

Information Sheet on Ramsar Wetlands

1. **Date this sheet was completed/updated:** February 1996
2. **Country:** VENEZUELA
3. **Name of wetland:** Laguna de Tacarigua (Parque Nacional Laguna de Tacarigua)
4. **Geographical coordinates:**

10°12'30"N - 10°19'41"N
65°41'23"W - 65°56'55"W

5. **Altitude:** an average 6 metres above sea level
6. **Area:** 39,100 hectares (national park)
9,200 hectares (wetlands)

7. **Overview:** The Laguna de Tacarigua is a coastal lagoon approximately 30 kilometres long and 6 kilometres wide separated from the Caribbean sea by a coastal barrier that has created the lagoon by retaining the water. The lagoon is joined to the sea by an outlet (*boca* or *grau*) near the town of Tacarigua de la Laguna. A transitional environment, the lagoon is a large nursery for fish with a wide variety of physical features, such as mangroves throughout the lagoon forming large islands of dense vegetation and open spaces of channels where sea birds (pelicans, red marsh birds (*corocoras*), flamingos, ducks, herons and gulls) come to rest, feed and nest.

8. **Wetland type:**

A, F, (I), (J), (H), N

9. **Ramsar criteria:**
10. **Map of site included? Please tick yes -or- no**
11. **Name and address of the compiler of this form:**

Instituto Nacional de Parques (INPARQUES)
Dirección General Sectorial de Parques Nacionales

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

The Laguna de Tacarigua is a very good example of a natural or almost natural wetland characteristic of the coastal bio-geographical region. It is the home of a large number of

species and subspecies of rare plants and animals, threatened or vulnerable with a large number of specimens in each species. The lagoon is an especially important habitat for the plant and animals during a crucial stage of their biological cycle. There are often up to 20,000 waterfowl here. There are regularly an important number of specimens of waterfowl; a reflection of the productivity and diversity of the lagoon.

13. General location:

Situated on the eastern central coast of Venezuela in the region of Barlovento in the municipality of Páez in the state of Miranda, 150 kilometres from Caracas between the towns of Machurucuto (4 km), El Guapo (12 km), Río Chico (3 km) and next to the town of Tacarigua de la Laguna.

14. Physical features:

The Laguna de Tacarigua is a sapropel lagoon--a complex coastal system receiving water and sediment from both the sea and the continent. It has the following characteristics:

Geology and geomorphology: The area is part of the coastal plain of Barlovento characterized by alluvial terraces and recent clay-sand sedimentation through the lower basin of the Cúpira, Guapo and Tuy rivers. It was created by the most recent retreat of the sea, the post-Wisconsinian during the Holocene.

Inflow: Fresh water flows in from the natural Obispo, Pirital, San Ignacio and San Nicolas channels and the Río Guapo through the Madrecasa channel (an artificial canal).

Outflow: Water exits naturally to the sea through a mouth that closes during the dry season owing to a high degree of coastal sedimentation caused by the coastal currents.

Soils: The soil is a recently formed entisol saturated with water.

Depth: The Tacarigua lagoon is shallow with an average depth of 1 metre and the deepest point in the Hondo canal of 4.20 metres. Depth varies between the dry and the wet season by some 60 cm.

Climate: This area is a hot-humid climate influenced by sea breezes. In the Köppen classification, it is an Awi' climate (tropical humid) on a tropical isotherm of savanna and woodlands, a hydrophile subhumid climate with a maximum period of annual precipitation of seven to eight months.

Temperature: between 24° and 28°C

Precipitation: between 1000 and 1500 mm a year

Wind: northeast trade winds

Thermic limit: humid tropical

Highest limit: subhumid

Humidity province: subhumid

Basin: This area is located in the lower Río Tuy basin.

Hydrology:

Average annual evaporation: 2003 mm

Evaporation/transpiration ratio: 2:1

Average potential evaporation: 1619 mm

Hydrological deficit: 629 mm (February to September); six dry months (January to June)

15. **Hydrological values:**

The Laguna de Tacarigua is considered to be a highly important regional lake system acting as a reserve for a rich variety of species of major importance for the functioning of the trophic chains in this region and has played an fundamental role in the economic development of the local populations.

It has also served as a filter for the sediment carried by the Río Guapo which it has diverted to the lagoon through the Madre Casañas canal leading to the creation of a delta.

16. **Ecological features:**

Using Holdridge's classification of climatic zones, this area is a tropical dry forest within the subhumid wet province. The predominant vegetation is mangrove and other species typical of sandy coastal environments.

On the alluvial plain next to the lagoon, are found woodlands, savannas and secondary vegetation in which predominate *yagrumo* (*Cecropia peltata*), *jabillo* (*Hura crepitans*), *apamate* (*Tabebuia rosca*), *bejucos* and other plants (Malvacea, Legumes and Gramineae) that form the thick underbrush.

The secondary vegetation most frequently found in the Madre Casañas sector is large areas of grasses (Gramineae and Cyperacea), some coconut palms (*Coco nucifera*), acacia (*Acacia micrantha*), *semerucos* (*Thiriphasia trifolia*), *jobo* (*Spondia mombin*), *tapara* (*Crescentia cujete*), *parapara* (*Spondia saponia*) and others.

The area around the lagoon is completely dominated by mangrove vegetation that grows in the lagoon on depositions forming large islands that give a unique physiognomy to the lagoon.

17. **Noteworthy flora:**

Mangrove forests develop in shallow areas of the lagoon and in transitional areas where the tides reach well inland. They contribute to the capturing of sediments and nutrients and prevent coastal erosion. In the lagoon, they are concentrated along the edge and form an island in the lagoon. The following species are found: *mangle rojo* (*Rhizophora mangle*), on the outside edges; *mangle negro* (*Avicenia nitida*), concentrated on the most consolidated and least drained areas; *mangle de botoncillo* (*Conocarpus erectus*), restricted to the sandy areas; and *mangle blanco* (*Laguncularia racemosa*) sharing both habitats in some sectors.

18. **Noteworthy fauna:**

Birds: One of the reasons that the Tacarigua lagoon has been chosen as a wetland of international importance is the diversity and abundance of resident and transient birdlife. The following information provides data on some species of birds found there.

Pelicans: nesting; 3,500-4,000 nests per season; a total of roughly 6,000 specimens of mature females and juveniles

Red marsh bird: No nesting; between 8,000 and 9,000 specimens

Flamingos: No nesting; between 600 and 900 specimens

Garza real: nesting; roughly 3,000 to 4,000 specimens

Cotuas: No nesting; between 14,000 and 18,000 specimens recorded per season

Garza azul, pechiblanca, chusmita and paleta: roughly 5,000 specimens

Storks, ducks, *garzines* and wood ibis: 3,000 to 4,000 specimens

Gulls: about 400 specimens per flock and an average of 6 to 7 flocks per day

Reptiles: The most important reptiles are the sea turtles of which four species are found in the Restringa.

<i>tortuga verde</i>	<i>Chelonya midas</i>
<i>tortuga parape</i>	<i>Erectmochelys imbricata</i>
<i>tortuga caguamo</i> or <i>cabezona</i>	<i>Caretta caretta</i>
<i>tortuga cardón</i>	<i>Dermochelys coriacea</i>

Fish: There are 33 families with 43 genera and 52 species of which 5 are saltwater fish, 27 are estuarine or marine and 18 freshwater. Twenty-nine species are permanent residents, 16 are temporary and 9 are occasional visitors. The following are the most important species for human consumption:

Sea bass	<i>Centropomus ensiferus, C. undecimalis</i>
<i>Lisa</i>	<i>Mugil curema</i>
<i>Lebranche</i>	<i>Mugil liza</i>
Catfish	<i>Arius herabergii, Arius spixii</i>
<i>Mojarra</i>	<i>Eugerres plumieri, Diapterus rhombeus, Gerres cinereus, Eucinostomus argenteus and E. pseudocula</i>

19. Social and cultural values:

All of the social and cultural in the Laguna de Tacarigua are related to fishing.

20. Land tenure/ownership of:

The land in this area belongs to the government and is managed by the Instituto Nacional de Parques (INPARQUES).

21. Current land use:

The lagoon's environment is affected primarily by fishing. Traditionally, fishing has been the most important economic activity for the local population which uses nets, harpoons, fish hooks and boats propelled by sculling or outboard motors.

Subsistence farming (*conuco*) is the principal activity of the local inhabitants living in Tacarigua de la Laguna and Belén (both outside of the park) and in Las Lapas (inside of the park).

The other economic activity carried out in the area is tourism which is especially intense on weekends and during vacations. Tourism is concentrated on the barrier beach.

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

Sediments transported to the lagoon are rich in fertilizers used for farming around the lagoon. There is a fish cannery which discharges waste water into the lagoon.

After 1959, many of the canals that led to the lagoon were decreased by the construction of the national coastal road.

In 1963, the Ministry of Public Works constructed an artificial channel called the Madre Casaña in order to move the Río Guapo and have it empty in the lagoon. This has led to the formation of a delta, stabilized at the present time, increasing the vegetative succession on the coast. The mangrove has been replaced by the Gramineae *Thypha dominguensis*. The situation is now stable.

23. Conservation measures taken:

This wetland is situated within the Parque Nacional Laguna de Tacarigua created in March 1974. An operational plan and regulations were adopted in 1991.

24. Conservation measures proposed but not yet implemented:

There are programmes in the operational plan and regulations including a fire management and water quality programme, a survey of sea turtles and marine birds and a patrol programme which have not yet been fully implemented.

25. Current scientific research and facilities:

At the present time, there is a small research station for monitoring water quality in the lagoon including studies on temperature, pH, salinity, depth, turbidity and dissolved pollutants. In addition, studies are being carried out with other organisations on ecology, sedimentology and economic activities.

26. Current conservation education:

Conferences are given at the park headquarters on the importance of the park and its operations. Conferences are also held on the importance of the period of egg-laying for both local inhabitants and tourists. Work shops have also been held to familiarize children with the importance of conserving natural resources. The park headquarters and the Dirección General Sectorial are establishing an information centre for carrying out environmental education programmes.

27. Current recreation and tourism:

There are presently no specific programmes in this field, although proposals have been included in the operational plan and management regulations.

28. Jurisdiction:

Instituto Nacional de Parques (INPARQUES)
Ministerio del Ambiente y de los Recursos Naturales Renovables

29. Management authority:

Instituto Nacional de Párques
Superintendencia del Parque Nacional Laguna de Tacarigua
Dirección General Sectorial de Parques Nacionales

30. Bibliographical references: