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Land-Based Monitoring to Study Interactions Between Dolphins & Recreational Fisheries in Galveston Bay

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Background

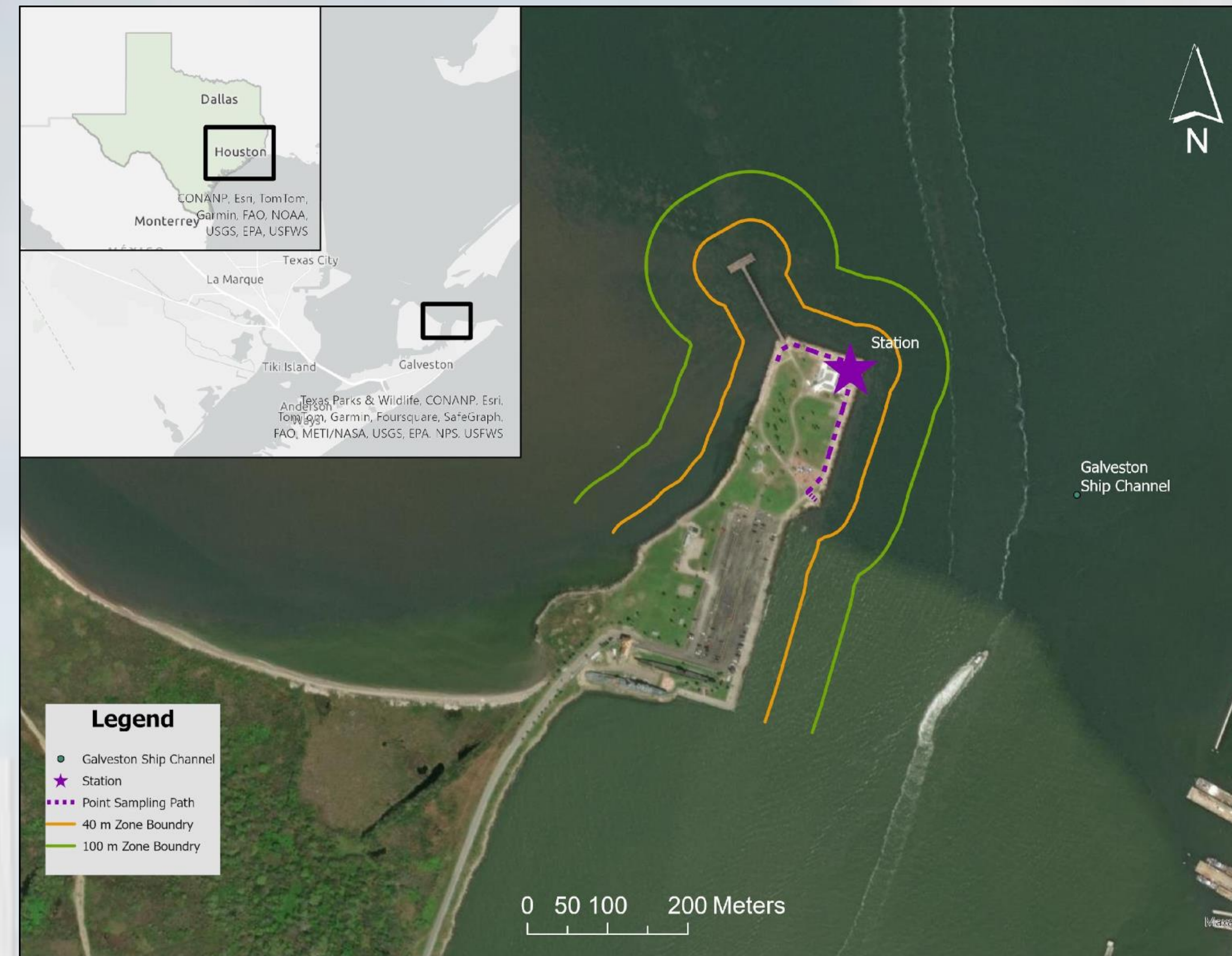
Since 2014, the Galveston Bay Dolphin Research Program (GDRP) has documented evidence of fishing line entanglement in bottlenose dolphins (*Tursiops truncatus*) in Galveston Bay, TX during boat-based routine monitoring. Seawolf Park, in Galveston, is a popular recreational destination for anglers, where dolphins are regularly observed. Galveston Bay Foundation's (GBF) Marine Debris Team identified the park as a location with high concentrations of fishing debris. To learn more about fisher-dolphin interactions & how to mitigate them, GDRP established a Dolphin Research & Outreach Station in June 2023.

Comments from Anglers

"When there are more dolphins, we catch less fish."

"Fish stopped biting when the dolphins got closer."

"[Saw] a large group [of dolphins] before sunrise of about 30."



GDRP Dolphin Research & Outreach Station, located at Seawolf Park, Galveston, TX.

Methods

- Trained citizen scientists are stationed at the NE corner of Seawolf Park to collect data for ~3 hours per survey.
- The focal observation area is within 100m of the park.
- During sightings, the time, location, number of dolphins, activities, & interactions with anglers or vessels are recorded.
- Photos of dolphins are taken to document evidence of scarring consistent with previous entanglement.
- Point sampling occurs 3 times per survey to count number of dolphins, fishing poles/nets, & shrimp trawlers walking a standardized path.
- Dolphins are used as a flagship species to educate park visitors of the harmful effects of marine debris on wildlife.

Dolphin Research & Outreach Station Objectives

- Study dolphin occurrence & habitat use
- Learn about threats that affect dolphins
- Identify & quantify interactions between dolphins & humans

Educating the public about dolphin friendly fishing tips & proper disposal of debris is critical in mitigating potentially harmful interactions.



Fishing Debris

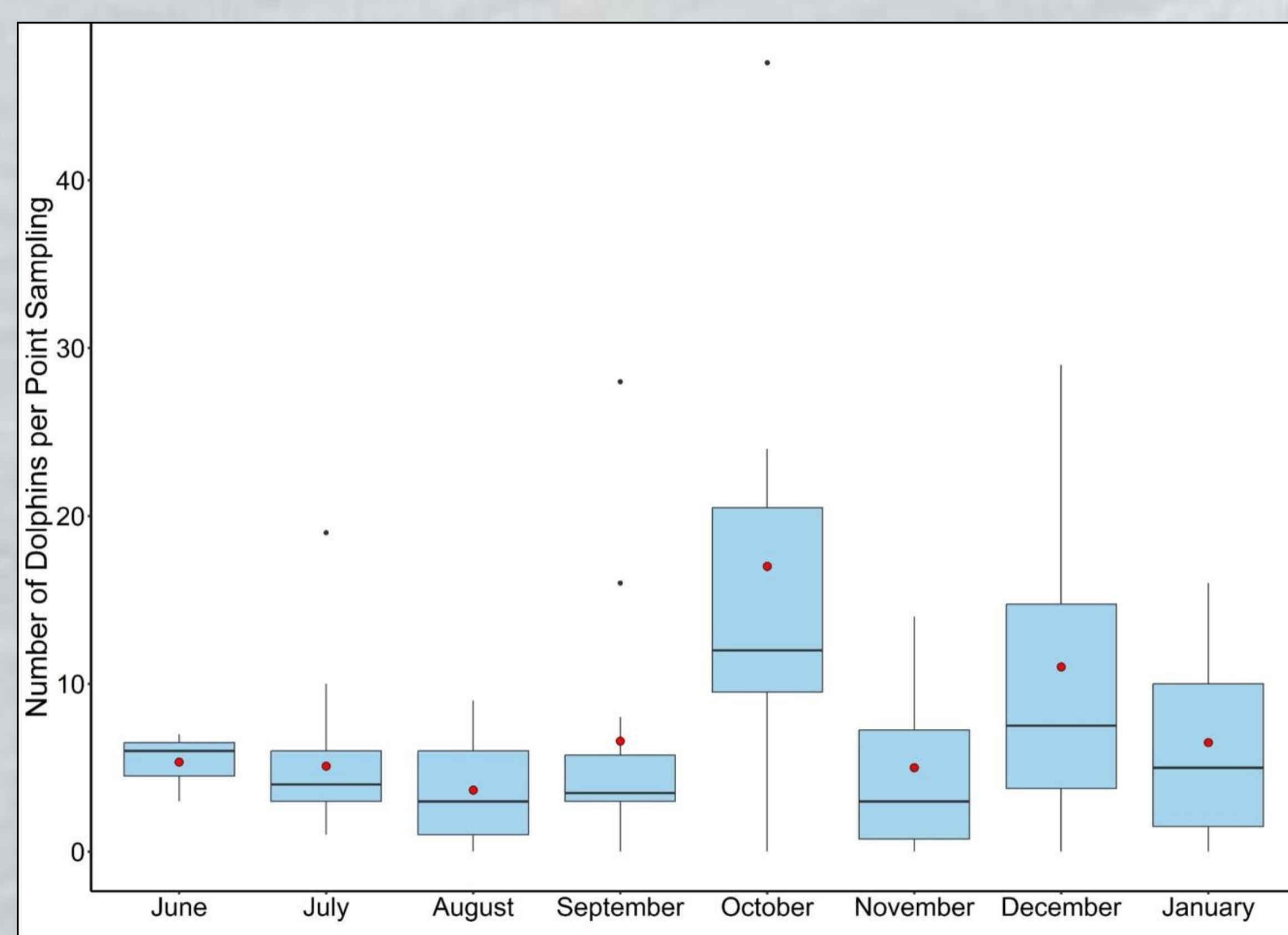
- Fishing debris can be harmful to wildlife from risk of entanglements & ingestion.
- Seawolf Park accounts for the highest amount of fishing debris of all sites monitored by GBF's Marine Debris Team & is monitored monthly.
- Monofilament Recovery & Recycling Program tubes are placed throughout the park & are collected/weighed regularly by the Turtle Island Restoration Network.

Threats to Dolphins

- Dolphins are adaptive, opportunistic feeders & can learn risky foraging behaviors in relation to recreational fishers & commercial shrimp trawlers.
- Dolphins are known to patrol & steal catch (depredate) from anglers.
 - Depredation has been confirmed 3 times.
 - Dolphins observed patrolling in 26% of all sightings within 100m, of which:
 - 81% Recreational anglers
 - 17% Commercial trawlers
 - 2% Both anglers & trawlers

Community Engagement

- Visitors are encouraged to be mindful of potentially negative fisher-dolphin interactions, to dispose of trash properly, & use the Monofilament Recovery & Recycling Program tubes.
- To date, a total of 297 visitors have been educated during 24 surveys (average= 12 visitors/survey).
- Fishers were engaged in at least half of the surveys.



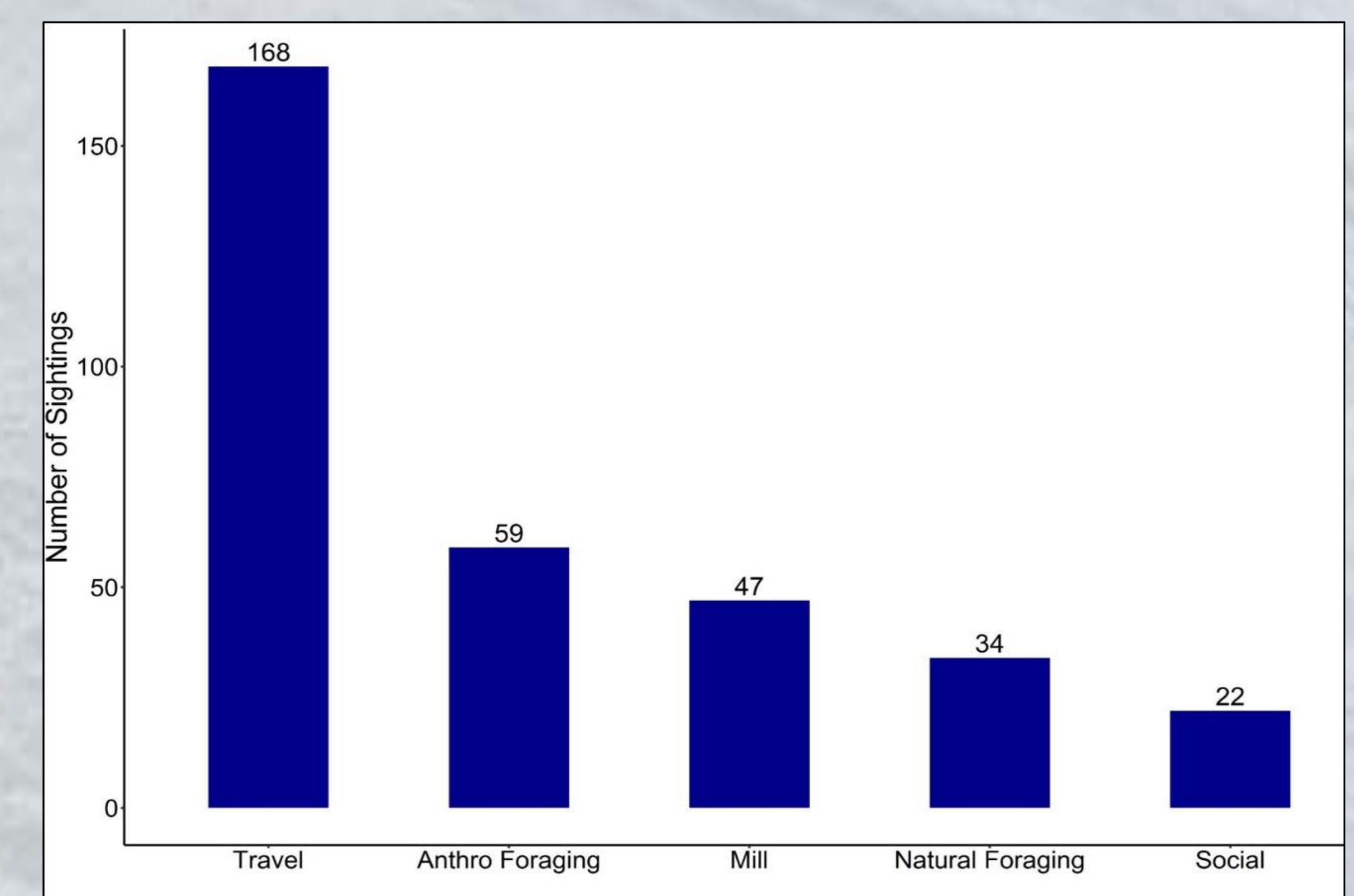
Number of dolphins observed per point sampling by month. The red dot indicates average number of dolphins per point sampling for that month. Results are from 25 preliminary surveys from June 2023-January 2024.

Future Work

- Evaluate & quantify photos for evidence of entanglement
- Standardize a questionnaire for community outreach for a human dimensions study
- Evaluate the amount of monofilament recycled & fishing debris found on the shoreline since inception of The Station
- Investigate seasonal & diurnal patterns

Acknowledgements

We would like to thank our dedicated volunteers for their time & effort, the Mary Moody Northern Endowment & GOMA for funding The Station, & the Galveston Park Board & the Texas Marine Mammal Stranding Network for their support of this project.



Top 5 dolphin activities recorded during sightings. Anthropogenic foraging includes patrolling & depredating while natural foraging includes behaviors such as swirling or fish tossing. Results are from 26 preliminary surveys from June 2023-February 2024.

Contact Sherah McDaniel at McDanielS@uhcl.edu for any questions.

Scan for
Dolphin Safe
Fishing Tips!

