

FRENCH ANTILLES

INTRODUCTION

based on information provided by Edouard Benito-Espinal of the Delegation Regionale a l'Architecture et a l'Environnement, Ministere de l'Environnement et du Cadre de Vie.

The French Antilles form two Overseas Departments of France; one comprises Martinique, and the other comprises Guadeloupe, its offshore islands Marie-Galante, Les Saintes and La Desirade, and two more distant islands, Saint-Barthelemy and the French part of Saint-Martin. Martinique, Guadeloupe and its offshore islands lie in the northern Windward Islands, Saint-Barthelemy and Saint-Martin in the northern Leewards. As Departments of France, the islands have the same political status as any Department in European France. Martinique is 1,100 sq. km in extent and has a population of about 400,000; the Department of Guadeloupe is 1,790 sq. km in extent (Guadeloupe 1,510 sq. km, Marie-Galante 153 sq. km, Saint-Martin 54 sq. km and Saint-Barthelemy 21 sq. km) and has a population of about 330,000. The economy is based on agriculture, particularly sugar, bananas and pineapples, and to an increasing extent on tourism.

Martinique and the western part of Guadeloupe (Basse-Terre) are mountainous and volcanic, rising to peaks of 1,397m and 1,484m respectively. High rainfall in the interior supports luxuriant tropical rain and cloud forest. The eastern part of Guadeloupe (Grande-Terre) and the other islands are low-lying limestone islands with dry woodland and cactus scrub. The climate throughout the islands is tropical with mean annual temperatures of around 26°C, and a fairly well defined dry season in the winter months. The average annual rainfall varies greatly from 800-1,500 mm on the smaller islands and Grande-Terre to over 7,500 mm in the highlands of Basse-Terre and Martinique.

In both Guadeloupe and Martinique there are important wetlands, mainly mangrove swamps and saline lagoons. The mangrove swamps of mainland Guadeloupe (9,668 ha) and Martinique (2,200 ha) include the largest tracts of mangroves in the Lesser Antilles, while the many lagoons on Saint-Martin and Saint-Barthelemy include the Grand Etang de Simsonbaai (1,250 ha), the largest saline lagoon in the Lesser Antilles. There are, however, no wetlands of any significance on La Desirade or Les Saintes islands.

A wide variety of waterfowl occur on passage and in winter, particularly Ardeidae, Anatidae and migratory shorebirds, but few species breed and only *Bubulcus ibis* is common (with a population of about 6,000 birds on mainland Guadeloupe alone). Hunting pressure is heavy on Martinique, Guadeloupe, Marie-Galante and Saint-Martin, and is thought to be at least partly responsible for the paucity of breeding birds.

Institutional Base for Wetland Conservation and Research

The principal governmental bodies concerned with environmental conservation are:

Direction de la Protection de la Nature, Ministere de la Qualite de la Vie; responsible for the establishment of parks and reserves, and setting the hunting regulations.

Delegation Regionale a l'Architecture et a l'Environnement, Ministere de l'Environnement et du Cadre de Vie. This conducts research on the fauna and flora of the islands.

Office National des Forets (ONF); responsible for the administration of parks and reserves. The ONF has conducted some research on mangroves.

Institut Scientifique et Technique des Peches Maritimes (ISTPM). This conducts studies on marine resources and aquaculture.

Institut National de la Recherche Agronomique (INRA). Research includes studies of fauna and flora, and water pollution.

The principal non-governmental bodies concerned directly with nature conservation are the

Union Regionale des Associations du Patrimoine et de l'Environnement en Guadeloupe (URAPEG), an association of all nature conservation groups in Guadeloupe, and the Union Regionale des Associations de Protection de l'Environnement a la Martinique (URAPEM). The latter is an association of five conservation groups in Martinique, the Societe pour l'Etude de la Protection et l'Amenagement de la Nature en Martinique (SEPANMAR), the Societe des Amis du Parc, the Alliance Nature et Developpement, the Association pour Nature et Environnement (APNE) and ASSAUPAMAR. SEPANMAR is a regional branch of SEPANRIT based in Bordeaux, France.

The University of the French Antilles and French Guiana (Centre Universitaire Antilles-Guyane) is very active in conservation related fields, and has conducted research on fauna and flora, marine resources and pollution.

Progress in Wetland Conservation and Research

As Departments of France, Guadeloupe and Martinique have the same legislation as that country. This includes the law of July 1960 which applies to the establishment of national parks, and the law of July 1976 which applies to all aspects of conservation, including reserves. No wetland reserves have as yet been created in the Department of Guadeloupe, but a reserve of 4,700 ha is currently being implemented in the Grand Cul-de-Sac Marin. This reserve, which will comprise a part of the Parc National de la Guadeloupe, will incorporate extensive mangrove swamps, coral reef formations, sea-grass beds and the offshore island of Fajou. Other areas proposed for protection include the Pointe des Chateaux lagoons in southeast Guadeloupe and the Marais de Folle Anse in western Marie-Galante. In Martinique, there is one managed nature reserve of 517 ha, the Reserve Naturelle de La Caravelle, which incorporates several small sea bays with mangroves and littoral vegetation. In addition, there are three "reserves maritimes de chasse" containing important wetland habitat; Baie de Fort-de-France (250 ha), Etang des Salines (90 ha) and Baie des Anglais (60 ha). All were established in 1976. Hunting is prohibited by law, but enforcement is reported to be poor.

Hunting legislation dates from 1953, when the legislation of Metropolitan France was extended to cover Guadeloupe and Martinique. The hunting regulations are revised each year by the Direction de la Protection de la Nature in the Ministere de la Qualite de la Vie. In recent years, all waterfowl have been protected except for the commoner Anatidae and larger shorebirds, which may be hunted on certain days of the week between mid July and the end of February on Martinique, Guadeloupe, Marie-Galante and Saint-Martin.

Almost all of the research conducted to date on wetlands in the French Antilles has focussed on mangrove ecosystems and pollution problems. Most important has been a recent multidisciplinary study of mangroves throughout the islands coordinated by Jacques Portecop at the Centre Universitaire Antilles-Guyane. Other relevant research has included a detailed review of hunting in the Department of Guadeloupe by Benito-Espinal (1982) and a study of the flora and avifauna of islands in the Grand Cul-de-Sac Marin by Portecop & Benito-Espinal (1984b).

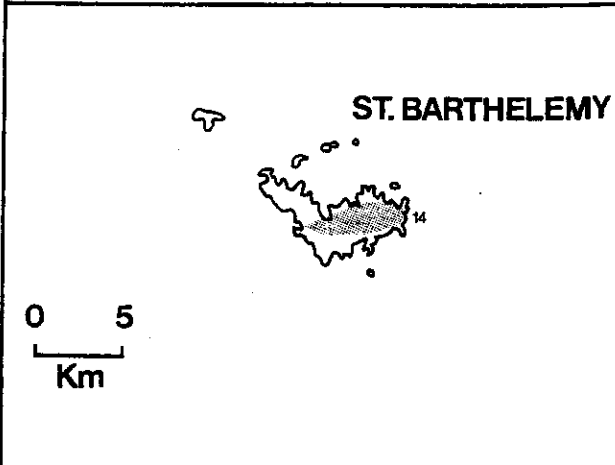
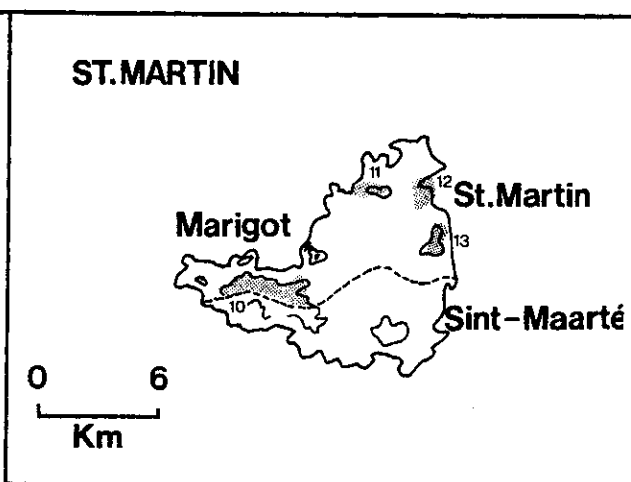
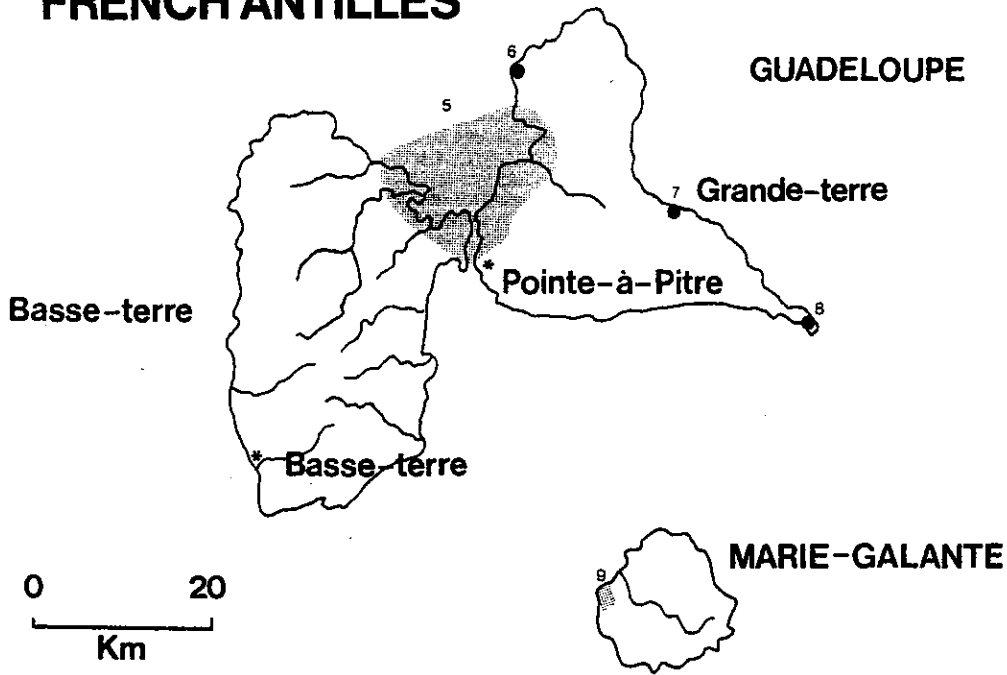
Major Threats to Wetlands and Waterfowl

Wetlands throughout the French Antilles are under threat from urban and industrial development, the construction of roads, airports, tourist hotels and marinas, and drainage for agriculture. The situation is particularly severe on Saint-Martin, where numerous hotel projects have seriously disturbed the saline lagoon ecosystems. Mangroves are being affected by seaborne oil pollution, and there is widespread pollution from domestic sewage, industrial waste (including heavy metals) and pesticide run-off. Some wetlands are being used as rubbish dumps, and in several areas sand mining is having a detrimental effect on nearby mangrove and marine ecosystems. Mangroves are also destroyed by hunters to provide open water areas attractive to migratory shorebirds.

Hunting poses a serious threat to waterfowl populations on the main islands. There are at least twenty-four hunting clubs in the hunting federations (Federations Departementales des Chasseurs) in Martinique and Guadeloupe, over 4,200 licensed hunters, and perhaps as many as 4,000 illegal hunters. Although only a small number of species of waterfowl are legitimate game, the regulations are often ignored and many protected species are shot. Heavy hunting pressure at the start of the open season in July is particularly harmful to resident waterfowl which are still breeding at that time.

Other significant threats to breeding waterfowl include illegal egg-collecting and predation by introduced predators.

FRENCH ANTILLES



WETLANDS

Site descriptions based on information provided by Edouard Benito-Espinal of the Ministère de l'Environnement et du Cadre de Vie, and Jacques Portecop of the Centre Universitaire Antilles-Guyane.

Baie de Fort-de-France (1)

Location: 14°34'N, 61°01'W; southeast of Fort-de-France and west of Lamentin, Martinique.

Area: 2,200 ha.

Altitude: 0m.

Province and type: 8.41.13; 01 & 08.

Site description: Extensive mangrove swamps and associated brackish to saline marshes, including the Marais du Lamentin and Marais de Riviere Salee; bordering a shallow sea bay.

Principal vegetation: Mangroves; sea-grass beds in the southern part of the bay and cultivation inland.

Land tenure: Mainly privately owned.

Protection: No habitat protection; 250 ha in the southeast are included within a Reserve de Chasse Maritime (established in 1976), in which hunting is prohibited.

Land use: Solid waste disposal in the south; extensive cultivation and urban and industrial development nearby.

Waterfowl: An important area for a wide variety of waterfowl. Breeding species include *Nyctanassa violacea*, *Bubulcus ibis*, *Butorides virescens*, *Oxyura dominica*, *Gallinula chloropus* and probably *Egretta caerulea*, *E. thula* and *E. alba*. Passage migrants and winter visitors include *Nycticorax nycticorax*, *Egretta tricolor*, *Ardea herodias*, *Dendrocygna bicolor*, *Anas americana*, *A. discors*, *A. clypeata*, *Aythya affinis*, *Himantopus himantopus* and eighteen species of Nearctic shorebirds.

Other fauna: *Pandion haliaetus* is a regular passage migrant.

Threats: There is a considerable amount of industrial and domestic pollution, and heavy hunting pressure during the hunting season.

Research and conservation: Identified by Putney as one of the largest remaining contiguous areas of relatively unspoiled mangroves in the Lesser Antilles and an area with multiple resource values. The greater part of the area has been proposed for protection. Enforcement of the existing Reserve de Chasse Maritime is reported to be poor.

References: Putney (1982).

Source: Edouard Benito-Espinal.

Criteria for inclusion: 3a.

Marais de Sainte Anne (2)

Location: 14°28'N, 60°52'W; north of Sainte Anne, near the southern tip of Martinique.

Area: c.250 ha.

Altitude: 0m.

Province and type: 8.41.13; 01 & 08.

Site description: Mangrove swamps bordering a shallow sea bay.

Principal vegetation: Mangroves.

Land tenure: Mainly privately owned.

Protection: None.

Land use: Cultivation and some urban and tourist development in surrounding areas.

Waterfowl: No information.

Other fauna: No information.

Threats: Domestic pollution.

References: Putney (1982).

Source: Edouard Benito-Espinal.

Criteria for inclusion: 0.

Etang des Salines (3)

Location: 14°24'N, 60°53'W; SSE of Sainte Anne, at the southern tip of Martinique.

Area: 240 ha.

Altitude: Near sea level.

Province and type: 8.41.13; 07 & 08.

Site description: A large saline lagoon and several small saline ponds with extensive fringing mangrove swamps and brackish to saline marshes.

Principal vegetation: Mangroves and brackish to saline marshes; dry woodland in surrounding areas.

Land tenure: A mixture of public and private ownership.

Protection: No habitat protection; the principal lagoon is included in a Reserve de Chasse Maritime (90 ha, established in 1976), in which hunting is prohibited.

Land use: None.

Waterfowl: Breeding species include *Butorides virescens*, *Oxyura dominica* and *Gallinula chloropus*; passage migrants and winter visitors include *Egretta caerulea*, *E. thula*, *E. alba*, *Ardea herodias*, *Dendrocygna bicolor*, *Anas americana*, *A. discors*, *Porzana carolina* and a variety of shorebirds.

Other fauna: *Pandion haliaetus* is a regular passage migrant.

Threats: Illegal hunting.

Research and conservation: Identified by Putney as one of the largest remaining relatively unspoiled saline lagoons in the Lesser Antilles. With the Baie des Anglais (site 4), an area with multiple resource values. The prohibition on hunting is reported to be poorly enforced.

References: Putney (1982).

Source: Edouard Benito-Espinal.

Criteria for inclusion: 3a.

Baie des Anglais (4)

Location: 14°25'N, 60°51'W; southeast of Sainte Anne, near the southern tip of Martinique.

Area: c.120 ha.

Altitude: 0m.

Province and type: 8.41.13; 01, 05 & 08.

Site description: Mangroves and associated marshes around a sea bay, with sandy beaches in the south.

Principal vegetation: Mangroves and brackish to saline marshes.

Land tenure: Mainly privately owned.

Protection: No habitat protection; 60 ha are included in a Reserve de Chasse Maritime (established in 1976), in which hunting is prohibited.

Land use: Cultivation in surrounding areas.

Waterfowl: Breeding species include *Butorides virescens*, *Oxyura dominica* and *Gallinula chloropus*; passage migrants and winter visitors include *Egretta caerulea*, *Ardea herodias*, *Anas americana*, *A. discors*, *Porzana carolina* and a variety of shorebirds.

Other fauna: The sea turtle *Eretmochelys imbricata* nests on the beaches and there is a sea-bird colony on a small offshore islet.

Threats: Illegal hunting.

Research and conservation: This area and the Etang des Salines (site 3) have been identified by Putney as an area with multiple resource values. The prohibition on hunting is reported to be poorly enforced.

References: Putney (1982).

Source: Edouard Benito-Espinal.

Criteria for inclusion: 3a.

Grand Cul-de-Sac Marin (5)

Location: 16°20'N, 61°35'W; between northern Basse-Terre and northern Grande-Terre, Guadeloupe.

Area: c.7,000 ha (including 6,068 ha of mangroves).

Altitude: 0m.

Province and type: 8.41.13; 01, 03, 07, 08 & 18.

Site description: A large shallow sea bay with extensive mangrove swamps, brackish to saline coastal lagoons with associated marshes, and swampy *Pterocarpus* forest; between Port-Louis in the east and Sainte-Rose in the west. The bay and swamps connect with the Petit Cul-de-Sac Marin to the south via the Riviere Salee which separates Grande-Terre from Basse-Terre. The main mangrove swamps, from east to west, are the Petit Canal area, Marais des Jumeaux, Marais Monnerville, Marais Z'Herbe a Cecile, Marais Lambi, Riviere Salee and the delta of the Grande Riviere a Goyaves. There are several small islands with mangrove swamps in the bay, notably Ilet a Fajou and Ilet a Christophe.

Principal vegetation: Mangrove swamps with *Avicennia germinans*, *Laguncularia racemosa*, *Rhizophora mangle* and some *Conocarpus erectus*; swamp forest with *Pterocarpus officinalis*; and marshes with *Cladium jamaicensis*, *Sesuvium portulacastrum*, *Sporobolus virginicus*, *Eleocharis mutata*, *E. intersticta*, *Lippia nodiflora*, *Wedelia calicina*, *Ipomoea pescaprae*, *Pluchea odorata*, *Nephrolepis rivularis*, *Cyperus alopecuroides*, *Rhynchospora holochoenoides* and *Acrostichum aureum*. There are very extensive sea-grass beds offshore (6,700 ha), moist forests to the west, and dry woodland to the east.

Land tenure: Almost entirely public land (state owned).

Protection: None.

Land use: Hunting and fishing; agricultural land, and urban and industrial development inland.

Waterfowl: A very important area for breeding, passage and wintering waterfowl. Breeding species include *Podilymbus podiceps*, *Ixobrychus exilis*, *Nyctanassa violacea*, *Bubulcus ibis* (several thousands), *Butorides virescens*, *Egretta caerulea*, *E. thula*, *E. alba*, *Rallus longirostris manglecola*, *Gallinula chloropus*, *Porphyryla martinica*, *Fulica caribaea* and probably *Oxyura dominica*. The small islands in the bay are particularly important for nesting Ardeidae, and there is a very large breeding colony and roost of *B. ibis* on Ilet a Christophe. Regular passage migrants and winter visitors include *Egretta tricolor*, *Ardea herodias*, *Plegadis falcinellus*, *Dendrocygna bicolor*, *Anas americana*, *A. bahamensis*, *A. discors*, *Aythya affinis*, *Porzana carolina*, *Fulica americana*, about fifteen species of Nearctic shorebirds, *Larus atricilla* and several *Sterna* spp. *Pelecanus occidentalis* is a regular visitor in small numbers.

A sample of 639 waterfowl shot by seven hunters in the Petit Canal area in 1983 and 1984 included 416 *Catoptrophorus semipalmatus*, 56 *Limnodromus griseus*, 47 *Numenius phaeopus*, 42 *Tringa flavipes*, 21 *Tringa melanoleuca*, small numbers of nine other shorebirds, 18 *Anas discors* and 2 *Plegadis falcinellus*.

Other fauna: *Pandion haliaetus* and *Ceryle alcyon* occur on passage and in winter. The sea turtles *Chelonia mydas* and *Eretmochelys imbricata* nest on the islands and there are extensive coral reefs and important fishery resources in the bay.

Threats: The principal threat is continuing drainage and filling in of the swamps for agricultural land, urban expansion and industrial development. There is some pollution from domestic sewage and pesticides used on adjacent agricultural land, and heavy hunting pressure during the open season.

Research and conservation: A considerable amount of research has been conducted on the mangrove ecosystems, particularly at Ilet a Fajou, and the avifauna of the area is well known. The mangrove swamps comprise the largest remaining area of relatively unspoiled mangroves in the Lesser Antilles. Putney has identified the Petit Canal area as an area with multiple resource values, and the whole region as one of the priority areas for conservation in the Lesser Antilles. About 4,700 ha including the Lambi mangroves, Ilet a Fajou and extensive sea-grass beds are part of the proposed Parc National de la Guadeloupe.

References: IUCN (1982); Putney (1982); Portecop & Benito-Espinal (1984a & 1984b).

Source: Edouard Benito-Espinal and Jacques Portecop.

Criteria for inclusion: 123.

Pointe d'Antigues Marsh (6)

Location: 16°27'N, 61°32'W; north of Port-Louis, northwest Grande-Terre, Guadeloupe.

Area: 100 ha.

Altitude: 0-1m.

Province and type: 8.41.13; 05, 07 & 08.

Site description: Extensive fresh to brackish coastal marshes and adjacent mangrove swamps behind a sea beach. The marsh floods during the rainy season (July to December) and dries out almost completely during the dry season.

Principal vegetation: Mangrove swamps with *Avicennia germinans*, *Laguncularia racemosa* and *Conocarpus erectus*, and marshes with *Eleocharis mutata*, *Lippia nodiflora*, *Ipomoea pescaprae* and *Mariscus planifolius*; dry woodland and cactus scrub inland.

Land tenure: Public land (state owned).

Protection: None.

Land use: Hunting. Tourist recreation along the beach and cultivation in surrounding areas.

Waterfowl: A breeding area for *Ixobrychus exilis*, *Butorides virescens*, *Gallinula chloropus* and possibly *Egretta caerulea*, and an important feeding area for several other species of Ardeidae. Passage migrants and winter visitors include nine species of Anatidae, *Porzana carolina*, 19 species of migratory shorebirds and *Larus atricilla*. In a sample of 469 waterfowl of 21 species shot by hunters during August and September 1983 and 1984, the commonest species were *Tringa flavipes* (39%), *Pluvialis dominica* (20%), *Calidris melanotos* (13%), *Arenaria interpres* (5%) and *Limnodromus griseus* (4%).

Other fauna: *Pandion haliaetus* and *Ceryle alcyon* occur on passage and in winter.

Threats: Plans exist to drain the entire marsh for the construction of a coal-fired power station, and there is heavy hunting pressure during the open season.

References: Putney (1982); Portecop & Benito-Espinal (1984a).

Source: Edouard Benito-Espinal and Jacques Portecop.

Criteria for inclusion: 3a.

Moule Mangroves (7)

Location: 16°20'N, 61°20'W; east and west of Moule on the northeast coast of Grande-Terre, Guadeloupe.

Area: c.50 ha.

Altitude: 0m.

Province and type: 8.41.13; 02, 05 & 08.

Site description: Mangrove swamps in the Baie du Nord Ouest and the small estuary of the Riviere d'Audoin, and adjacent sandy beaches.

Principal vegetation: Mangrove swamps with *Laguncularia racemosa*, *Conocarpus erectus*, *Rhizophora mangle* and *Thespesia populnea*; littoral vegetation, dry woodland and cactus scrub in surrounding areas.

Land tenure: Public land (state owned).

Protection: None.

Land use: The town of Moule lies between the two swamps and there is cultivation inland.

Waterfowl: An important area for Ardeidae and migratory shorebirds.

Other fauna: There are coral reefs offshore.

Threats: Pollution from domestic waste, and heavy hunting pressure during the open season.

References: Putney (1982).

Source: Edouard Benito-Espinal and Jacques Portecop.

Criteria for inclusion: 0.

Pointe des Chateaux Lagoons (8)

Location: 16°15'N, 61°11'W; at the eastern tip of Grande-Terre, Guadeloupe.

Area: c.25 ha.

Altitude: Near sea level.

Province and type: 8.41.13; 05 & 07.

Site description: A group of shallow saline lagoons and adjacent sandy beaches on a peninsula at the extreme eastern tip of the island.

Principal vegetation: Littoral vegetation in surrounding areas.

Land tenure: Public land (state owned).

Protection: None.

Land use: Tourist recreation along the coast.

Waterfowl: An important area for migratory shorebirds, particularly during the autumn passage. Common species include *Tringa flavipes*, *T. solitaria*, *Catoptrophorus semipalmatus*, *Arenaria interpres*, *Actitis macularia*, *Calidris pusilla* and *C. melanotos*.

Other fauna: The sea turtle *Eretmochelys imbricata* nests on the beaches and there are coral reefs offshore.

Threats: Illegal sand mining.

Research and conservation: The entire peninsula has been proposed as a protected area.

References: Putney (1982).

Source: Edouard Benito-Espinal.

Criteria for inclusion: 3a.

Marais de Folle Anse (9)

Location: 15°56'N, 61°19'W; south of St-Louis, on the west coast of Marie-Galante Island.

Area: 400 ha.

Altitude: 0-1m.

Province and type: 8.41.13; 05, 07, 08, 10 & 18.

Site description: A complex of fresh to brackish marshes, mangrove swamps and *Pterocarpus* swamp forest behind a sea beach. The Riviere de St-Louis flows through the northern part of the marshes.

Principal vegetation: Mangrove swamps with *Laguncularia racemosa* and *Rhizophora mangle*, swamp forest with *Pterocarpus officinalis*, fresh to brackish marshes with *Cladium jamaicensis*, and littoral vegetation; extensive beds of sea-grasses offshore.

Land tenure: Public land (state owned).

Protection: None.

Land use: Hunting and sand mining; agriculture and grazing inland.

Waterfowl: An important area for a wide variety of waterfowl. *Ixobrychus exilis*, *Nyctanassa violacea*, *Butorides virescens*, *Gallinula chloropus* and *Porphyryla martinica* breed, and *Bubulcus ibis*, *Egretta thula* and *E. alba* are common feeding visitors. Regular passage migrants and winter visitors include *Ardea herodias*, *Dendrocygna bicolor*, *Anas discors*, *A. clypeata*, *Oxyura dominica*, *Porzana carolina* and fourteen species of Nearctic shorebirds.

Other fauna: Sea turtles nest on beaches in the south.

Threats: The principal threats are the extraction of sand from the beach between the marshes and the sea, and domestic pollution from the town of St-Louis to the north. There is heavy hunting pressure during the open season.

Research and conservation: The wetland was identified by Putney as an area with multiple resource values, and has been included in a proposed protected area.

References: Putney (1982).

Source: Edouard Benito-Espinal and Jacques Portecop.

Criteria for inclusion: 3a.

Grand Etang de Simsonbaai (10)

Location: 18°04'N, 63°07'W; near the west end of Saint Martin / Sint Maarten Island.

Area: 1,250 ha; about 630 ha in French territory.

Altitude: 0m.

Province and type: 8.41.13; 07 & 08.

Site description: A large permanent saline lagoon, up to 6m deep, with a salinity of 33 p.p.t., and with some fringing mangroves; there is a narrow channel connecting the lagoon with Baie Nettle to the north. About 50% of the lagoon lies in the Dutch part of the island (see Netherlands Antilles site 11).

Principal vegetation: Patches of mangroves with *Avicennia germinans*, *Laguncularia racemosa*, *Conocarpus erectus* and *Rhizophora mangle*.

Land tenure: A mixture of public and private ownership.

Protection: None. (The Dutch portion of the lagoon has been designated a protected area.)

Land use: Tourist development around much of the lagoon and grazing of domestic livestock in the east.

Waterfowl: An important feeding area for a variety of Ardeidae, migratory shorebirds and Laridae.

Other fauna: There is an important lobster and conch fishery in the lagoon.

Threats: The lagoon is under serious threat from the development of marinas, tourist hotels and other facilities along much of the shoreline, and domestic pollution from the town of Marigot in the northeast.

Research and conservation: The largest natural saline lagoon in the Lesser Antilles, but now much degraded, particularly on the Dutch side of the border.

References: Putney (1982).

Source: Edouard Benito-Espinal and Jacques Portecop.

Criteria for inclusion: 3a.

Etangs de Grand Case (11)

Location: 18°06'N, 63°03'W; near Grand Case, on the north coast of Saint Martin.

Area: 70 ha.

Altitude: 0m.

Province and type: 8.41.13; 07 & 08.

Site description: Three shallow saline lagoons with muddy shorelines; there are small patches of mangroves at two of the lagoons.

Principal vegetation: Mangroves; dry woodland in surrounding areas.

Land tenure: Public land (state owned).

Protection: None.

Land use: Grazing of domestic livestock around the lagoons and urban development nearby.

Waterfowl: An important feeding area for waterfowl, particularly Ardeidae and migratory shorebirds. Late autumn counts in 1983 and 1984 included up to 15 *Pelecanus occidentalis*, 77 *Egretta thula*, 10 *Gallinula chloropus*, 106 *Tringa flavipes*, 20 *Actitis macularia* and 40 *Himantopus himantopus*.

Other fauna: No information.

Threats: Domestic pollution from the town of Grand Case.

References: Putney (1982).

Source: Edouard Benito-Espinal.

Criteria for inclusion: 3a.

Etang Chevrise and Cul-de-Sac (12)

Location: 18°06'N, 63°02'W; on the northeast coast of Saint Martin.

Area: c.30 ha.

Altitude: 0m.

Province and type: 8.41.13; 07 & 08.

Site description: A saline lagoon (Etang Chevrise) with muddy shoreline, and an area of mangrove swamps around a small sea bay (Cul-de-Sac).

Principal vegetation: Mangroves; extensive sea-grass beds offshore and dry woodland inland.

Land tenure: Etang Chevrise is public land (state owned); the Cul-de-Sac area is privately owned.

Protection: None.

Land use: Grazing of domestic livestock and urban development around Cul-de-Sac.

Waterfowl: A feeding area for *Pelecanus occidentalis*, Ardeidae and migratory shorebirds. Late autumn counts in 1983 and 1984 included up to 105 *Egretta thula* and smaller numbers of five other species of Ardeidae and nine species of shorebirds.

Other fauna: No information.

Threats: Seaborne pollution in Cul-de-Sac bay.

References: Putney (1982).

Source: Edouard Benito-Espinal.

Criteria for inclusion: 0.

Etang aux Poissons (13)

Location: 18°04'N, 63°02'W; on the east coast of Saint Martin.

Area: 140 ha.

Altitude: 0m.

Province and type: 8.41.13; 07 & 08.

Site description: A shallow saline lagoon with mangrove swamps.

Principal vegetation: Mangroves; littoral vegetation on the adjacent coast and dry woodland inland.

Land tenure: Public land (state owned).

Protection: None.

Land use: Tourism along the coast.

Waterfowl: A feeding area for Ardeidae and migratory shorebirds.

Other fauna: No information.

Threats: No information.

Research and conservation: Identified by Putney as one of the largest remaining relatively unaltered saline lagoons in the Lesser Antilles.

References: Putney (1982).

Source: Edouard Benito-Espinal.

Criteria for inclusion: 3a.

Wetlands on Saint-Barthelemy (14)

Location: 17°54'N, 62°50'W; east and central Saint-Barthelemy.

Area: c.45 ha.

Altitude: Near sea level.

Province and type: 8.41.13; 01, 05, 07 & 08.

Site description: Six saline lagoons: Grande Saline (16 ha) in the interior of the island, Etang du Grand Cul-de-Sac (7 ha), Etang du Petit Cul-de-Sac (3.5 ha) and Etang de Toiny (1.5 ha) near the east end of the island, and Etang de St. Jean (8 ha) and Etang de Public (3 ha) near Gustavia; and an area of mangroves and sandy beaches at Anse de Marigot on the northeast coast.

Principal vegetation: Mangrove swamps with *Avicennia germinans*, *Laguncularia racemosa* and *Conocarpus erectus* at Anse de Marigot; also some mangroves at Etang du Grand Cul-de-Sac, Etang du Petit Cul-de-Sac and Etang de St. Jean, and beds of *Ruppia maritima*. Cactus scrub and secondary vegetation in surrounding areas.

Land tenure: The saline lagoons are public land (state owned); other areas are privately owned.

Protection: None.

Land use: Grazing of domestic livestock; tourism along the coast, and urban development north of Etang de St. Jean.

Waterfowl: The lagoons provide a feeding area for a wide variety of passage and wintering waterfowl, particularly migratory shorebirds. Birds recorded during a survey of three ponds in December 1983 included *Nyctanassa violacea*, *Bubulcus ibis*, *Ardea herodias*, *Anas discors*, *Porzana carolina*, *Fulica americana*, *Himantopus himantopus* and over 170 Nearctic shorebirds of nine species.

French Antilles

Other fauna: No information.

Threats: Pollution from domestic waste at Grande Saline, and seaborne pollution at Anse de Marigot.

References: Putney (1982); Portecop & Benito-Espinal (1984a).

Source: Edouard Benito-Espinal.

Criteria for inclusion: 3a.