MARALLIANCE
ALLIED FOR MARINE WILDLIFE

Project Brief
Nurse Shark Population
Shark and Ray Alley
San Pedro, Belize

MarAlliance has been studying the nurse shark (*Ginglymostoma cirratum)* population at the Hol Chan Marine Reserve Zone D since 2014. The aggregation site, also known as Shark and Ray Alley, is a popular site for tourists. Tour operators use bait to attract the sharks to their boats to give guests close encounters with the sharks – a practice known as provisioning.

Belize

Ambergris Caye

Zone D: "Shark and Ray Alley"
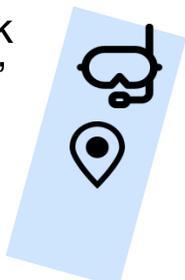
Map of San Pedro with nurse shark aggregational site Zone D
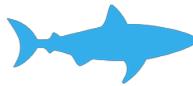
**126** Individual nurse sharks identified

94 In-water surveys
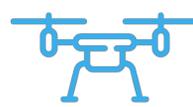
2 Aerial surveys

To study how provisioning affects the nurse sharks at Shark and Ray Alley, we use a combination of in-water and aerial surveys. We track how the number of sharks changes over the year, and for how long individual sharks use the aggregation site.

Icons from flaticon.com: Freepik, Eucalyp

A lightweight frame mounted with a GoPro camera and pair of fixed lasers is used to gather video footage of nurse sharks. Visual estimates of the number of individuals are made during the survey from the boat and using a drone. Sex is determined when possible and the size of sharks is estimated using the lasers on the frame. Distinguishing marks are used for preliminary identification of individuals.

Unique fin pattern

Individual#: NS018

Blunt head

Individual#: NS092
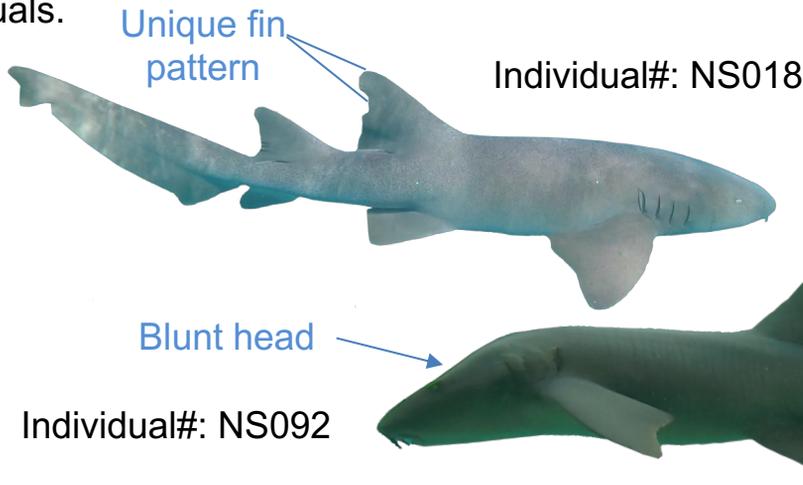
Two of the 126 individual sharks at the Hol Chan Marine Reserve Zone D

Drawn pattern of a dorsal fin using the Darwin software

Fin pictures are extracted from the GoPro footage for further investigation of individuals. A software program called Darwin, which was initially developed for identification of dolphin dorsal fins, can be used to find patterns among shapes of the sharks' large dorsal fins. Once identified by its fin shape, we use the data to determine how many times the individuals are re-sighted and how long they remain at the provisioning site.

For more information visit www.maralliance.org