagoon and mangrove are important nursery areas for commercial fish species.

**13. Biogeography** (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

**a) biogeographic region:**

Caribbean

**b) biogeographic regionalisation scheme** (include reference citation):

**14. Physical features of the site:**

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	
Geomorphology and landscape	
Nutrient status	
pH	
Salinity	
Soil	
Water permanence	marine
Summary of main climatic features	In the hurricane area. Prevailing winds are easterly. Average temperature range 24 – 34° C. Rainfall is 750 – 1000 mm per annum.

**15. Physical features of the catchment area:**

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

**16. Hydrological values:**

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Shoreline stabilization and coastal protection

**17. Wetland types**

Code	Name	Area (m <sup>2</sup> )	% Area
B	Marine subtidal aquatic beds		
C	Coral reefs		
G	Intertidal mud, sand or salt flats		
I	Intertidal forested wetlands		

Code	Name	Area (m <sup>2</sup> )	% Area
J	Coastal brackish / saline lagoons		

### 18. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site.

Fat Hogs Bay is a flooded lagoon, fringed by mangroves. On the east-end of the bay is a green plain, with coconuts and mahoganies. The south and west sides are more elevated and covered with scrub and cactus. The mangroves are habitat for numerous seabirds, eleven species of which nest only at this site and at Josiah's Bay. The lagoon and mangrove are important nursery areas for commercial fish species.

### 19. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

### 20. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

### 21. Social and cultural values:

e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

Proposed Bar Bay National Park also contains the ruins of the great house of the first native-born Lieutenant Governor of the BVI. Moreover, the graves of several early Quaker leaders are located at Bar Bay (BVI NPT and ECNAMP, 1986). These burial grounds should be left intact so as to be studied and preserved for future generations. There is a need to rehabilitate the site and reconstitute the graves' headstones.

### 22. Land tenure/ownership:

Ownership category	On-site	Off-site
National/Crown estate		+
Private	+	+

### 23. Current land (including water) use:

Activity	On-site	Off-site	Scale

The area was once the island's garbage dump, and it is now used as sheep and cow pasturage. A small amount of recreational fishing, mainly for barracuda, is carried out in the bay.

Garbage dumping, pesticides, fuel spills, and woodcutting all threaten Bar Bay's reef and mangrove environment. Coulianos and Sell (1994) suggest that under the area's current management plan, new interpretative facilities, such as a trail network and interpretative signage be utilised within a section of the mangrove stand. School or community groups, bird conservation groups, researchers, and the individual bird watcher could exploit outdoor recreation opportunities.

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**24. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:**

Activity	On-site	Off-site	Scale	Status of factor

Land is privately owned, and the owners have shown interest in developing the area as a commercial marina. These plans may be unrealistic because of the shallow reef that protects the bay. On the other hand, the price asked for the land currently makes it too expensive for Government purchase.

Grazing on adjacent lands has contributed to erosion and consequent siltation in the bay. Upland development has been going on and may increase, also increasing run-off and sedimentation in the bay.

Despite local opposition, Ros Ltd developed the East End Long Look By-Pass in 1996. Although adjacent ruins were not impacted, the mangrove system was, as anticipated, placed under considerable stress. Phillips (pers. comm. Sept. 1999) indicates that since construction began the mangroves have been exposed to increased wind velocity, greater noise and particulate pollution; all of which affects the endangered resident white-cheeked pintail duck population. Other impacts directly affecting the mangroves include:

- a) water flow into the creek has been partially obstructed due to the intrusion of the road into the park;
- b) the proximity of the road has aided in further sedimentation within the mangrove stand; and,
- c) the by-pass has effectively terminated several ecological processes supporting the function of the mangroves (NPT, 1996).

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**25. Conservation measures taken:**

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site

**26. Conservation measures proposed but not yet implemented:**

e.g. management plan in preparation; official proposal as a legally protected area, etc.

It is recommended that the area be declared a Category III park and be managed for protection of seabirds, historic sites, and marine habitats.

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**27. Current scientific research and facilities:**

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

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**28. Current conservation education:**

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

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**29. Current recreation and tourism:**

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

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**30. Jurisdiction:**

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.

Ministry of Natural Resources and Labour, British Virgin Islands Government  
Central Administration Complex, Road Town, Tortola  
British Virgin Islands

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**31. Management authority:**

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

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**32. Bibliographical references:**

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 13 above), list full reference citation for the scheme.

**Site-relevant references**


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