# ANGELSHARK IN THE CANARY ISLANDS

The angel shark family was identified as the second most threatened of all the world's sharks and rays after a global review of extinction risk by the IUCN Shark Specialist Group. Angel sharks were once widespread throughout the Atlantic and Europe's seas, but are now extinct from much of their former range. The Canary Islands is the last remaining stronghold for one of the three Critically Endangered Angelsharks, *Squatina squatina*, but here too they are under threat and urgent action is required to protect them. For this reason, we are tagging Angelsharks to increase our understanding of the biology and ecology of this shark to inform conservation.

La Palma

La Gomera

Tenerife

tag colour

# The Canary Islands

The Canary Island archipelago comprises eight islands that have emerged after successive volcanic events from the ocean basin. Our tagging project covers the entire archipelago, however, we are focusing on the central and eastern islands (Tenerife, Gran Canaria, Fuerteventura, Lanzarote and La Graciosa), where Angelsharks seem to be more abundant (Meyers *et al.* 2017).

La Graciosa

Lanzarote

Fuerteventura

Feeding in Angelsharks

Angelsharks are ambush predators that wait in the sand

to catch unsuspecting prey that swim within reach.

## El Hierro

### **Tagging of adult Angelsharks**

Gran Canaria

Angelsharks are tagged underwater using a noninvasive visual T-bar Anchor tag that are visible to SCUBA divers. Each island has a specific colour scheme (Tenerife, Gran Canaria, Fuerteventura, Lanzarote and La Graciosa). Sharks in each island are tagged with a different tag colour. This allows us to identify if the sharks are moving from one island to another. The diving community is encouraged to report encounters of tagged Angelsharks to our online database movement of the starks are moving from one island.

> While diving, Angelsharks that are resting on the seafloor are restrained by two divers, using a modified net. This net is carefully placed on top of the shark and holds the shark onto the seabed in case it moves during the

The entire procedure takes 1–2 minutes, causing minimum stress to the sharks.

bespoke restraining device

A third diver measures, sexes and tags the shark and finally takes a genetic sample. The shark is then safely released and observed while it swims away.

colour coded ID-tag

\*\*\* Meyers E.K.M., Tuya F., Barker J., Jimenez Alvarado D., Castro-Hernández J.J., Haroun R., Rödder D. 2017. Population structure, distribution and habitat use of the critically endangered angelshark. Squatina squatina, in the Canary Islands. Aquatic Conservation: Marine and Freshwater Ecosystems. http://doi.org/10.1002/aqc.2769

#### Adult Angelsharks

female Angelshark with no claspers

Adult sharks have been found surrounding the entire Canary Island archipelago, but are not present in the same areas throughout the year. We want to know where they go, how they move and if they return to the same places regularly. Our data has revealed that three of the tagged sharks in Lanzarote, La Graciosa and Gran Canaria have returned to the same areas after being gone for 1 year. This suggests that Angelsharks may return to the same places every year.

#### **Reproductive behaviour**

Little is known about the reproductive behavior of Angelsharks. These sharks are reported to be mature at 80–132 cm [male] and 128–169 cm [female], reaching a maximum size of 183 cm [male] and 233 cm [female]. Data gathered throughout our study has shown that there may be a breeding [spring/summer] and a mating season [winter]. Data collected in this tagging project will provide a better understanding on the seasonality and also investigate the mating system and breeding behavior.

#### male Angelshark with claspers

female gravid (pregnant) Angelshark

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