

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:

UK Overseas Territories Conservation Forum

102 Broadway

Peterborough PE1 1DG

UK

Email: pienkowski@cix.co.uk

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Designation date

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Site Reference Number

2. Date this sheet was completed/updated:

11 November 2004

3. Country:

UK (Montserrat)

4. Name of the Ramsar site:

Montserrat NW coasts and marine shallows

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):

d m s N

d m s 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 site includes the coast and inshore waters along the NW coast of Montserrat from the destroyed former capital of Plymouth to Marguerita Bay.

Administrative region: Montserrat

8. Elevation (average and/or max. & min.) (metres):

Min. No information available

Max. No information available

Mean No information available

9. Area (hectares):

10. Overview:

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

The site comprises a mosaic of important ecosystems including global priority wetland-types coral-reefs, sea-grass beds and mangroves, as well as cliffs, beaches and the estuaries and lowermost parts of the valleys of small streams, such as Runaway Ghaut. The site provides nesting beaches for important numbers of green and hawksbill turtles, and occasional nesting by leatherback and loggerhead turtles. Adult and juvenile hawksbill and green turtles use the feeding areas within the site throughout the

year. The site includes nesting sites for red-billed tropicbirds and terns, as well as nesting and feeding areas of herons and egrets. The waters are important for conch and for sharks. The outer parts of the site are used by migratory whales. The wetland is important habitat for fish stocks.

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	The site comprises a mosaic of important ecosystems including global priority wetland-types coral-reefs, sea-grass beds and mangroves, as well as cliffs, beaches and the estuaries and lowst valleys of small streams.
2	The site provides nesting beaches for regionally important numbers of the Endangered green and hawksbill turtles, and occasional nesting by Endangered leatherback and loggerhead turtles. Adult and juvenile hawksbill and green turtles use the feeding areas within the site throughout the year.
3	The site includes nesting sites for red-billed tropicbirds and terns, as well as nesting and feeding areas of herons and egrets. The waters are important for conch and for sharks.
4	The outer parts of the site are used by migratory whales.
8	The wetland is important habitat for fish stocks.

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	Montserrat is a formed by volcanic activity. The volcano is in a period of occasional activity.
Geomorphology and landscape	Steeply sloping coastal areas on the flank of the volcano.
Nutrient status	
pH	
Salinity	Marine
Soil	
Water permanence	Sea
Summary of main climatic features	Caribbean tropical. Rainfall high on mountain. Within hurricane zone.

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).

No information available

16. Hydrological values:

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

No information available.

17. Wetland types

Code	Name	% Area
A	Permanent shallow marine waters	70
B	Marine subtidal aquatic beds	18
C	Coral reefs	5
D	Rocky marine shores	2
E	Sand, shingle or pebble shores	2
I	Intertidal forested wetlands	1
J	Coastal brackish/saline lagoons	1
M	Permanent rivers/streams/creeks	1

18. General ecological features:

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

The site comprises a mosaic of important ecosystems including global priority wetland-types coral-reefs, sea-grass beds and mangroves, as well as cliffs, beaches and the estuaries of small streams. The site provides nesting beaches for important numbers of green and hawksbill turtles, and occasional nesting by leatherback and loggerhead turtles. Adult and juvenile hawksbill and green turtles use the feeding areas within the site throughout the year. The site includes nesting sites for red-billed tropicbirds and terns, as well as nesting and feeding areas of herons and egrets. The waters are important for conch and for sharks. The outer parts of the site are used by migratory whales. The wetland is important habitat for fish stocks.

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.*

No additional information available

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.*

No additional information available

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 area is important for local fisheries. Some coastal areas have cultural importance.

22. Land tenure/ownership:

Ownership category	On-site	Off-site
Crown	+	+
Private		+

23. Current land (including water) use:

Activity	On-site	Off-site	Scale
Fishing	+	+	
Sand-mining	+		
Recreational use	+	+	

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
Natural volcanic activity, affecting e.g. beaches and water-turbidity through ash-fall and eroded lava-flow	+	+	large

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.

Investigation and possible control of impacts of sand-mining, feral dogs and pigs,

27. Current scientific research and facilities:

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

No information available

28. Current conservation education:

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

No information available

29. Current recreation and tourism:

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

No information available

30. Jurisdiction:

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

Government of Montserrat

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.

No information available

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

Anon (1993) *Montserrat Environmental Profile*. Government of Montserrat.

Anon (2004) Status and exploitation of marine turtles in Montserrat. Draft report by Turtles in Caribbean Overseas Territories project.

Hepburn, I, Oldfield, S & Thompson, K (1992) UK Dependent Territories Ramsar Study: Stage 1. Report to the Department of the Environment.

Hilton, G.M. & Gray, G.A.L (2005) Important Bird Areas in Montserrat. In Sanders, S.M. et al (eds) *Important Bird Areas in the United Kingdom Overseas Territories*. RSPB, Sandy, UK.

Please return to: **Ramsar Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**
 Telephone: +41 22 999 0170 • Fax: +41 22 999 0169 • email: ramsar@ramsar.org

Information Sheet on Ramsar Wetlands (RIS)

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

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

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DD MM YY		

Designation date

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Site Reference Number

2. Date this sheet was completed/updated:

11 November 2004

3. Country:

UK (Montserrat)

4. Name of the Ramsar site:

Centre Hills and forested ghauts

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):

d m s N d m s 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 Central Hills area in the middle of the island of Montserrat.

Administrative region: Montserrat

8. Elevation (average and/or max. & min.) (metres): 9. Area (hectares):

Min. No information available
Max. No information available
Mean No information available

10. Overview:

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

This site is the largest remaining forest area on Montserrat, forming a single, almost continuous block of hill forest in the centre of the island, with cloud and rain forest at the centre. The wet forest is important for the endemic Montserrat Oriole, and the "Mountain Chicken" frog restricted to this and one other island, as well as other species. A series of small, steep streams (known locally as ghauts) radiate from central ridges. There is a transition from dry deciduous forest in the lowlands, through semi-deciduous and evergreen forest at higher altitudes to elfin forest on the summit of Katy Hill. The majority of the forest is secondary, having been cleared for agriculture during the plantation era. The frequent passage of hurricanes ensures that there is a range of successional stages. Most of the area is

steep and pathless. Apart from small agricultural and banana plots around the periphery, the area is little used or visited by humans. It forms the main water catchment for the island, and recently several trails have been cleared to allow tourists to explore the area.

Several of the streams (locally known as ghauts) that originate in the Centre Hills forest have a riparian fringe of native forest as they run through the open lowlands of northern Montserrat. This site includes the main forested ghauts. The ghauts themselves are very small, and there is little associated wetland habitat. The forested riparian areas are typically only 50-150m across, and are surrounded by agricultural and residential areas. However, several are directly connected to the large Centre Hills forest block.

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

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 This site is the largest remaining forest area on Montserrat, forming a single, almost continuous block of hill forest in the centre of the island, with cloud and rain forest at the centre, surrounded by moist forest and with forest riparian wetlands along the radiating streams.

 - 2 The vast majority of the world population (thought to be 200-400 pairs) of the Critically Threatened endemic Montserrat Oriole is resident in the Centre Hills. The Vulnerable Forest Thrush also occurs at relatively high densities throughout, and this site may well be the world stronghold for the species. The Near-Threatened Bridled Quail-dove is also common. The Critically Threatened endemic Montserrat Galliwasp *Diploglossus montisserrati* has only ever been recorded from the Cassava Ghaut area of the Centre Hills. The northern forested ghauts hold all three of Montserrat's bat species of global concern occurring - *Tadarida brasiliensis* (near threatened), *Ardops nicholli montserratis* (near threatened endemic subspecies), and *Monophyllus plethodon* (near threatened). Several Endangered or Vulnerable tree species are also found in the site [more info needed].

 - 3 The site is by far the largest area under broadly natural vegetation cover in Montserrat, and the stronghold for much native wildlife, including many of the island's endemic species and subspecies. In addition to those indicated in (2), these include the Mountain Chicken frog *Leptodactylus fallax* (endemic to Montserrat and Dominica), the endemic Montserrat Anole *Anolis lividus* (Iguanidae), endemic subspecies Montserrat Ameiva *Ameiva pluvianotata pluvianotata* (Teiidae) and Southern Leeward Dwarf Gecko *Sphaerodactylus fantasticus ligniservulus* (Gekkonidae), Montserrat Black Snake *Alsophis antillensis manselli* (Colubridae) Montserrat Blind Worm Snake *Typhlops monastus monastus* (Typhlopidae) numerous endemic insect species (for example, several hundred to a thousand beetle species are thought to be present in the site, of which approximately 30% are previously undescribed, and 10% are endemic). Among other taxa, the Centre Hills holds an undescribed endemic sawfly, an undescribed endemic long-horned grasshopper, and several undescribed flies that may be endemic. The site supports seven restricted-range and other bird species, in addition to those in (2).
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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):

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	Montserrat is a formed by volcanic activity. The volcano is in a period of occasional activity.
Geomorphology and landscape	Wet forests on the volcanic mountain
Nutrient status	
pH	
Salinity	Freshwater
Soil	
Water permanence	Gradation from permanent in cloud forest and streams, through rain forest to wet forest
Summary of main climatic features	Caribbean tropical. Rainfall high on mountain. Within hurricane zone.

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).

No information available

16. Hydrological values:

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

Water supply

17. Wetland types

Code	Name	% Area
Xf	Freshwater, tree-dominated wetlands	100

18. General ecological features:

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

This site is the largest remaining forest area on Montserrat, forming a single, almost continuous block of hill forest in the centre of the island. The wet forest is important for the endemic Montserrat Oriole, and the "Mountain Chicken" frog restricted to this and one other island, as well as other species. A series of small, steep streams (known locally as ghauts) radiate from central ridges. There is a transition from dry deciduous forest in the lowlands, through semi-deciduous and evergreen forest at higher altitudes to elfin forest on the summit of Katy Hill. The majority of the forest is secondary,

having been cleared for agriculture during the plantation era. The frequent passage of hurricanes ensures that there is a range of successional stages. Most of the area is steep and pathless. Apart from small agricultural and banana plots around the periphery, the area is little used or visited by humans. It forms the main water catchment for the island, and recently several trails have been cleared to allow tourists to explore the area.

The area was used in the past for plantations so most of the forest is secondary. Hurricanes, most recently Hugo, have also impacted on the forest structure.

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.*

[Montserrat has the following globally threatened tree species, but more information needed on their distribution in the Centre Hills and elsewhere.

Cedrela odorata Red Cedar VULNERABLE

Guaiaacum officinale Lignum vitae tree ENDANGERED

Swietenia macrophylla VULNERABLE Brazilian Mahogany/ Large-leaved Mahogany

Swietenia mahagoni ENDANGERED American Mahogany / Small-leaved Mahogany]

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.*

Birds

[to be completed]

The vast majority of the world population (thought to be 200-400 pairs) of the critically threatened Montserrat Oriole is resident in the Centre Hills. The vulnerable Forest Thrush also occurs at relatively high densities throughout, and this site may well be the world stronghold for the species. The near-threatened Bridled Quail-dove is also common. Seven other restricted-range species of the Lesser Antillean Endemic Bird Area are relatively common: *Eulampis jugularis* Purple-throated Carib, *Eulampis holosericeus* Green-throated Carib, *Orthorhyncus cristatus* Antillean Crested Hummingbird, *Cinclocerthia ruficauda* Brown Trembler, *Margarops fuscus* Scaly-breasted Thrasher, *Margarops fuscatus* Pearly-eyed Thrasher, and *Loxigilla noctis* Lesser Antillean Bullfinch. The site holds an assemblage of five of the 25 species restricted to the Lesser Antilles biome: *Eulampis jugularis* Purple-throated Carib, *Cinclocerthia ruficauda* Brown Trembler, *Allenia fusca* Scaly-breasted Thrasher, *Cichlherminia lherminieri* Forest Thrush, *Icterus oberi* Montserrat Oriole. The Centre Hills is the major site on the island for most of these species. The main exceptions to this are Green-throated carib, and Lesser Antillean Bullfinch, which are more common in the surrounding lowlands. Pearly-eyed Thrasher and Antillean Crested-hummingbird are abundant throughout Montserrat in all habitats. Brown Trembler, Montserrat Oriole and Bridled Quail-dove are confined to the Centre Hills and Roaches forest.

Point count monitoring carried out between 1997 and 2003 indicates that populations of all species except Montserrat Oriole have been stable or increasing in six years since the peak of the volcanic eruption. Most of the key species are found in all forest types in the Centre Hills. Purple-throated Carib reaches highest densities in dry forest, and Pearly-eyed Thrasher is most abundant in lowland areas. Montserrat Oriole occurs primarily in mesic and wet forest, and is scarce in dry forest At around 19 birds ha⁻¹, densities of Pearly-eyed Thrasher are among the highest in its range (Arendt).

Population estimates for restricted-range species in the Centre Hills

Species	Population estimate ¹ (individuals, with 95% confidence intervals)
<i>Eulampis jugularis</i> Purple-throated Carib	22,000 (12,000-42,000)
Antillean Crested Hummingbird, <i>Cinlocerthia ruficauda</i>	63,000 (32,000-127,000)
Scaly-breasted Thrasher, <i>Margarops fuscus</i>	7,100 (3800-12,800)
<i>Margarops fuscatus</i> Pearly-eyed Thrasher,	27,000 (20,000-36,000)
<i>Cichlerminia lherimieri</i> Forest Thrush	3,100 (1,800-5,200)

¹: Based on distance-estimation analysis of a point count census in December 1999, assuming a forest area of 1440 hectares. No estimates are possible for Bridled Quail-dove and Brown Trembler.

The majority of the biome-restricted and restricted-range species that occur in Montserrat are found in the forested ghauts, including relatively good densities of Pearly-eyed Thrasher, Scaly-breasted Thrasher, Purple-throated Carib, Green-throated Carib, Antillean Crested-hummingbird and Lesser Antillean Bullfinch. Globally vulnerable Forest Thrush occurs in relatively high densities in some of the wetter ghauts.

Other threatened/endemic wildlife

As by far the largest area under broadly natural vegetation cover in Montserrat, the Centre Hills are the stronghold for much native wildlife, including many of the island's endemic species and subspecies. The Montserrat Galliwasp *Diploglossus montisserrati* (CR) has only ever been recorded from the Cassava Ghaut area of the Centre Hills. The Mountain Chicken *Leptodactylus fallax* occurs relatively abundantly, and is absent elsewhere on the island. This, the second largest frog in the world, is found only in Dominica and Montserrat. The endemic Montserrat Anole *Anolis lividus* (Iguanidae) is common in the Centre Hills, and through many parts of the island. Montserrat Ameiva *Ameiva pluvianotata pluvianotata* (Teiidae) and Southern Leeward Dwarf Gecko *Sphaerodactylus fantasticus ligniservulus* (Gekkonidae) are endemic subspecies. The former is found in the edges of the Centre Hills, but is more common in the lowlands. The latter is abundant in the Centre Hills and throughout Montserrat. The endemic subspecies Montserrat Black Snake *Alsophis antillensis manselli* (Colubridae) is relatively common in the Centre Hills, but rarer in inhabited areas of Montserrat. The endemic subspecies Montserrat Blind Worm Snake *Typhlops monastus monastus* (Typhlopidae) occurs in the Centre Hills, and at some other sites in Montserrat, but its status is poorly known. The insect fauna of Montserrat is hitherto poorly known, but a study conducted in 2001-2003 indicates that there are numerous endemic species, many of which are restricted to, or concentrated in the Centre Hills forests.

As a generalisation, bat diversity on Montserrat is thought to be highest in the southern and western ghauts of the Centre Hills (Soldier Ghaut to Sappit Spring) (S Pedersen). *Tadarida brasiliensis* (Near Threatened), is probably present in this IBA, and is believed to be common and widespread throughout Montserrat, though under-recorded (S Pedersen). The endemic subspecies *Ardops nichollsi montserrratensis* is common on Montserrat, but specialises on smaller, native fruits, and although widespread, its population is likely to be concentrated in higher altitude native forests. Hence, the Centre Hills are probably an important stronghold on the island. Similarly, the nectarivorous *Monophyllus plethodon* (near threatened) is probably most common in the Centre Hills, but widespread elsewhere in Montserrat.

The insect fauna of Montserrat has been little studied, but has been the subject of a major research project in 2000-2003, which focused on the Centre Hills. Extremely high levels of endemism are apparent. For example, several hundred to a thousand beetle species are thought to be present in the site, of which approximately 30% are previously undescribed, and 10% are endemic. The Centre Hills may be the home the world's smallest Cerambycid (longhorn beetle). An enormous scarab beetle larva

found in dead logs in the Centre Hills awaits identification, but is likely to be a new genus; it is certainly endemic, and may be the largest insect in the UK and its Territories. Among other taxa, the Centre Hills holds an undescribed endemic sawfly, an undescribed endemic long-horned grasshopper, and several undescribed flies that may be endemic. Although sampling has not been sufficiently widespread to determine the Montserratian range of these species, it is inevitable that the Centre Hills is the most important site on the island, since it is the largest area of natural vegetation, and covers a large altitudinal range.

Many of the forest species found in the Centre Hills also occur in the forested ghauts.

Montserrat Anole *Anolis lividus* (Iguanidae)

Montserrat Ameiva *Ameiva pluvianotata pluvianotata* (Teiidae)

Southern Leeward Dwarf Gecko *Sphaerodactylus fantasticus ligniservulus* (Gekkonidae)

Montserrat Black Snake *Alsophis antillensis manselli* (Colubridae)

Montserrat Blind Worm Snake *Typhlops monastus monastus* (Typhlopidae)

The northern forested ghauts probably hold a similar bat fauna to the Centre Hills, with all three of Montserrat's species of global concern occurring - *Tadarida brasiliensis* (near threatened), *Ardops nichollsi montserratensis* (near threatened endemic subspecies), *Monophyllus plethodon* (near threatened).

The major insect sampling project that has run from 2000-2003 has made limited sampling visits to the northern forested ghauts, and in general, the insect fauna of the site is poorly known. It is likely to hold many of the endemic forest insects that occur in the Centre Hills, and possibly some distinct species that are characteristic of lowland, drier areas of Montserrat.

BIRDS

Threatened Species

Montserrat Oriole *Icterus oberi*

Forest thrush *Cichlherminia lherminieri*

Restricted Range Species

Bridled quail-dove

Purple-throated Carib *Eulampis jugularis*

Green-throated Carib *Eulampis holosericeus*

Antillean Crested Hummingbird *Orthorhyncus cristatus*

Brown Trembler *Cinlocerthia ruficauda*

Scaly-breasted Thrasher *Margarops fuscus*

Pearly-eyed Thrasher *Margarops fuscatus*

Forest Thrush *Cichlherminia lherminieri*

Lesser Antillean Bullfinch *Loxigilla noctis*

Montserrat Oriole *Icterus oberi*

Biome Restricted Species

Purple-throated Carib *Eulampis jugularis*

Brown Trembler *Cinlocerthia ruficauda*

Scaly-breasted Thrasher *Alenia fusca*

Forest Thrush *Cichlherminia lherminieri*

Montserrat Oriole *Icterus oberi*

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.

No information available.

22. Land tenure/ownership:

Ownership category	On-site	Off-site
Crown	+	+
Private	+	+

The Centre Hills are designated as a Forest Reserve but much of the area is privately owned.

23. Current land (including water) use:

Activity	On-site	Off-site	Scale
Water supply	+	+	

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
Natural volcanic activity, with intermittent heavy ash-fall	+	+	+

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
The Centre Hills are designated as a Forest Reserve.	+	

26. Conservation measures proposed but not yet implemented:

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

A species action plan has recently been drafted (May 2004) for the Montserrat Oriole. Proposed objectives include:

- Halt and reverse habitat degradation in the Centre Hills
- Restore an area of forest to a suitable state for the Oriole (i.e. taking a small area of forest within the Centre Hills or Roaches, as a demonstration site, and removing and/or controlling invasives etc.)

Introduced Ship rats *Rattus rattus* are abundant in the Centre Hills, at least in some years, and appear to have increased during the period of volcanic activity; the causes of their population fluctuations are unknown. They are known to predate the nests of Montserrat Orioles, to predate Mountain Chickens, and they probably have a profound effect on many other species and the ecology of the forest. Feral pigs are spreading rapidly through the forest from the south-east, having escaped from abandoned farms in the volcanic exclusion zone. They have already destroyed large clumps of *Heliconia caribea* (the nest plant of Montserrat Oriole) along streams in the south of the Centre Hills. They may be significant predators of Mountain Chickens and other wildlife; there is particular concern that they may predate the critically threatened Montserrat Galliwasp, which appears to be extremely rare, and to have a tiny range. Their effects on forest plant communities are unknown, but may be significant. Feral cats are present in the forest, and are known to predate Forest Thrushes. Their abundance and impact are difficult to assess at present. The exceptional density of Pearly-eyed Thrashers may also be

a conservation problem. The abundance of planted fruit trees, and the proximity of agricultural plots may be a key factor permitting them to become so abundant; as a result, they are major nest predators of Montserrat Oriole and Forest Thrush nests.

Ash falls from the still active volcano in the south of the island may continue to affect the ecology of the Centre Hills, particularly through the arthropod die-offs that result from heavy falls. Heavy falls also result in the physical destruction of Montserrat Oriole nests, and may have direct health impacts on bats and herptiles, though these impacts are poorly understood.

There is relatively little pressure for forest clearance in the Centre Hills, and the importance of the forest cover for watershed protection is widely realised. However, small-scale encroachment around the fringes, both for housing and agricultural development appears to be increasing.

There is currently minimal bird hunting in the Centre Hills. However, applications have recently been made to begin hunting, and the law currently permits hunting of the near-threatened Bridled Quail Dove, which is likely to be very vulnerable to hunting pressure, and for which Montserrat is probably a major stronghold.

The forested ghauts are less well known ecologically than the Centre Hills. However, it seems likely that Ship rats *Rattus rattus* are abundant, and may have a significant ecological effect. Feral goats are widespread, and must have considerable effects on plant communities. Being close to human habitation, pet dogs and cats, and feral cats are fairly common, and may be important predators of some species.

Rapid expansion of built areas in the north of Montserrat, as a result of the abandonment of the south has affected some ghauts, and is likely to have a significant impact in the next few years, both through direct habitat destruction, and the increased presence of dogs, cats and rodents. These small forest patches are frequently considered to be 'wasteland', and there is some dumping of rubbish.

Water is currently extracted from the ghauts for domestic use. There is anecdotal evidence that the ghauts are drying up, which could be an issue in the future both for biodiversity and people.

27. Current scientific research and facilities:

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

The Foreign and Commonwealth Office have funded a project to research the causes in decline of the Montserrat Oriole. It was a joint collaboration between the Montserrat Ministry of Agriculture, Lands and Housing, the Montserrat National Trust and the RSPB. The research has been extended for a further field season with support from the RSPB.

The Durrell Conservation Trust support monitoring of the Mountain Chicken.

Water is currently extracted from the ghauts for domestic use. There is anecdotal evidence that the ghauts are drying up, which could be an issue in the future both for biodiversity and people.

28. Current conservation education:

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

The Oriole project has produced an information sheet and teaching materials for teachers. One of the activities developed is a field trip into the Centre Hills.

Prior to the volcanic emergency, Montserrat National Trust had produced educational material on various aspects, including water systems, and this could be re-visited.

29. Current recreation and tourism:

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

Trails and a tourist map have been developed for the Centre hills. Local guides are available from the Forestry Department and the National Trust to take tourists into the Centre Hills.

30. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.
Ministry of Agriculture, Lands and Housing, Government of Montserrat

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.

Forestry Department, Government of Montserrat, [address,]

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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Please return to: **Ramsar Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**
Telephone: +41 22 999 0170 • Fax: +41 22 999 0169 • email: ramsar@ramsar.org