

Project Update: July 2019

Citizen science has a great capacity to contribute to ongoing marine research and conservation. With data collected through ongoing monitoring of big fish around Bocas del Toro we have begun creating outreach materials in Spanish and English to inform communities about the project and key results collected so far, as well as provide information for how they can contribute to the project by sending in sighting information. Recreational divers that are visiting the reefs around Bocas on an almost daily basis can provide significant insights into the diversity, abundance, and distribution of key species. This year we have strengthened our ties with local dive shops in Bocas, who have begun sending sightings data on the elasmobranch species they encounter.

These sighting data will supplement the standardised annual monitoring that we conduct around the archipelago and ultimately give us a better idea of the demographics of shark and ray populations around the island in relation to human activities.

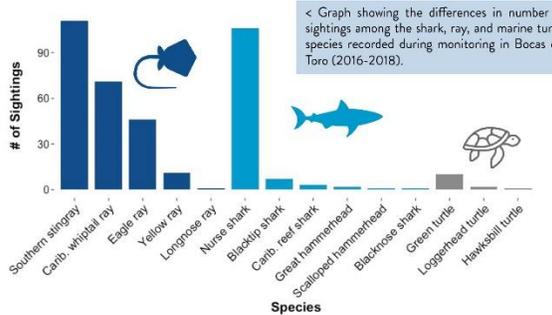


Project Brief
Marine Megafauna Monitoring
Bocas del Toro, Panamá

2019-PA-BDIT

MarAlliance has been conducting monitoring of the marine megafauna around the Bocas del Toro archipelago to assess the diversity, relative abundance and distribution, and identify important habitats of sharks, rays, marine turtles, and large finfish that inhabit the waters around the islands.

Our field teams of local artisanal fishers Panamanian university students are trained by MarAlliance staff in data collection, species identification, and monitoring methods.



< Graph showing the differences in number of sightings among the shark, ray, and marine turtle species recorded during monitoring in Bocas del Toro (2016-2018).

14 fishers and students trained in monitoring methods

135 hours of underwater video footage

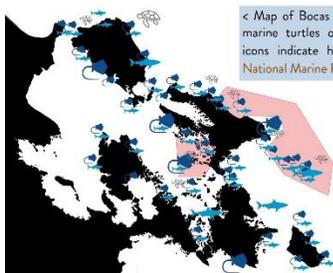
312 km of underwater visual censuses swum

11 species of sharks and rays documented

The most common species of ray recorded in Bocas was the **southern stingray** (*Hypanus americanus*), while the **nurse shark** (*Ginglymostoma cirratum*) was the most common shark species. We have recorded 2 **endangered** species of sharks: the **great hammerhead** (*Sphryna mokarran*) and the **scalloped hammerhead** (*Sphryna lewini*).




To be able to assess population size and demographics of sharks and rays, we use traditional tags to identify individuals. Tagged animals will have a unique ID number on their first dorsal fin (sharks) or pelvic fin (rays). If you see a tagged animal, you can help our monitoring efforts by sending us information on your sighting to info@maralliance.org : **photo (if possible), ID number on the tag, color of tag, location (coordinates are best).**



< Map of Bocas del Toro and the distribution of sharks, rays, and marine turtles observed during monitoring (2016-2018). Larger icons indicate higher relative abundance. The Isla Bastimentos National Marine Park (PNMIB) is in red.

Snorkeling transects and Baited Remote Underwater Videos provide information on species and their relative abundance around the islands, while the use of scientific longline allows us to better understand the demographics, growth, and movements of the sharks and rays in Bocas.



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