

Information Sheet on Ramsar Wetlands

1. **Date this sheet was completed/updated:** 8 March 1996

2. **Country:** GUATEMALA

3. **Name of wetland:** Bocas del Polochic

4. **Geographical coordinates:**

15°25'11"N

89°21'42"W

5. **Altitude:** sea level

6. **Area:** approximately 21,000 hectares

7. **Overview:**

This wetland is formed by flooded and floodable land covered with broad-leaved trees and communities of aquatic vegetation. It is crossed by two large rivers, the Río Polochic and the Río Oscuro (both tributaries of Lago de Izabal), and several smaller permanent and seasonal rivers, ponds and bays. The natural geographic isolation provided by the Santa Cruz mountains to the north and the de las Minas mountains to the south has made it possible for an endemic community of fauna to develop which is characteristic of the wetlands and common to the low montane forests. The Lago de Izabal region bordering on the Bocas del Polochic reserve is the most important reproductive site for the manatee on the Guatemalan Atlantic coast (Quintana, 1993).

8. **Wetland type:**

F, K, L, M, N, O, P, S, T, W, X, Y, 4, 9

9. **Ramsar criteria:**

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

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

Fundación Defensores de la Naturaleza

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

13. **General location:**

This wetland is located in the delta of the Río Polochic on the western shore of Lago de Izabal (see figure 2). It is located between the Sierra de Santa Cruz to the north and the Sierra de las Minas to the south which are the source of its affluents. It is in the municipality of El Estor, in the department of Izabal.

14. **Physical features:**

Geology and geomorphology: All of the depression of the Polochic-Lago de Izabal-Río Dulce-Bahía de Amatique complex forms an area of limestone sediment that is estimated to have occurred during the Miocene. There are many faults in the region, especially along the Río Polochic where there is lateral movement.

All of the wetland is on Quaternary alluvial deposits. Towards the north, there is the massive rock complex of the Sierra de Santa Cruz formed by rocks of unknown age, but predominantly serpentine. Towards the south in the Sierra de las Minas, there are rock outcroppings from the Carboniferous-Permian period of the Santa Rosa group (lutite, sandstone, conglomerates and phyllite) and rock from the Palaeozoic era of undivided metamorphic rock of phyllite, exquisite gneiss and migmatite.

This wetland is naturally formed in spite of some human intervention.

Hydrology: The most important rivers are the Polochic and the Oscuro. Other smaller, permanent and seasonal rivers and streams in the wetland form an intricate hydrological network. In addition, there is a rich variety of ponds, bays, swamps and oxbow lakes (also known as relic meanders). Among these are the Los Lagartos, Boca Ancha and El Padre and the El Bujajal and El Amatillo ponds.

Soils: Almost all of the soils belong to the Polochic series (Simmons, et al., 1959) which corresponds to poorly drained alluvial soils occupying flat reliefs and having been formed in place by superficial deposits of the Río Polochic.

Basin: Many of the streams empty into the Río Polochic (for example the Pancalá, Tinajas, and Zarco rivers that arise in the Sierra de las Minas). Other rivers, such as the La Colonia, Secoc and Seocoquito, begin in the Sierra de Santa Cruz and empty into the Cahabón. All together, these rivers drain an area of approximately 5,070 square kilometres. The drainage basin on the southern shore forms the Sierra de las Minas biosphere reserve and has been managed since 1990 by the Fundación Defensores de la Naturaleza.

Drainage basin: Among the streams that begin on the plateau are the Boca Ancha in the northeast that empties into a bay with the same name. In the southeast, the Suncal flows into the Chinebal then the Oscuro river to later empty into the lake just after being joined by the Río Zarquito tributary. Mono Creek runs through the southeast of the delta and empties into the lake at Punta de Chile. Padre Creek is formed by a bifurcation of the Polochic in its lower stretch. The Río Amatillo drains from the smaller El Amatillo lake.

Climate: In general, the predominate climate is hot and humid, with an annual average temperature of about 27°C and a relative humidity between 75 and 100 per cent. Annual

precipitation is between 1,700 and 2,500 mm. Over ten years, the average was 2,000 mm.

Annual sunshine is 2,346 hours of sun/year and the potential evapotranspiration is approximately 1,600 mm/year.

Using Thornthwaite's climate classification, the area is a hot, humid region without a well-defined dry season and with a north-south humidity gradient that goes from greatest to least. Using Holdridge's model, the area is within the life zone of very humid subtropical (hot) forest, bmh-S (c).

15. Hydrological values:

Although no study has been made, this area plays an important role as a regulator of sedimentation in the lower part of the basin by trapping sediments from the Sierra de las Minas and the Sierra de Santa Cruz. It also plays the role of regulator of the level of water in Lago de Izabal mitigating flooding of the surrounding areas and helping to maintain water quality.

This wetland is the last remnant of natural vegetation in the lower part of the valley of the Polochic and serves as a biological corridor for large mammals (tapir, *mono saraguat* and wild cats) that share ecosystems in the Sierra de las Minas and Bocas del Polochic. The area also contributes to the maintenance of food chains functioning as a breeding site for several species (fish and manatee) during critical stages of their life cycle.

16. Ecological features:

The main nature communities are:

a) Aquatic vegetation that grows in stagnant shallow water. The predominant species are: *Hymenocallis litoralis*, *Montrichardia arborescens*, *Nymphaea ampla* and *Pontederia* sp. It is in this habitat that the manatee (*Trichechus manatus*) and numerous species of fish and aquatic birds live.

b) Reeds and *tule* (*Typha dominguensis*) communities. This is a herbaceous association of normal size that grows only in shallow water where it can attach roots.

c) Willow communities (*Salix* sp.). This is one of the pioneering terrestrial communities capable of growing at sites with insufficient drainage. These areas remain flooded during part of the year and are used for growing maize and rice.

d) Forested communities. These are found on land prone to flooding where *barillo* (*Symphonia globulifera*), *sangre* (*Pterocarpus officinalis*), *zapote bobo* (*Pachira aquatica*) and *Santa María* (*Calophyllum brasiliense* var *Rekoi*) grow. Some communities prone to flooding are quite different such as those dominated by *S. globulifera* and *C. brasiliense* that have a high degree of vertical stratification and where the dominant trees are more than 30 metres tall. In communities subject to flooding, there are several species of epiphytes (mainly orchids), some ferns and many bromeliads.

17. **Noteworthy flora:**

18. **Noteworthy fauna:**

The Bocas del Polochic and its area of influence are in one of the most important and varied biomes (tropical rain forest) in Guatemala. A total of 213 species of birds, 50 species of mammals and 53 species of fish have been recorded. It is estimated that at least 138 species of reptiles and amphibians exist. This diversity, together with that of the Sierra de las Minas, represents approximately 80 per cent of the fauna in Guatemala.

The reserve is an important area for the conservation of many animals whose populations are threatened or have disappeared in the rest of Guatemala. Twenty of these species are listed in Appendices I, II and III of the CITES Convention. Waterfowl (Accipitridae, Anatidae, Charadriidae, Ciconiiforme, Falconidae, Pelecanidae, Phalacrocoracidae, Podicipedidae and Sternidae) is the most important group and at least 75 species of Neartic migratory birds visit this wetland. This area is one of the last habitats of species such as *mono saraguate*, anteater, tapir, *coche de monte*, deer, wild cats and nutria. In the surrounding area, are found the greatest numbers of manatees in Guatemala (Quintana, 1993).

19. **Social and cultural values:**

Most of the fishermen involved in commercial fishing live in the town of El Estor. Fishing is the main subsistence activity for the local inhabitants and the main fishing areas are Bocas del Río Polochic, Enseada Verde, Las Dantas, Pataxte, Punta Comercio (Punta de Chile), Quinel and Lago de Izabal.

This wetland is near the department of Alta Verapaz where the *Q'eqchi* indigenous people have a culture of traditional values of respecting nature and using local medicinal plants.

20. **Land tenure/ownership of:**

At the site, most of the land in the wetland is government property which is administered by the Fundación Defensores de la Naturaleza. A small percentage is private property. In the surrounding area, the marshlands in the delta of the Río Polochic are surrounded by private farms where most of the land is used for the mechanized growing of rice and cattle ranching on large pastures.

21. **Current land use:**

There are no human settlements within the reserve.

The most important use of wildlife in the wetland is fishing, both for subsistence and trade. Hunting has become one of the most traditional activities and is an alternate source of protein for the local inhabitants who also capture some animals for their skins (crocodiles, nutria, wild cats and some snakes) and other <wild animals for trade (parrots, parakeets, toucans, *tecolot* and *mono saraguate*).

The inhabitants of El Estor and the surrounding farms cut firewood in the woodlands in the

wetland, usually without any restrictions. Epiphytes are gathered for trade as ornamentals. Two other species also traded on a small scale are wicker and *pony* (*Beucarnea* spp.)

The delta and its backwaters are in the community of Nueva Esperanza, El Lancetillo and the farms established there. The local populations at the foot of the mountain ranges of Santa Cruz and de las Minas own Cahaboncito, Chinebal, Chichipate, El Estor, La Colonia, Naranjal, Pataxte, Panzós, Santa María, Semuy I and II, Setal and Soledad.

The main economic activity in the communities is agriculture. Production is concentrated on the growing of food for trade and subsistence (maize, rice and beans) and the ranching of cattle for meat.

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

The exploitation of wild fauna and flora without any control is the most important pressure on the wetland's natural resources.

The animals most frequently hunted are deer, *tepezcuintles*, wild cats, monkeys, armadillos, iguanas, turtles, *crácidos* and ducks. The tapir and the wild boar were intensively hunted until they almost disappeared. The manatee has been hunted from the beginning of the century and the present population is at a critical point. It is also known that fisheries have decreased in both number and size of specimens captured.

The most common species of plant gathered are the *icaco* (*Chrysobalanus icaco*), *guamo* or *cuje* (*Inga fissionalix*), *caulote* (*Guazuma ulmifolia*) and *frijolillo* (*Samanea* spp.). There has been no evaluation of the impact of the introduction of the tilapia (*Sarotherodon* spp.) for food and commercial exploitation in Lago de Izabal.

The surrounding area is critical because many local inhabitants and their activities unavoidably affect the reserve. If the use of fertilizers and insecticides increases, all residues will be drained to the lowest parts of the wetlands. The advance of the agricultural frontier of private farms (the growing of rice and the raising of cattle) is also a potential threat to the conservation of this wetland.

All of the shore of Lake Izabal is suffering from the process of renting of concessions by the Oficina de Control de Reservas de la Nación (OCREN). This massive colonization adversely affects the ecological integrity of the reserve, and there is no regulation of the exploitation of the biota.

23. Conservation measures taken:

Article 90 of the Ley de Areas Protegidas (Decree 4-89) includes the Bocas del Polochic as a special protected area. The proposal to declare this area officially as the Refugio de Vida Silvestre Bocas del Polochic was approved by the Consejo Nacional de Areas Protegidas (CONAP). The reserve is to be administered by the Fundación Defensores de la Naturaleza.

The Reserva de la Biósfera Sierra de las Minas just south of the wetland has been declared a

protected area. Since 1990, the Fundación Defensores de la Naturaleza has administered the reserve with the support of CONAP, local authorities and other governmental agencies.

It is proposed in future management plans to increase the limits proposed in the technical study in order to protect the manatee by including a greater marine area in the reserve.

24. Conservation measures proposed but not yet implemented:

The recommendations of the technical study recently approved by the CONAP call for the following steps in the management programme:

Protection programme: to maintain areas strictly reserved for nature, natural resources and basic ecological processes. It also recommends the establishment of support mechanisms for in situ conservation of biodiversity.

Specific objectives: 1) to safeguard the ecological integrity of the reserve's ecosystems; 2) to protect fauna and flora of significant regional and national importance; 3) to guaranty the stability of the hydrological balance and the equilibrium of nature; 4) to protect the integrity of the wetlands.

Resource management programme: to ensure the sustainability of fisheries as a long-term sustainable resource, to protect the tree cover in order to guarantee the maintenance of the hydrological pattern, the prevention of erosion, the maintenance of the habitat and the promotion of options for the development of ecotourism and recreation.

Specific objectives: 1) to study the productive potential of fisheries in the area of sustained use; 2) to identify new options for the management of resources that create goods, services and productive options; 3) to identify and promote tourist resources; 4) to maintain the reserve's natural resources in order to protect and ensure the sustainable use of the variety and number of useable animal species.

Research programme: to promote, maintain and support research projects aimed at creating knowledge about the composition and dynamics of nature in the reserve, the maintenance of representative samples of the natural ecosystems with a capacity for studies and the knowledge and techniques that will make it possible to raise socioeconomic conditions based on sustained development.

Specific objectives: 1) to obtain a maximum of knowledge possible on the reserve's ecosystems; 2) to obtain knowledge needed to plan sound education, extension programmes, the use of resources, protection of ecosystems, the management of basins and springs and regional biological promotion; 3) to use scientific knowledge to design methods and techniques of sustained use; 4) to increase the general knowledge of nature in Guatemala.

Extension programme: seeks to bring together administration of the reserve and local inhabitants and the regional officials, community leaders and other interest groups. Specifically it is proposed to promote community participation in the management of the reserve; provide training for the local population in the management and sustained use of natural resources; to win support of the local population in the protection of the reserve; and

to promote the development of environmental education activities and forestry education.

Programme of public use: This is an attempt to use the natural landscape and the biota in general to develop tourist attractions and regional development. Specifically, it seeks to raise local living standards by distributing the benefits from tourism; to define visitor reception centres; to raise training levels of the local population in this area and the management and use of tourism; and to extend the benefits of the national environmental education programme to tourist activities.

25. Current scientific research and facilities:

26. Current conservation education:

27. Current recreation and tourism:

28. Jurisdiction:

29. Management authority:

Fundación Defensores de la Naturaleza

30. Bibliographical references: