



Protected Areas for manatees (*Trichechus inunguis*) in the Colombian Amazon

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Introduction

The Amazonian manatee (*Trichechus inunguis*) is still hunted through most of its range, although the species is protected by law in all Amazon countries. Loss of habitat and incidental captures by fishermen – particularly of calves – also endanger manatees. With a difference of about 10 meters in the water level between the high and low water seasons, manatees in most areas have annual migration patterns when expose them to different threats at different times of year. Detailed seasonal migrations were established for the Puerto Nariño area of the Colombian Amazon by observation and feeding electric, with more than 1600 manatee sightings between 2002 and 2008. At the same time, the conversion of manatee hunters into guardians of the species and an extensive community education program were implemented.

Migrations and Priority Areas

Areas with strong manatee presence (more than 10% of sightings for that season) were defined as Priority Areas and are shown by a manatee, while areas with $1-5$ calf sightings are represented by a calf. The migration pattern from the inner lakes to the River Amazon is well-defined, with only occasional sightings in other areas.

Percentage of sightings by habitat and season 2002-2008

Area	High water	Falling water	Low water	Rising water
Inner lakes	22.7	21.9	3.0	21.9
River Amazon	0.2	5.7	4.5	37.6
Other areas	0.2	0.7	82.4	29.6

High water season – inner lakes & Tarapoto headwaters

Manatees are dispersed over a very wide area during the flood season. They move into the flooded forest and distant lakes, where there is abundant aquatic vegetation available. The main threat to the manatees is the capture of calves by (local) traps and fishing nets at the beginning and end of the high water season. Light nets sometimes trap calves. In 2007-2008 two fishermen freed calves from their nets. A very few manatees stay in the deeper lakes through the year, making them more vulnerable to capture in the dry season.



Falling and rising waters – Tarapoto/Comoro Lakes

Manatees gather in these areas before moving on to the River Amazon. Up to 14 manatees have been observed in one area, making boats have been recovered, as well as new-born calves during rising waters. The manatees are highly visible as they move along narrow channels and avoid the fast stage of migration out to the sea (during ebb) or into the flooded forest (during work). Calves carried out by a fisherman-researcher during rising water, recorded 20 manatees in November 2003. Threats include fishing activity and boat motors along Tarapoto lake for dolphin watching. In addition, manatees have to pass the town of Puerto Nariño along a narrow tributary with considerable boat traffic.



Low water – River Amazon

Spots isolated and manatees are found in the backwaters that form near beaches and islands. There is little food available along the river banks in summer – small patches of grasses and decomposing logs – and the animals appear to choose places where the current is minimal so they can conserve energy. As the islands and beaches change each year, the backwaters available to manatees change too. Between 1 and 11 manatees have been registered in a single backwater, with the total rising to a maximum of 14. They are highly exposed to local Indians and to fishing activities, using both large and small nets. Calves are particularly vulnerable, every year one to two calves are captured in fishing nets. Occasionally manatees are injured by Peruvians on the Peruvian side of the River Amazon, no measures have been taken by the authorities.



Protected areas and the conservation of manatees

The area around Puerto Nariño is not a protected area, but the lakes are included in the territory of an Indian Reserve. The agreement with local fishermen to protect manatees is a social agreement, sustained by working tasks and constant education work in schools and communities. Elsewhere in the Amazon, the nature of these "Protected Areas" depends on negotiations with local authorities and communities.

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