Marina Observation of Sea Turtles (MOST): Establishing a Database of North Florida Green Sea Turtles

Avery Cogley, Leslie Palmer, Erin Buell, Trisha McCaul, Lilli Longo, and Ed McGinley
Natural Sciences Department, Flagler College, St. Augustine FL

INTRODUCTION

Photo identification (PID) uses the natural markings of an animal to identify individuals. Hotspotter is a computer-based program that can be used to expedite PID. It has previously been used in past studies to match Hawksbill turtles and is a reliable tool for turtle PID (Dunbar et al 2021). The objective of this study is to determine Hotspotter's ability to identify individual green sea turtles (*Chelonia mydas)* so that we can ascertain the frequency at which turtles are "captured" and "recaptured". This will show how relevant Conch House marina and Camachee Cove Yacht Harbor are in our local population.

METHODS

- Weekly turtle monitoring
- Photographed dorsal
- scale pattern from the left (L),
- right (R), and top (T) of the head
- Lack of a clear photo after 5 minutes: "missed"

- Boats photographed between each turtle sighting
- Images captured using **Canon EOS 4000D** & **Canon EOS Rebel T7**
- PID program, **HotSpotter** matches dorsal scale patterns at variable underwater conditions and angles

RESULTS

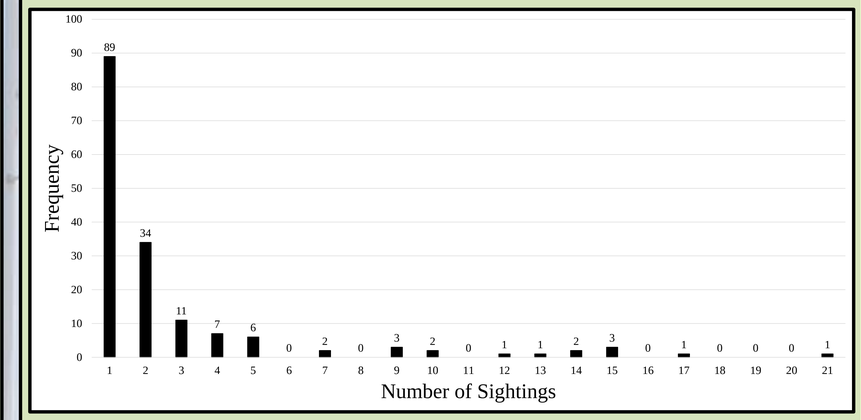


Fig. 1: Frequency of recaptured turtles

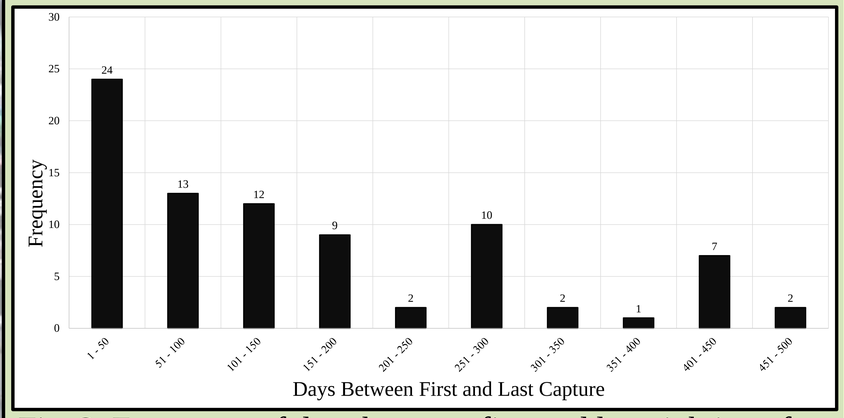
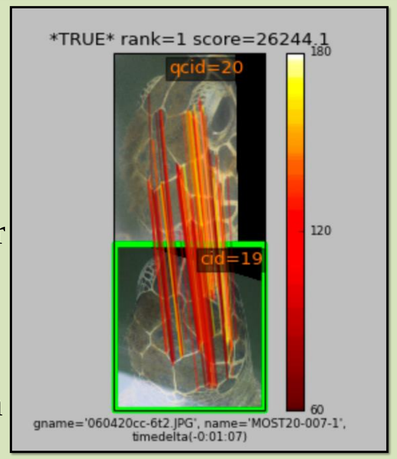


Fig. 2: Frequency of days between first and last sighting of individual turtles

CONCLUSION

- Hotspotter allowed ID of green sea turtles based on dorsal scale patterns and unique markings
- One turtle was tracked over 500 days
- 10 turtles have been tracked for a minimum of a year



CHELONIA MYDAS

FUTURE IMPLICATIONS

- Green sea turtles can encounter buoyancy disorders, fibropapillomatosis (FP), cold stuns, and boat strike injuries

- 6 rescue missions performed between both marinas during surveys

- Ask us about Turnip Greens' story and the projects goals to hopefully help prevent these injuries in the future

SOURCES

Dunbar, S. G., Anger, E. C., Parham, J. R., Kingen, C., Wright, M. K., Hayes, C. T., . . . Baumbach, D. S. (2021). Hotspotter: Using a computer-driven photo-id application to identify sea turtles. *Journal of Experimental Marine Biology and Ecology*, *535*, 151490. doi:10.1016/j.jembe.2020.151490