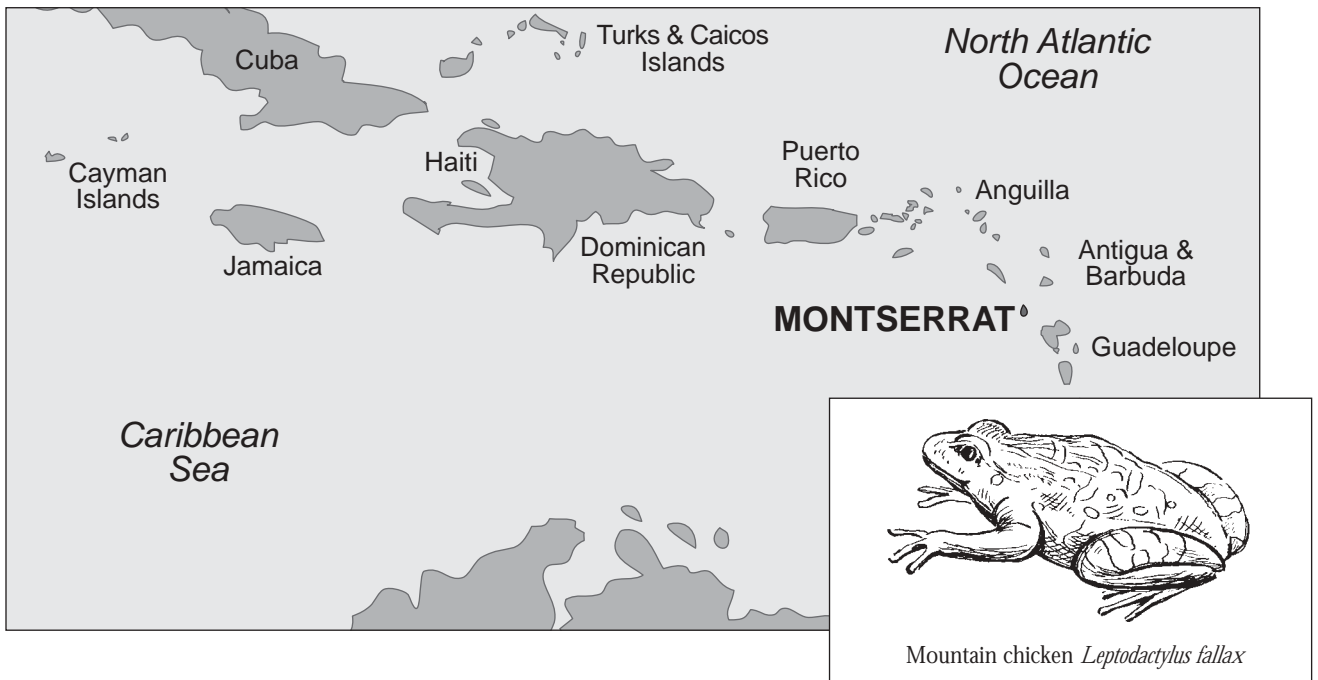


11: Montserrat



Introduction

Montserrat is situated in the Leeward Islands of the eastern Caribbean, lying at 16° 45' N, 60° 15' W. The land area of the island is 104 km². It is a small volcanic island with three main hill ranges, two of which are forest-covered. Except for a relatively small area in Roaches Mountain, one of the formerly forested mountain ranges (Soufriere and South Soufriere Hills) now lacks vegetation: a result of the recent volcanic eruptions.

Montserrat has recently suffered a series of natural disasters which have profoundly disrupted the economy and ecology of the island. In 1985 the population of Montserrat was 11,852. Following the major devastation of Hurricane Hugo in 1989, the more recent impacts of Tropical Storm Iris, Hurricane Luis and Hurricane Marilyn, and the major volcanic activity in the southern part of the island, most people have left the island. Tourism and agriculture were the main sectors of the economy.

International obligations relevant to nature conservation

Montserrat is included in the UK's ratification of the following international agreements:

- Convention Concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention)
- Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention)
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention)
- International Convention on the Regulation of Whaling

Implementation

Ramsar: Montserrat has been included in the UK's ratification of Ramsar since 1976. One site, Fox's Bay Bird Sanctuary, was proposed for Ramsar listing in 1986 but was considered not to meet the criteria for listing at the time. However, a re-appraisal of information on the site suggested that the present Ramsar criteria are met (Hepburn et al. 1992).

Funding was provided by WWF-UK to the Montserrat National Trust for a project to carry out ecological restoration and management of the sanctuary before the recent hurricanes and volcanic activity. Work included an ecological assessment of the biotic community and water quality at the site, together with an assessment of the impact of Hurricane Hugo and damaging activities such as housing development around its perimeter.

The Fox's Bay site has been substantially affected by the volcanic eruptions and its current status is unclear.

CITES: the enabling legislation for CITES is the Endangered Animals and Plants Ordinance 1976.

Bonn: the enabling legislation for this treaty is the Convention of Migratory Species of Wild Animals Ordinance 1985.

Protected areas

- **Forestry, Wildlife, National Parks and Protected Areas Ordinance 1996:** this Ordinance contains provisions to establish an environmental board to oversee the management of forests, wildlife, national parks and protected areas, to prepare a national forestry plan, and to set up an environmental fund to finance management activities.
- **Forestry Ordinance Cap. 95 1956:** this Ordinance was repealed when the Forestry, Wildlife, National Parks and Protected Areas Ordinance 1996 was enacted. The Instruments

previously allowed under Cap. 95 are enacted under the new legislation. Cap. 95 makes provision for the Governor to appoint a forestry board that can declare any land to be protected forest and specify appropriate restrictions on its use. The board may also recommend the purchase of lands by the Crown to serve as forest reserve. Under the Ordinance, clearing of forest, cutting of timber or fuelwood and livestock grazing is illegal without the permission of the forestry board.

One official forest reserve has been declared—the Silver Hills Forest Reserve—under Forest Reserve Proclamation Cap 95 (Butler 1991). The present zoning plan allows for the declaration of forest reserves and protected forest in the Centre Hills. Mapping and declaration of conservation areas will begin during 1999. These areas will protect the island's watersheds, watercourse and other sensitive areas, proposed national parks and wildlife habitat. Administratively, forests above 500m are considered to be protected.

Fox's Bay Bird Sanctuary, owned by the Montserrat Company, is on lease to the Montserrat National Trust, and was a declared a protected wildlife area in 1979. A few other areas have also been set aside for conservation, land being vested with the National Trust or the tourism authorities.

In 1980 the Caribbean Conservation Association (CCA), through the Eastern Caribbean Natural Areas Management Programme (ECNAMP), assisted the Montserrat National Trust in preparing a proposal to establish a national park. Plans to create Montserrat National Park, that would include Soufriere Hills and Galway Estate (total 810 ha), have existed since 1982. Sites within the area of the proposed park are already maintained by the National Trust (Butler 1991). The topography of Soufriere Hills and Galway Estate has subsequently been completely modified by volcanic eruption.

Habitats of major significance

Montserrat is a small volcanic island with two main areas of highland reaching altitudes greater than 740 m. Much of the land surface is very rugged, with deep gorges, and the coastline is characterised by truncated spurs and hanging valleys. Rainfall is seasonal, and varies with altitude. On lands with rainfall of more than 1,750 mm per year, lower montane and montane rain forest, palm break and elfin woodland represent the climax vegetation. At lower altitudes the vegetation consists of a mosaic of cactus and dry scrub woodland, littoral vegetation, semi-evergreen forest and small areas of mangrove.

Nearly all Montserrat's original forest cover has been cleared for agriculture or timber exploitation. Before the recent disasters, secondary forest and scrub re-growth covered approximately 7,300 ha (71% of total land area). About 3,000 ha of this total comprised rain, cloud or moist forest.

The most important wetland site on Montserrat is the small area of mangrove protected as Fox's Bay Bird Sanctuary. The only other area of mangrove is at Carr's Bay. This was reported in 1993 as severely deteriorated as a result of siltation, lack of water flow from land, and excessive dumping of hurricane debris.

One other wetland, the Belham River Estuary, is described in Scott and Carbonell (1986). A further wetland site which merits closer investigation is Chance's Pond. This is a unique site formed in a depression at the summit of Chance's Mountain, which varies seasonally from being a pond to a marsh. Very little investigation of the site has been undertaken. In addition there are several ponds in the north of the island that are used by migratory waterfowl and other birds.

In general, terrestrial areas important for conservation have been identified but detailed ecological studies have not been carried out. *The Preliminary data atlas for Montserrat* (ECNAMP 1980) indicates 'important marine habitats' and seagrass beds, together with non-marine wetland sites.

Species of major significance

Biodiversity assessment

An unpublished checklist of the flora has been prepared for the island by R.A. Howard, but there has been no assessment of the conservation status of species. Two species of shrub are thought to be endemic: *Xylosma serratum* (Flacourtiaceae) and *Rondeletia buxifolia* (Rubiaceae).

Various assessments of the conservation status of birds, reptiles and amphibians of Montserrat have been carried out, for example by Faaborg and Arendt (1985) and Blankenship (1990). *The Montserrat Biodiversity Project of the Fauna and Flora Preservation Society* (FFPS) carried out in 1995, focused on an assessment of the mountain chicken *Leptodactylus fallax*.

Distributions, relative abundances, and habitat requirements were also investigated for ten other reptile and amphibian species. The endemic galliwasp lizard *Diploglossus montisserrati* was not found during this survey, but it has subsequently been caught and measured by local forestry staff (Gray *in litt*). The Montserrat Biodiversity Project also collected information on bats which are the only native mammals on the island; eight of the ten species were recorded during the study. The project aimed to establish baseline population data and initiate conservation monitoring programmes. Project implementation was undertaken in conjunction with the Montserrat National Trust and the Government Forestry and Environment Divisions.

Amphibians and reptiles

Mountain chicken *Leptodactylus fallax*. This frog, which is restricted to Dominica and Montserrat, is hunted for food and therefore of considerable economic importance. In 1995, for the first time, juvenile mountain chickens were located and were found to be using 'nursery pools'. The volcanic emissions are thought to have severely damaged these pools. The mountain chicken primarily inhabits forested areas above 300 m.

The slippery back skink *Mabuya mabouya mabouya* is considered rare in Montserrat (Blankenship 1990).

Montserrat anole *Anolis lividus*: this endemic species is ubiquitous throughout Montserrat and is frequently abundant occurring in mangroves, amongst *Acacia* sp. and on walls (Schwartz & Henderson 1991).

Montserrat galliwasp *Diploglossus montisserrati* (CR) (Day in litt.): an endemic species of lizard, which was known only from one specimen collected in 1964, was re-found in September 1998 by local forestry staff.

Green turtle *Chelonia mydas* (EN): green turtles are resident around Montserrat and, together with hawksbill turtles *Eretmochelys imbricata*, are the most common species in Montserrat waters (Groombridge & Luxmoore 1989). Nesting possibly occurs at Yellow Hole, Bunkum Bay and Limekiln Bay; feeding areas include O'Garros, Bransby Point, Bunkum Bay and Trants Bay (Groombridge & Luxmoore 1989).

Hawksbill turtle *Eretmochelys imbricata* (CR): a species is relatively common year round in Montserrat waters, and reported nesting sites include Farm Bay, Yellow Hole, Rendezvous Bay, Little Bay, Carr's Bay, Bunkum Bay, Woodlands Bay, Limekiln Bay, Old Road Bay, Fox's Bay and Isles Bay (Groombridge & Luxmoore 1989). Foraging sites include O'Garros, Bransby Point, Rendezvous Bluff, Yellow Hole, and Trant's Bay (Groombridge & Luxmoore 1989).

Leatherback turtle *Dermochelys coriacea* (EN): rarely encountered around Montserrat. Nesting is also rare but has been recorded (Meylan 1983).

Loggerhead turtle *Caretta caretta* (EN): has been recorded off Montserrat but very rarely. Nesting has not been recorded. (Meylan 1983).

Birds

Montserrat oriole *Icterus dominicensis oberi* (LRnt): the IUCN conservation category for this species is in need of revision following the recent natural disasters on the island. A rapid survey undertaken recently recorded 100 pairs of the Montserrat oriole, representing half the previous population size. The forest habitats of this species have been devastated by acid rain, a consequence of the volcanic eruptions. An emergency action plan, prepared by RSPB, WWF and the Jersey Wildlife Preservation Trust, has been accepted by the Montserrat Government.

Mammals

Migrating humpback whales *Megaptera novaeangliae* (VU) and sperm whales *Physeter catodon* (VU) occasionally pass by the west coast (Gricks 1994). The sei whale *Balaenoptera borealis* (EN) may occur in Montserrat's waters, although this requires confirmation.

Four regionally endemic bat species occur in Montserrat. The tree bat *Ardops nichollsi montserratensis* is considered rare (Blankenship 1990).

Species protection

- **Forestry, Wildlife, National Parks and Protected Areas Ordinance 1996:** replaces the Wild Birds Protection (Amendment) Ordinance 1987.
- **Turtles Ordinance Cap. 112 1951:** this covers all marine turtle species. It provides for a closed season from 1 June to 30 September and specifies the minimum capture size as 9 kg.

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Key names and addresses

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Montserrat National Trust (Coordinator, National Parks), Parliament Street, Plymouth, Montserrat, West Indies. Tel: 809 491 3086.

CITES Management Authority, Government House, Plymouth, Montserrat, West Indies.

Conservation agencies

The Forestry and Environment Division of the Ministry of Agriculture, Trade and Environment is responsible for forestry and wildlife, national parks and protected areas, as well as the protection and management of environmental and natural resources. In addition the National Forestry Action Plan exists to promote agro-forestry.

The Montserrat National Trust is a locally based statutory NGO dedicated to the conservation and protection of the environment, and the preservation of the island's natural and historic sites. It was established by the Montserrat National Trust Ordinance in 1970. A senior civil servant is nominated by the Governor to serve on the Trust Council and to liaise with Government. Links with Government are further strengthened by maintaining close working relationships with the various departments which deal with agriculture, fisheries, forestry, physical planning and tourism. The Trust is regularly called upon by both Government and international conservation agencies as an advisory body.

The Montserrat Government and the Montserrat National Trust are members of the Caribbean Conservation Association.

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