

Information Sheet on Ramsar Wetlands

1. **Date this sheet was completed/updated:** 15 August 1999

2. **Country:** Guatemala

3. **Name of wetland:** Punta de Manabique

4. **Geographical coordinates:**

15 50' North latitude

88 28' West longitude

5. **Altitude:** 0 to 20 metres above sea level. The continental portion has an average altitude of approximately 4 metres.

6. **Area:** 44,900 hectares of land, 22,000 hectares of fresh water and 66,000 hectares of ocean

7. **Overview:**

This is a marine area of shallow water with populations of primarily juvenile organisms and cold water of low salinity. It also includes a continental portion formed by a large sand bank that protects a strip of swamp with *Manicaria* palms. Farther inland, there is rainforest on land flooded by freshwater. This area is important because it serves as a reserve for populations of juvenile marine organisms, acts as a barrier that traps sediment from the water basin and creates a landscape of outstanding scenic beauty. This wetland is also an important refuge for wildlife, especially rare birds and mammals threatened at the national level.

8. **Wetland type:**

Natural coastal marine, of which the marine portion forms slightly more than two thirds of the total area. The types of wetland present at the site are A, B, E, F, I, with the most dominant being A, E, and I.

9. **Ramsar criteria:** 1a, 1c, 2b, 2c, 3b, 4b. Of greatest importance is criterion 1c because of the role this wetland plays as a stabiliser of the coastal plain. Its role in controlling floods was proven during Hurricane Mitch in 1998, and it provides food and energy to the human populations living at the site and to nearby urban populations. In addition, this wetland is shared with Honduras (although to a lesser extent), giving it an important role as a transnational coastal system.

10. **Map of site included?** Please tick **yes** -or- **no**

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

Ismael Ponciano G.

Luis Villar Anleu
Herman Kihn
Jorge Ramos

Fundación Mario Dary (FUNDARY)
Diagonal 6, 17-19 Zona 10
Guatemala 01010
Guatemala
Tel.: (502) 333 4957
Fax: (502) 366 7539
e-mail: fundary@pronet.net.gt

12. Justification of the criteria selected under point 9, on previous page:

The Punta de Manabique wetland, declared an area of special protection by Decree 4-89 (Law of Protected Areas), is a coastal marine site on the Caribbean coast of Guatemala. It is an outstanding and well-preserved example of the functioning of coastal ecosystems in the Neotropical Central American forest biogeographical province (Udvardy 8.1.4). The forest cover, characteristic of a tropical forest subject to flooding, has been reduced at a slower rate than the national average, and the fauna is protected in spite of the pressure of hunting and fishing by local inhabitants, both land owners and inhabitants.

The swamp is formed on detritus and peat that have been deposited over several millenniums of recent geological history by the Río Motagua, the longest river in Guatemala. A shallow marine bed and a large spit have been formed in the Gulf of Honduras, where accumulations of continental sediments. The peninsula of Punta de Manabique is some 20 kilometres long. It is populated by small swamps with palms, groups of coastal dunes and forests on consolidated materials. Río Motagua floods several kilometres before reaching the ocean, recharging the wetland with fresh water that continues toward the ocean through small passages and through two rivers that cross the wetland.

Its origin plays an important role. This wetland collects large amounts of sediment, continues to form a platform on the floodplain and supplies large quantities of fresh water to the ecosystem. During this century, part of the sediment load has been rubbish and sewage gathered by the Río Motagua mostly from the capital of Guatemala City. The Río Motagua drains an area with a population of about four million persons. In addition, there is agroindustrial waste (pesticides, plastics, etc.), collected on the agricultural plain at the bottom of the basin.

Fishing communities from Belize, Guatemala and Honduras have settled on the narrow coastal strip of the peninsula. They are fishermen who have settled there in this century. Because of their isolation and the absence of public services, these communities have maintained a low growth rate, and now more than ever, the young adults immigrate quickly to the interior of Guatemala and even to the United States. These settlements

of fishermen scattered along the coast have survived on the use of the wetland's natural resources. Fishing is the main activity and provides food and income from the sale of surpluses in Puerto Barrios, the largest sea port in Guatemala. Wherever the land is protected from flooding, the local inhabitants grow tropical garden crops and a bit of maize and rice. All of the energy for cooking comes from firewood and charcoal, which is prepared on a small scale in several communities and is a product that is sold in Puerto Barrios. The communities have lived in the wetland using resources on a scale that has made it sustainable. Nonetheless, since the 1960s, the local ranchers have burnt the forest and drained the land to increase pasture for their herds. This has been curtailed because of the weakness of the world market for beef. The wetland and the beach are natural attractions for the local and international tourist industry.

13. General location:

Punta de Manabique is located on the Atlantic Coast of Guatemala, in the department of Izabal, within the municipio of Puerto Barrios. The nearest city is the municipal seat that has developed based on the economy of the ports of Santo Tomás and Puerto Barrios. Together, these two ports handle 60 per cent of Guatemala's exports and imports. The most direct and easiest route to reach the wetland is by coastal shipping. Nonetheless, there are several roads in the southeastern part of the area that serve the cattle ranches and a recently inaugurated tourist resort. There are several unused railway tracks in the area that could be reconditioned upon renewal of train service.

14. Physical features:

The region around the wetland is part of the physiographic province called the Río Motagua depression, which is characterized at the site by plains in which elevations of only two metres above sea level are most numerous. The surface geology is formed by Quaternary alluvial deposits, occasionally deposited by the flooding of the rivers that flow through the area (Sarstún, Río Dulce, Motagua and Chamelecón in Honduras). The coasts reflect a clearly sedimentary origin. Most of the sediment is carried from inland by the Río Motagua, the most important river. Other sediments have been carried by marine currents and are composed of particles of coral reefs.

The wetland is important in the maintenance of coastal dynamics. There are two basic types of soil (according to the model proposed by Simmons et al.): the Petén-Caribe soils in the lowlands and miscellaneous soils. In both cases, they are deep soils, deposited on unconsolidated materials and are occasionally the result of mixtures of sand and peat. The presence of large quantities of peat is the result of large areas of *Manicaria* palm, the largest and most important of the coastal ecosystems. These swamps form more than 50 per cent of the land section in this area. Their depth varies greatly

during the year, although depth is between 0.25 and 0.75 metres during most of the year (an average of nine months). The climate is directly influenced by the trade winds, which blow predominantly from the northeast. In Thornthwaite's classification, the climate corresponds to a hot humid ArA'a' (hot, humid, without a well-defined dry season and with a humidity gradient from north to south). Rain is moderate to intense and is well distributed throughout the year, although February-April are considered to be dry months.

15. Hydrological values:

Three environments define the characteristics of this wetland: the Bahía de Amatique, the Gulf of Honduras and the inland swamps. The largest streams in Guatemala empty through the Río Dulce into Bahía de Amatique. It is open to the sea, but receives a large amount of continental water, transforming it into an estuarine lagoon. This bay captures large quantities of sediments and has large populations of sea grasses, especially *Talasia* spp. On the other hand, the Gulf of Honduras has a very different environment. It is a prolongation of the Caribbean and is affected by several important continental rivers. Among these are the Sarstún, Dulce and Motagua rivers and the smaller Piteros and Motagua Viejo streams. The special form of the Gulf, together with the large quantity of water arriving from inland, cause a significant decrease in salinity.

FUNDARY considers that this wetland plays an important role in stabilizing the coast, controlling floods and mitigating the impact caused by the recent Hurricane Mitch (November 1998), which affected all of Central America (see annex 2). The wetland acted as a natural barrier that softened the force of the hurricane and protected ecosystems farther inland.

16. Ecological features:

The ecological systems identified in the technical study of Punta de Manabique are marine, permanently flooded, coastal and inland.

The marine ecosystem is dominated by shallow water over a sandy bottom and two or three reef areas. The water is of low salinity and has a lower temperature than in the rest of the Gulf, primarily because of the contribution of fresh water from continental streams. The main flora are species of marine grass, among which the genus *Talasia* is the most important. It is an important area for the growth of fish and crustaceans.

These areas are permanently flooded coastal extensions forming bays, estuaries, salt marshes, swamps and small lagoons subject to the influence of the sea and fresh water from inland. They cover a broad area located almost at sea level. The water level is affected by tides and the dry and wet seasons. They provide a habitat for many aquatic animals, and there are reports in the larger lakes of manatees (*Trichechus manatus*), an endangered species. The flora is characterized

by mangroves in the estuaries, grasses and algae in swamps and small lakes and flooded forest of *Manicaria* in the swamps.

The coasts are dry areas along the edge of ocean and are characterized by three strips of clearly defined vegetation between the high tide line and the inland areas. There are pastures, *icacales* and *tarillales*. The first is a community of herbaceous plants and occasional open spaces of bare sand. The area of *icacales* is located at higher elevations and is dominated by trees and *icaco* bushes (*Chrysobalanus icaco*) along with other small, low shrubs. The *tarillales* are communities dominated by *tarillo* (*Phragmites comunis*), well established along the coast, which serve as habitat for wildlife because of their impenetrability.

The ecosystem of the coastal areas, including the *Manicaria* swamps, are true tropical forests. This part, also subject to flooding, is dominated by the *palma de confra* (*Manicaria*), accompanied by many other species (*palo sangre*, *barillo* and *marillo* are the most important), all characterized by buttress or adventitious roots that capture large amounts of sediment. This forest is scattered with small islands of aquatic plants, *tifas* and *lirios*. On land less often flooded, a heterogenous typically tropical forest develops, with representative species such as *caoba*, cedar, Leguminoseae, Lauraceae and palms. It is here that the larger mammals live: (*Allouatta palliata*), Baird's tapir (*Tapirus bairdii*) and jaguar (*Panthera onca*). One function of the forest growing in this region of the wetland is to stabilize the soil and sediments. This stabilization helps to permit partial communication between Bahía de Amatique and the Gulf of Honduras.

17. Noteworthy flora:

As described in the previous item, the flora of the ecosystems varies in function of the environment (see annex 3). Although the wetland is defined by its flora which in turn is a function of the wetland, the *confra* palm swamps are the most typical, representative and unique of the wetland. The main species are *confra*, *palo sangre* and *barillo*, although only the first and last have a distribution limited to this wetland and the other wetlands on the northern coast of Guatemala.

At Punta de Manabique, the vegetation reaches a height of 20 metres and is dominated by *confra* (*Manicaria saccifera*) and *barillo* (*Symphonia globulifera*) and is flooded at least nine months of the year. This ecosystem is much more valuable because it is at one of the most northern points of its distribution, which begins in the heart of the Brazilian Amazon. In spite of its being just a few metres from the beach, it is a freshwater swamp.

18. Noteworthy fauna:

There is a list of species of gasteropods, pelecypods, cephalopods, crustaceans, fish, amphibians, reptiles, birds and mammals reported by Punta de Manabique in annex 4.

The marine fauna, especially fish, are the most vulnerable species. Because of fishing, their populations have decreased considerably. Among them, *manjuas* (several species of anchovetas, sardines and other unidentified species) robalo, lobsters and snails merit special attention. Nonetheless, these animals are usually found in their juvenile stages in the wetland. Recent studies have confirmed that the populations are low, at least along the very shallow portion of the coast which is subject to intense small-scale fishing.

Inland, the main fauna is represented by important and endangered species such as the manatee (*Trichechus manatus*), Baird's tapir (*Tapirus bairdii*), jaguar (*Panthera onca*), mantled howler (*Allouata palliata*), *Tayassu tajacu* and *Tayassu pecari*, as well as smaller mammals. All of the populations of these large mammals are small and are on the point of disappearing if short-term measures are not taken.

Among the reptiles, special mention should be made of the *Crocodylus acutus*, because there is only a very small and isolated population. The population of common iguana (*Iguana iguana*) is subject to heavy capture every year and is in clear decline. Freshwater turtles, which were once widely distributed in Guatemala, find one of their few remaining habitats here. The marine turtles that arrive for nesting on the beaches are among the few species associated with this wetland and are seriously endangered.

There are no significant populations of aquatic birds, but their diversity and representativity is important. Among the important roles played by the coastal area is the link for Charadrides and Scolopacides that move north and south every year. This wetland is also one of the only places in Guatemala where nesting populations of *Dendrocygna autumnalis* and *Cairina moschata* (the last in the Caribbean) are found. The excellent quality of the habitat and the level of isolation makes them a refuge for *Eudocimus albus*, *Heliornis fulica*, *Picumnus olivaceus*, *Platalea ajaja*, *Thalurexia furcata*, *Thamnophilus punctatus*, *Threnetes ruckeri* and *Xiphorhynchus guttatus*.

19. Social and cultural values:

This is an area of light tourism because of its inaccessibility by land. Nonetheless, the local inhabitants gain from tourism, primarily through the provision of services, fish and transportation.

Research should be carried out in order to obtain more information about technologies appropriate for the sustainable use of resources. Several technical studies have been made in the area, mainly by the Universidad de San Carlos in Guatemala and students from the Ejercicio Profesional Supervisado (EPS) at that university.

The local inhabitants gather water in the form of rain water and from wells with a depth of 40 to 60 centimetres (Cardona-Pineda 1994).

Fishing is a family activity, most intense from January to May, when families normally catch up to 1000 kilos per day. During other periods, the catch can drop to 100 kilos per month. This production, however, represents a subsistence wage. In Puerto Barrios, prices are set in function of supply and demand.

20. Land tenure/ownership of:

Most of the wetland is public land, although there is a large area of private land, which according to the Estudio Técnico de Punta de Manabique (1991) tends to increase and can be divided into the following categories: 1) the shores of Bahía de Amatique - a large number of owners that are not from the region and that have acquired clear title to the land for the construction of houses; 2) the coast of the Gulf of Honduras - communal land which has a history going back to the middle of the twentieth century; 3) along the Canal de Los Ingleses and the Río San Francisco - private property in the form of small farms.

a) At the site: Most of the land is public-owned property, especially in the inaccessible and more isolated areas. Title to the land occupied by small farmers and some larger owners derives from rights created by possession. The land on which hotels and week-end houses are built is rented. Small farmers own their land. The percentage of occupied land is not known, and a study is urgently needed for management of land use.

b) Surrounding area: Land tenure around the proposed area is based on the registration of property.

21. Current land use:

In 1992, Punta de Manabique had the following settlements: Cabo Tres Puntas, La Máquina, El Manglar, Manabique, Puntarenas and Cambalache, San Francisco del Mar, Motagua, Villa Franca, Estero Lagarto and Tabladas. Population density is relatively low and is estimated to be about 1050 inhabitants (in annex 5 there is a table with demographic data). These settlements have at least two public schools.

At the site: Mainly unaltered forest (including ponds, rivers, canals, swamps and natural pastures) covering about 60 per cent of the northeastern part of the area. The remaining 40 per cent is covered by pasture for grazing, especially in the southeast. Around the human settlements, seasonal crops of maize and rice are grown, and small family gardens are maintained.

Surrounding area: Around Punta de Manabique, there are cattle ranches and large banana plantations producing for export.

According to CDC-CECON (1990), the persons settled in the wetland live almost exclusively from the small-scale use of natural resources, gathering products from the ecosystem, with concentration on fishing and agriculture and minor activities of hunting and the gathering of forest products. Products and

services are enjoyed by persons from outside the site in the form of fishing, hunting and use of the environment.

Sustainable uses within the wetland are fishing, tourism, gathering of medicinal plants and domestic use of the forest. Non-sustainable uses are agriculture and the production of charcoal, primarily because their disturbance of the ecology makes them more and more dependent on external inputs or because overexploitation can lead to their extinction in the region.

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

At the site: Threats to the integrity of the wetland are varied and increasing. Most important, the advance of livestock ranching and the appropriation of public land has led to a reduction of the wetland and is advancing from southeast to northwest. This phenomenon was greatest during the 1960s and 1970s. At the present time, no new ranches are being created, and farms within the wetland are not being worked.

Another threat is the large projects for tourist resorts, which are more harmful than traditional tourism. This threat can degrade the wetland very quickly. The oldest tourist project was begun six years ago and another was constructed in 1998 with an investment of more than US\$ 10 million. Although these projects claim to be environmentally beneficial in order to justify their development, they are far from being environmentally friendly because both their commercial aspects and their architecture do not respect sustainable development. Two large diggers recently filled the swamp for the construction of an area for vacation houses around a resort.

The third threat to the wetland comes from the settled communities, which, although rather small, have been using natural resources for several decades. Fishing in shallow water in a limited area, because of the nearby borders with Honduras and Belize, has led to the capture of more and more juvenile specimens. Furthermore, hunting and the capture of live wild animals for the regional market, primarily in Honduras, have seriously affected the wetland. Thousands of iguanas are captured annually, especially during the period of reproduction from January to April. The use of chemical fertilizers and pesticides for the growing of rice, pasture and other crops is slowly contaminating the swamps around the settlements.

Surrounding area: The large banana plantations producing for export have transformed the ecological conditions since the beginning of the century. Those situated on the floodplain of the Río Motagua have built dikes on the western edge in order to avoid flooding. This infrastructure will continue to affect the wetland and until now has not been noticed and studied. Only occasional natural phenomena such as Hurricane

Mitch, which devastated the region in November 1998, violently restore the natural conditions.

The ranches, as already mentioned, have destroyed the vegetation and have drained the swamp, using resources but reducing and degrading them in the long run. The flooding of November 1998 greatly reduced the herds.

23. Conservation measures taken:

In order to conserve the wetland, efforts have been made since 1988 to have this area declared a protected area. The Law on Protected Areas (Decree 4-98, Article 90) designates Punta de Manabique as a "special protected area." Article 34 of Decree 110-96 states that it is "of national urgency to declare Punta de Manabique a protected area."

The decree for the creation of the Punta de Manabique Wildlife Area is being considered by Congress, and the legal designation of this area is promoted by FUNDARY and endorsed by the Environmental Commission of Congress and the Consejo Nacional de Areas Protegidas (CONAP).

A master plan will be prepared by FUNDARY within one year. Legislation requires that the official authority for protected areas, in this case CONAP, approve the master plan for its implementation. The master plan has the support of the CONAP-RECOSMO project.

24. Conservation measures proposed but not yet implemented:

The Fundación Mario Dary, which participates in the promotion and management of the proposed protected area, also participates in the administration of the wetland. It carries out field activities with trained staff and the participation of several communities in the wetland. Because of transportation difficulties, the isolation of the human settlements and a scarcity of financial resources, FUNDARY is working in only five of the twelve existing communities.

The following projects have been proposed:

- Support of local inhabitants for the establishment and improvement of their children's education

- Creation of environmental education programmes for school children and adults

- Study of the sustainable use of the resources traditionally used by the local communities, such as fishing, wildlife, firewood and charcoal, and study of the effects of pollution from waste from outside the wetland. All of these proposals have initial financing from the European Union and the Global Environment Fund (GEF).

- Survey of resources through a Rapid Environmental Survey (EER), to be finance by the regional project

PROARCA/Costas. Field work for the EER is to begin in September 1999.

Study of land tenure to provide more details about this important aspect of wetland management. Financing is not yet available.

Development of low-impact tourism for several communities with initial financing from the CONAP-RECOSMO project.

Several transborder activities are to be carried out in the future. During a recent meeting of the Alianza Trinacional para la Protección del Golfo de Honduras, FUNDARY brought up the problem of trade in wildlife, specifically iguanas, along the border with Honduras. It was decided to create ties with several organisations that manage nearby protected areas on the border with Honduras. It is hoped to establish contact with the Fundación Héctor Pastor Fasquelle and PROLANSATE, which manages the Parque Nacional Jeannette Kawas. The Wildlife Conservation Society (WCS) will be approached to coordinate work on trails and ecotourist corridors proposed by that organisation.

It is important to mention the project for the protection of the "Sistema Arrecifal Mesoamericano." This will be presented next year to the Global Environment Fund (GEF) and must be a multinational project.

25. Current scientific research and facilities:

Several studies are being made with the participation of the Facultad de Agronomía and the Escuela de Biología of the Universidad de San Carlos de Guatemala. Among the projects are a survey of the common iguana (*Iguana iguana*) population and a study of the dynamics of wetland ecosystems.

26. Current conservation education:

Environmental education is being carried out in five villages in order to create awareness among the local inhabitants about the importance of conservation in the wetland. There is strong emphasis on wise use and conservation for future generations in all of the activities of FUNDARY.

27. Current recreation and tourism:

FUNDARY is deeply committed to tourism and recreation with a focus on supporting the communities and during 1999 intends to support the community of Jaloa to develop an ecological camp grounds. In the community of Punta de Manabique, FUNDARY will support improvement in infrastructure for tourism and construct a raised path to visit the swamp and carry out a training programme for the local committee for improvement of the administration of the restaurant and lodge, which already receive a small number of tourists.

28. Jurisdiction:

Territorial jurisdiction: There are three agencies with territorial jurisdiction in the wetland:

1. The Oficina de Control de Reservas Territoriales del Estado (OCRET) is responsible for one kilometre of land inland from maximum high water. It rents out use of that land.

2. The Oficina de Límites y Aguas Internacionales of the Ministry for Foreign Affairs is responsible for the status of bodies of water and relations with neighbouring countries.

3. The local municipal government, in the town of Puerto Barrios, is responsible for public services, collection of taxes, municipal fees and civil administration.

Administrative jurisdiction:

1. The Consejo Nacional de Areas Protegidas (CONAP) is the legal administrator of all the protected areas on public land, but can delegate jurisdiction to public agencies or subcontractors. In addition, CONAP is the Management Authority for Guatemala of the Wetlands Convention (Ramsar, 1971).

2. The Instituto Guatemalteco de Turismo (IGUAT) is responsible for the Zona de Desarrollo Turístico de Manabique (which includes the wetland) declared in 1988.

29. Management authority:

CONAP has delegated administration at the site through specific agreements to the Fundación Mario Dary (FUNDARY).

30. Bibliographical references: