

## Tracking released West Indian manatees in Brazil

By João Carlos G. Borges, 31st January 2022

Globally, manatees face a variety of threats from human activities and natural events. In Brazil, West Indian manatees were exploited for many years by commercial and subsistence hunters. Currently, the major threats to the survival of manatees in the country include incidental or accidental catch, watercraft collisions, chemical contamination and other pollution, as well as habitat loss and degradation. As a result of this, manatee populations are patchily distributed along the Brazilian coast from Amapá to Alagoas and there is evidence of released animals using the coasts of Sergipe and Bahia states.

The Manatee Reintroduction Programme was created in 1994 with the purpose of re-establishing the original geographical distribution of manatees in Brazil. These efforts to rehabilitate and release stranded manatees have facilitated the reconnection of isolated populations and the restocking areas where the species occurred historically. Mapping habitat use patterns, the most used resources, home ranges, and the routes and corridors used between these areas is important for manatee conservation. This information can help identify priority areas for habitat protection and assist in mitigation of anthropogenic impacts. Thus, the aim of our study was to identify the home ranges of released manatees in Brazil and evaluate their adaptation to life in the wild.



Interaction with native and released manatees. Photo: Aquatic Mammals Foundation

We tracked the movements of six rescued, rehabilitated and released manatees in the north-eastern Brazilian states of Paraíba, Sergipe and Bahia. A tracking device, which included a tether and a radio transmitter, was attached to each animal's tail. The transmitting assemblage consisted of a GPS device to record geographical coordinates, a satellite transmitter programmed to send signals every 3 hours through the Globalstar network, and a conventional VHF transmitter operating continuously to transmit locations in real-time.

To evaluate the adaptation of released manatees to the wild we considered a number of criteria for success, including factors such as their capacity to find food sources and feed in the short term, their ability to remain in adequate habitat and their use of freshwater sources, as well as their body measurements and overall health status.



Left: Manatee with tagging equipment (peduncle belt, a flexible tether and a floating transmitter. Photo: Luciano Candisani/Aquatic Mammals Foundation Collection. Right: VHF telemetry receivers used in manatee tracking. Photo: Aquatic Mammals Foundation

The manatees monitored in this study used estuarine areas more intensely than the open sea. The home range size of individuals was 2.56–42.07 km<sup>2</sup> and all fidelity sites—areas used most frequently—were within protected areas. The fidelity sites we identified were in sheltered areas with low incidence of waves and currents (estuaries, bays and areas protected by reefs), which demonstrates the importance of such areas to manatees. In Paraíba, all fidelity sites were located in the estuary of the Mamanguape River, and three individuals were not recorded in any other estuaries. These findings confirm this estuary is vital habitat for manatees in Brazil. Manatees with small home ranges and few fidelity sites may be vulnerable to the degradation of these

environments. It is therefore important to release manatees in protected areas.

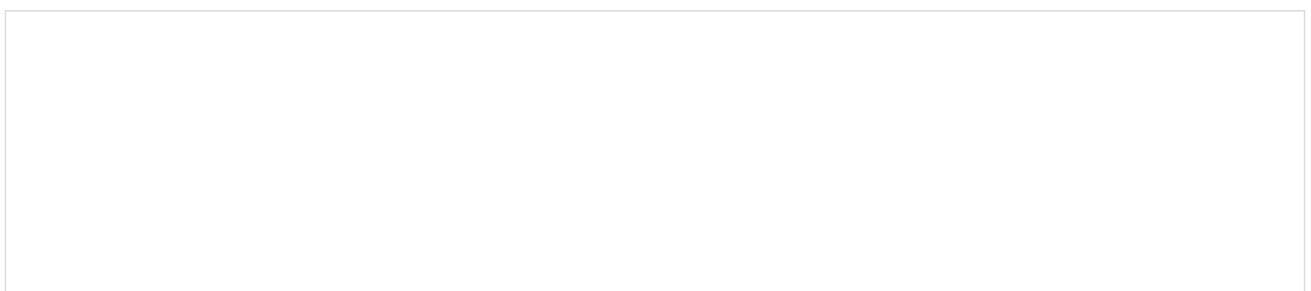
The use of upstream areas of rivers varied by individual. The longest distance travelled from the coastline upriver was 14.24 km and the longest distance offshore was 0.93 km. There were no significant differences in home range between the dry and rainy seasons, but there was significant difference between the sexes, with males travelling across larger areas than females. All but one of the six individuals met the majority of indicators established in the Brazilian Manatee Reintroduction Protocol, and thus were considered to have successfully adapted to the wild.

Our study provides information on patterns of habitat use and areas used intensively by manatees. We hope it will help protected area managers in defining priority areas for manatee conservation in Brazil.



Animals were captured by an experienced team, for clinical management and deployment of the satellite tags.  
Photo: Aquatic Mammals Foundation

The article [Home ranges of released West Indian manatees \*Trichechus manatus\* in Brazil](#) is available in *Oryx—The International Journal of Conservation*.





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