The Centla Swamps

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Photos by Elsie Montiel

Observation tower. Water House, Centla Swamps Interpretation Center.

The Centla Swamps are located on the delta of the Grijalva and Usumacinta Rivers in eastern Tabasco, near the Campeche border. The way these two rivers join together, creating an enormous number of lagoons, swamps and other large expanses of flooded land, turns this area into a truly noteworthy ecosystem that is part of the National System of Protected Areas and is classified as a biosphere reserve. The reserve is contained in the municipalities of Centla, Jonuta and Macuspana, covering 302,706 hectares divided into two nucleus zones and a buffer zone. Nucleus I covers 57,738 hectares and Nucleus II,

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Metal reproduction of a mangrove tree. Water House.

75,857 hectares; the buffer zone makes up the more than 150,000 hectares left. Its great biodiversity makes for good catches of both shrimp and fish and excellent hunting. It is also an important nesting area for both resident and migratory water fowl.

The first colonizers of the Tabasco lowlands built small villages there around A.D. 1500. At least 19 archaeological sites in the swamp areas, among them Aguacatl, Atasta and Santa Rita, prove their existence. It is thought that this valley was one of the most densely populated parts of the lowlands before the conquest; one of its legacies is a certain kind of fine orange ceramic ware. The ancient inhabitants settled on the banks of rivers and lagoons or in the middle of mangroves. To avoid flooding, they elevated the land, making piles of clay mixed with oyster shells, which becomes very compact when dry.

Today, settlements are also located on the edges of the rivers. The largest town is Quintín Arauz, with 2,000 inhabitants, who speak Yokot'an (or Chontal) and still preserve their religious traditions and fiestas. The entire area is home to about 15,000 souls, the majority of whom are either Chontal or mestizo, and who live in very precarious conditions with very little income.

Almost 60 percent of the population works in agriculture, fishing, cattle ranching and day labor, all occupations typical of the countryside. The remainder work in manufacturing and services. Residents of the region have developed vast knowledge about local vegetation. Until today, 198 useful plant species have been identified, 50 percent of which are edible; the rest are used in building, as fuel, in crafts and medications and even as ornaments. Local fauna is similarly numerous and varied.

From 1951 on, Mexico's state-owned oil company, Pemex, has been exploring and exploiting fossil fuels in the area, concentrating in eastern Centla, Jonuta and northern Macuspana. This has become a threat to the environment because the use of the soil has changed in the reserve's area of influence. Currently, it is used for exploration for oil and pumping oil wells, extensive cattle ranching and cultivation of basic crops like corn and squash. Other activities include the production of charcoal with mangrove-tree wood, fresh-water and high-altitude fishing and fish packing plants. Some forestry activities are also carried out, including logging of mangrove trees, plus illicit hunting of different species of turtle.

Nevertheless, its biodiversity still makes this biosphere reserve very important internationally. Fifty-two new species have been discovered in the reserve and recorded. Among them, mushrooms are one of the most important species, particularly the macromycetes and the myxomycetes, of which there are 55 species. The flora boasts more than 737 species, of which 637 are wild and represent almost 25 percent of all the flora found in the state of Tabasco.

From the ethno-biological standpoint, there are 198 species used for traditional purposes, plants normally utilized for eating, ornaments and medications by those living in the reserve, who use their stalks, fruit, leaves and flowers. Most of these plants can be found in both family gardens and in the wild.

Gastropods (a kind of mollusk) are the animals most studied in recent years. Nineteen species —which may be new altogether— have been discovered on the reserve. Five of them have been found for the first time in the state of Tabasco. A wide variety of vegetation has made a welcome habitat for a large number of vertebrates. The swamp is home to 30 species of fish, 30 kinds of amphibians, 68 different types of reptiles, 104 sorts of mammals and 255 kinds of birds. Aquatic and semi-aquatic animals predominate.

Except for three species, all the freshwater fish are neo-tropical. The most common fish is the bream, of which there are six different genera. Among the most common birds are the herons, the peregrine falcon, the fishing eagle, the *caracolero* snail kite and the toucan; among the

The Centla Swamps are part of the National System of Protected Areas and an internationally important reserve because of their biodiversity.

The meeting of the Grijalva, San Pedrito and Usumacinta Rivers.

The Centla Swamps are about 70 kilometers from Villahermosa, the capital of Tabasco, and can be reached by the Villahermosa-Frontera federal highway, which goes to Barra de San Pedro. Another road connects to the Arroyo Polo community and leads to the paved Jonuta-Frontera highway, which can be used to reach the Centla Swamps Biosphere Reserve support station, which welcomes temporary visitors and biologists doing research. The general public can go to a visitors' center known as the "Water House," which provides information about the reserve.

reptiles, the swamp crocodile or black lizard and the white turtle; among the mammals, the jaguar, the ocelot, the howling monkey, the tapir, the *manatí*, the *tepezcuintle*, the deer, the porcupine and the racoon.

Among the biologically interesting, threatened species of plants and animals, included in Mexico's official norms, are many kinds of orchids, palms, legumes and red, *botoncillo* and white mangrove trees from the *Rubiacea* and *Euforbiacea* families, among others.

The species of endangered animals include the *carao*, the yellow-headed vulture, the *caracolero* snail kite, the merlin, the peregrine falcon, the howling monkey or *saraguato*, the spider monkey, the *manatí*, the swamp crocodile, the white turtle, the jaguar and the ocelot,

the river otter, the tapir, the green iguana, the royal duck and the reserve's largest rodent, the *tepezcuintle*.

As already mentioned, the Centla Swamps are a protected natural area with a great number of neo-tropical birds registered worldwide in the marshes, internationally important for biodiversity of birds. Among the most important are the *jabirú*, the queen of the storks, a species declared endangered nationwide. According to the most recent studies, only 20 specimens of this species exist in Mexico, in the Centla Swamps and the Lagoon of Terms, which has the majority. Among the rare birds are the *almizclero* duck, the *tular* tiger heron, the *eurípiga* and the cinnamon hawk.

The Centla Swamps are facing grave threats, among them: 1) the non-integration of local inhabitants into conservation activities proposed by reserve authorities; 2) several contradictions in the federal government's implementation of the environment management program; 3) vegetation is periodically burned during the dry season, thus depleting resources, because inhabitants have no alternatives for production; 4) federal agencies are not appropriately organized to foster reserve maintenance policies; 5) industrial, agricultural and urban pollution is on the rise because there are human settlements in areas near the nuclei zones; 6) oil extraction; 7) the system is drying out because dams have been built in the highland basin of the neighboring state of Chiapas; 8) roads are being built, agriculture is disorderly and resources are being overexploited for illegal sale. VM

THE CENTLA SWAMPS RELEVANCE FOR THE ENVIRONMENT

The Centla Swamp's functioning and water's role in it produce environmental goods and services that directly or indirectly satisfy many human needs. This includes:

a) Renewing bodies of water. The swamps retain a large quantity of water that, when filtered to underground tables, can be used for human consumption.
b) Decontamination. The swamps neutralize the negative effects of contaminants generated by people and carried by the Grijalva and Usumacinta Rivers.
c) Flood control. The swamps act as a sponge that lowers the force of the rivers' flow.
d) Stabilization of the coast line and erosion control. The alluvium deposited on the plain of the Centla Swamps creates sediment accumulation, creating dry land where the ocean had once been, and stabilizes the coast line. Without it, the sea's erosion of the land mass and the increase in salinity would continue.
e) Export of biomass to the Gulf of Mexico. The nutrients produced in the swamps are exported to places like the Gulf of Mexico, benefiting an important number of fishing grounds.
f) Protection against storms/windbreaks. The mangroves on the banks of the rivers close to the coast help dissipate storms and reduce damage.
g) Refuge for wildlife. The abundance of food and the diversity of the wealth of vegetation make the swamps ideal for the reproduction, feeding and development of innumerable species.

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