GBIH Field Report #1

Guanaja, Bay Islands, Honduras

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About the Hawksbill Project

The Hawksbill Project is a non-profit focused on helping community-based projects and local governments improve their capacity to conduct in-water sea turtle research to inform conservation strategies.

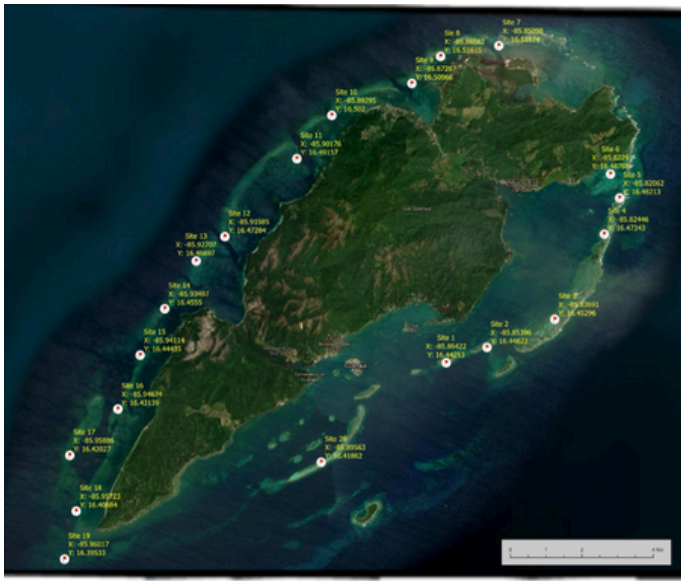
Guanaja, Bay Islands, Honduras

The island of Guanaja is located 40 miles north off the coast of mainland Honduras and is part of the Bay Islands. The Bay Islands consist of Utila (the westernmost island), Roatan (most known for its marine park) and Guanaja (nicknamed the “Green Island”) The island of Guanaja is 19 square miles with fringing reefs encircling the island and numerous seagrass habitats. The island has a population of 5,500 people, with the majority living on Bonacca Cay, a small island located off the south side. The residents of Guanaja refer to Bonacca as, “El Cayo”.

Island of Guanaja

The Study

Over the course of a two week period (10 full days in the water) in May 2025, The Hawksbill Project (THP) partnered with ProTECTOR, Inc. and Green Island Challenge to survey 120, one kilometre, in-water transects. The transects included over 20 sites, and were conducted by three divers at a time using the snorkel tow method. Each site consisted of three, one kilometre transects, taking about one hour to survey. Each site was sampled twice, once in the first week, and once in the second week. When a hawksbill sea turtle was sited, divers would release themselves from the snorkel tow and attempt to capture the turtle. If the observed turtle was a green sea turtle, the boat would stop to allow the divers to relay information, such as species, size, and depth to the data recorder on the boat. Seven sites were located on the south side of the island and over the course of the two week study, 41, one kilometre snorkel tow surveys were completed.



Sites sampled around Guanaja

The Habitat

The habitat is simply incredible. The Hawksbill Project has never seen more seagrass beds and reef habitats (with varying degrees of health) in the entire time of its operation (not in St. John in the US Virgin Islands or Carriacou, Grenada). It felt as if there was more habitat in Guanaja than the other two locations combined. It is simply incredible.

The Turtles

Three. The Hawksbill Project recorded three green sea turtles in the entire 41 (one km) transects. Additionally, there is the real possibility one of the green turtles was seen twice, as they were spotted in the same location. This means it is possible only two green turtles were documented on the Southside.

Factor in the green turtle count with zero hawksbills and this is concerning.

It was astonishing. Snorkelers spent a total of ~42 hours (3 divers, 7 sites, 21 total hours per week, two weeks total time) surveying the Southside and after documenting three green turtles during that time, the catch per unit effort (CPUE) per turtle was greater than .07 turtles per hour. A CPUE of .07 translates to roughly 14 hours surveyed per sighting, which is more effort per turtle than any other areas in the Caribbean the THP has surveyed. The Hawksbill Project believes there are more than three turtles on the south side of Guanaja, but for the first year of this study, three, is the number visually recorded. Given the incredible amount of habitat surrounding the island of Guanaja, this is alarming. Hawksbill sea turtles have been recorded over numerous types of habitats in the St. John, US Virgin Islands and Carriacou, Grenada (seagrass, sand, hard bottom, and coral reef). Zero hawksbill observations on the south side of Guanaja over of the various habitat types present, again, is concerning. Given the amount of coral reef/reef habitat and structure, there must be some sort of population on the south side but for the first year, no hawksbills were observed over the 41 km surveyed.

In addition to the lack of sea turtles observations, there was a lack of other key species such as lobster, conch, southern stingrays, and reef sharks. Lobsters weren't recorded at any sites on the south side. Evidence of harvested conch were documented in numerous transects. Juvenile conch were present (greater than 15 alive individuals) at one site on the south side (which will remain nameless). Southern stingrays were also documented in low quantities (<5) for all surveys on the south side. This is not only surprising, as they are very common in the Caribbean, but troubling. Lastly, a single reef shark was recorded in the entirety of the south side surveys. Reef sharks are thought to be a sign of a healthy reef ecosystem, therefore their low detection rate across south side sites is concerning

North & Westside

The remaining 13 study sites were located across the north and west sides of Guanaja. For the purpose of this report they were grouped together because of their proximity to one another and their remoteness compared to the more populated south side of the island. Continuing the habitat trends from the south side, there was an abundance of (overgrown) seagrass beds and reef habitat. The reef habitat is more substantial on the Northside as there are various patch reefs, shallow fringing reefs, and larger barrier reefs varying in depth from 5ft to 80ft+. The sheer amount of reef habitat on the Northside is almost overwhelming when searching for a species that as an RMU (regional management unit) is listed as critically endangered. Looking for hawksbills on the Northside in particular felt like looking for a "**needle in a massive haystack.**"

Turtles on the Westside

It came as no surprise to us that the majority of hawksbill turtles were found on the west side. In studies conducted by THP prior to Guanaja (Carriacou, Grenada, and St. John, US Virgin Islands) the results were clear: the further away from people, the more hawksbill turtles you will find. This was also the case for Guanaja. The first day on the west side a very small juvenile hawksbill was documented (25cm CCL; curved carapace length). The turtle swam perpendicular to our snorkel tow and after ducking under a coral head at 16ft was easily captured. The day finished with a second hawksbill capture. Both hawksbills were less than 40 cm CCL.

A third hawksbill was documented two days later, again, on the west side, in a very similar position to the second hawksbill. Four more hawksbills were captured and documented on the west side, again, all in close proximity to one another, with two being captured on the last day. The total number of hawksbills captured was 7, but the total number of hawksbill interactions was over 11. The CPUE for observing turtles on the Northside was 1.5 hours/sighting which is considerably lower than the Southside CPUE. It took the snorkelers nearly half the amount of survey time to observe a hawksbill turtle on the Northside than it did on the Southside.

A single green turtle was captured and documented during the course of this two week study and only because it appeared to not have a healthy fear of being harvested. Every single green turtle interaction, prior to this lone turtle, swam away from our snorkelers with a rapid pace. Green turtle #001 was observed eating seagrass and did not mind our presence. This lead to a capture event and documentation.

One Female Nesting Loggerhead

One large, presumed nesting loggerhead was first seen on Day 3 of the research trip, and captured and documented off the NWS on Day 9. This loggerhead is presumed to be part of the nesting population in Guanaja.

Nesting female caught off the northwest side of Guanaja

Key Species

Lobster, conch, southern stingrays, and reef sharks throughout the study were rare. Lobster were not seen in any significant number across all 20 sites. As mentioned in the Southside assessment, conch were only observed in a single site across the 20. There was consistent and constant evidence of conch harvest in many of the sites.

Southern stingrays, a common species across the Caribbean, were observed in very low numbers (<10). A single reef shark was observed on the Southside. For species THP commonly observed in past locations around the Caribbean (i.e. US Virgin Islands and Carriacou, Grenada) their abundance in Guanaja was unexpectedly low.

On the list of species THP did not expect to see in any numbers whatsoever were several species of groupers, snappers, and parrotfish. Most notably was the presence of large midnight parrot fish and rainbow parrotfish. Midnight parrot fish weren't common but were seen in several locations on both sides of the island, while rainbow parrotfish, a near threatened species, was documented in a few locations but were very large in size (near 1m). Large groupers, including black, Goliath, and Nassau, were documented in several locations which is a positive indicator of a healthy reef ecosystem.

Conclusion

The overall conclusion, based on the number of transects and conversations with local fishermen (who harvest turtles), is the population of turtles around Guanaja is small, containing relatively new turtles that recently completed their oceanic stage. These turtles are "new recruits", who are arriving to find an abundance of space due to the consistent harvest. The new recruits are likely to be harvested themselves, especially as they get larger, and become more detectable. A small turtle, both green or hawksbill, are simply less likely be observed compared to 50+ cm CCL sub adult turtle. The turtles get bigger. They stand out more. They get harvested.

The cycle then repeats leading to the grand conclusion: **there just aren't a lot of turtles.**

The Hawksbill Project has never seen more more overgrown seagrass beds and more reef structure in the Caribbean. This habitat, if protected, would see hundreds of green sea turtles and a significant population of critically endangered Caribbean hawksbill turtles. It is actually unfathomable the amount of reef habitat witnessed without seeing a single hawksbill turtles greater than 50+ cm CCL. All documented or visually recorded hawksbills were less than 40 cm CCL, making them juvenile turtles. The ultimate benefit of this study is the unearthing of "hot spots" for sea turtles around Guanaja and the super conclusion that juveniles arrive, find large swaths of empty habitat, grow, get spotted, get caught, and end up being harvested.

In conclusion, The Hawksbill Project and ProTECTOR inc. expected to see more turtles than documented and believe they are being consumed in such significant numbers as to explain the absence of large juveniles and the absence of a single sub adult or adult turtle.

This work wouldn't be possible without our partners and funders.

THP is very proud to have partnered with ProTECTOR, Inc. and Green Island Challenge to undertake this project

CAMERON & JANE BAIRD FOUNDATION

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