



Project Brief

Deep-Sea Fisheries MesoAmerican Region

2019-BZ-HN-DS2

Deep-sea fisheries of the MesoAmerican Region (MAR) countries of Mexico, Belize, Guatemala, and Honduras are expanding due to declines in coastal fisheries.

Deep-sea fishes tend to be more vulnerable to overfishing than coastal fishes because they grow slower, live longer, and reproduce less often. We work with deep-sea fishers in the region to investigate differences in the fishery by country and region, and how resilient the fish captured in the fishery are to exploitation.



Queen snapper (*Etelis oculatus*) are one of the most preferred species across regions



Interviewing a deep-sea fisher on Roatan, Honduras about his perceptions and practices

We pair local ecological knowledge (LEK) with scientific sampling to learn about the history and contemporary status of the fishery in the MAR. LEK is gained through interviews with fishers, while scientific vertical longlines are used to capture fish for biological analyses. We aim to identify practical, scientifically-sound conservation measures that will ensure the sustainability of this important fishery into the future.



350 Fish sampled for biological studies

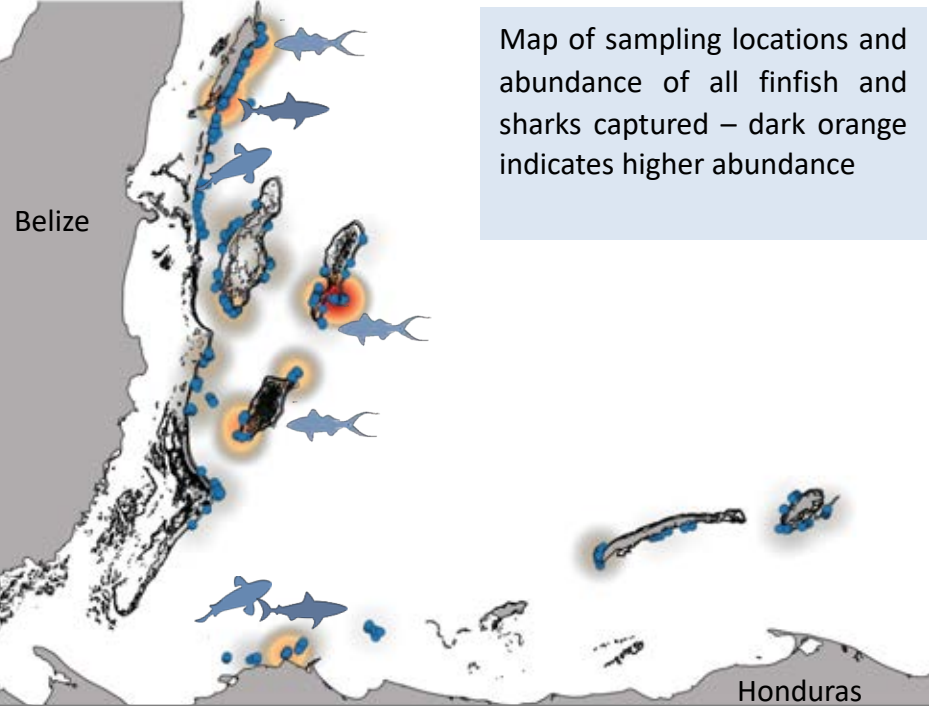


130 Fishers interviewed

Icons from flaticon.com: Freepik, Eucalyp

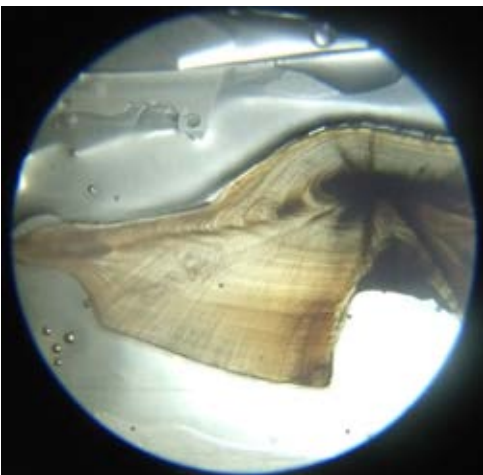
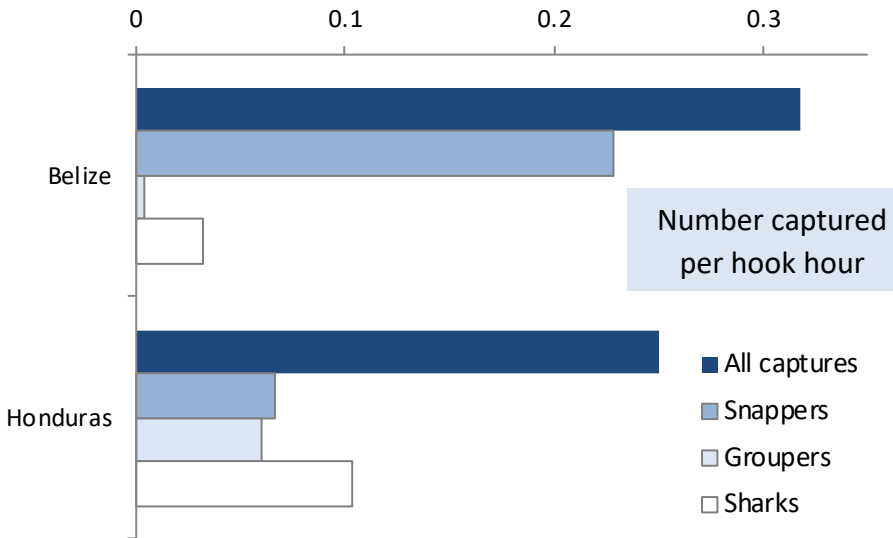


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Deep-sea fishing was established in Mexico, Guatemala, and Honduras at least 80 years ago, while the fishery in Belize began within the last 20 years. The barrier reef and offshore atolls of Belize are still quite productive, while the Bay Islands of Honduras are likely overfished. Fishers in Guatemala are the only in the region to use gillnets and actively target sharks.

Overall abundance of all captured finfish was higher in Belize than in Honduras, especially for snapper species. One small region in western Honduras had a large aggregation of juvenile sharks that accounts for the higher abundance overall.



Thin section of a snapper otolith showing 40+ annual growth bands

Preliminary analysis of biological data indicates that some species may be even older than previously thought. Long-lived fish are especially vulnerable to overfishing because they tend to grow more slowly and reach sexual maturity at a later age than shorter-lived species. Combined with data on reproduction, this data can be used to identify critical areas/times for protection of the species.



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