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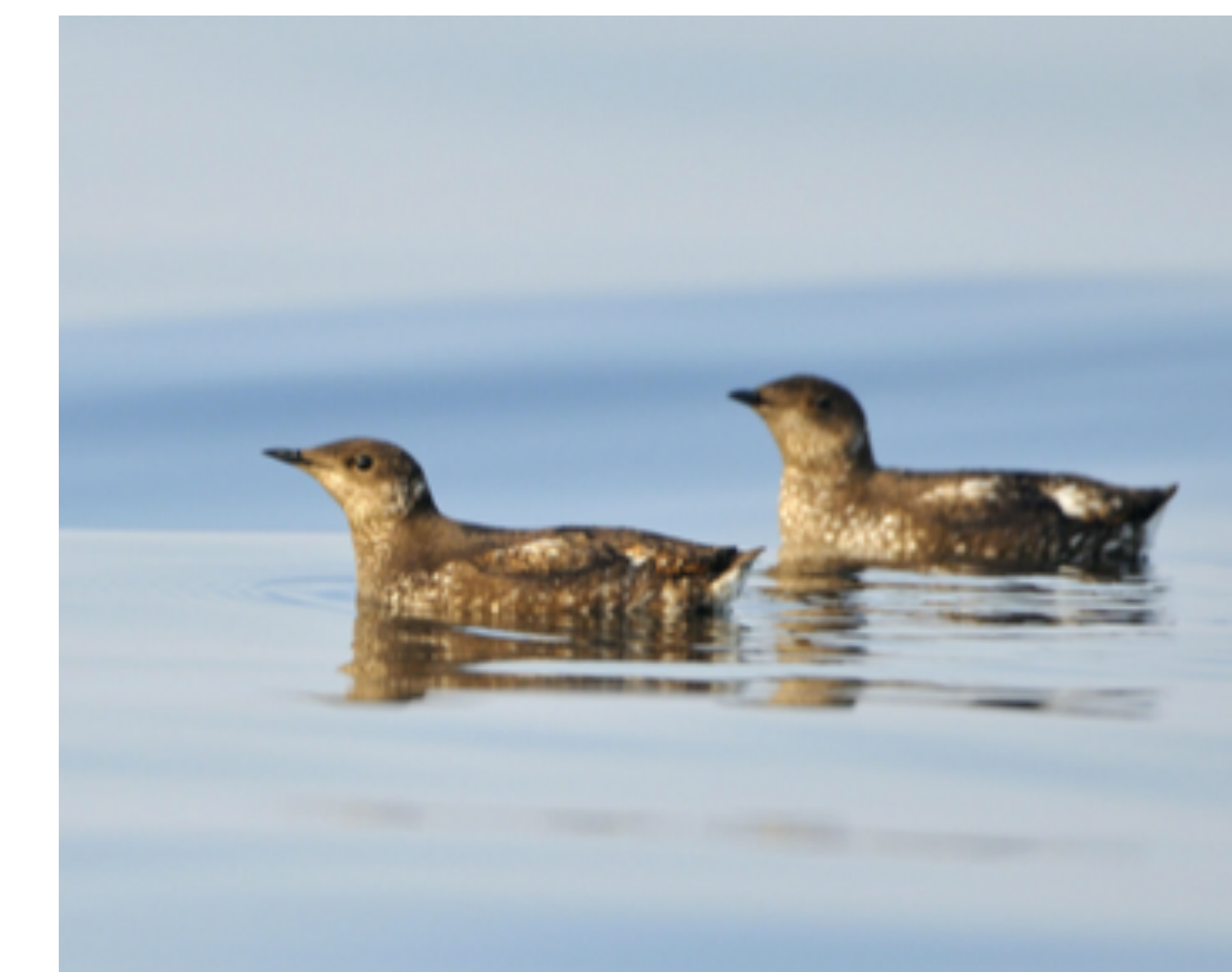
Characterizing Marine Foraging Habitat for the Endangered Marbled Murrelet in the South Puget Sound

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Characterizing Marine Foraging Habitat for the Endangered Marbled Murrelet in the South Puget Sound

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INTRODUCTION

- Marbled murrelets (MAMUs; *Brachyramphus marmoratus*), a small seabird from the Alcidae family, are currently listed as an endangered species in Washington, Oregon and California. In these states, their population plummeted by 30% between 2000 and 2010 and is still declining.
- Because MAMUs rely on both marine habitat for foraging and terrestrial old growth forests for breeding, they are highly vulnerable to human disturbances.
- MAMU marine habitat use is still largely undescribed in the South Puget Sound area.

OBJECTIVES

- To understand better the marine foraging habits of MAMUs in the South Puget Sound.
- To assess what oceanographic parameters are associated with the presence of foraging and non-foraging MAMUs at Browns Point, Tacoma, WA.
- To characterize and assess MAMU responses to boat traffic at Browns Point.
- To assess whether there is a correlation between the presence of MAMUs and harbor porpoises.

METHODS

- Using binoculars, a laser rangefinder, and a compass, I conducted 4-hour shore-based surveys ~4 days a week from early June through early August at Browns Point Lighthouse (BPLH), Tacoma, WA.
- During instantaneous counts every 30 minutes, data on the number of MAMUs present, their foraging behavior and location were recorded. Additionally, I recorded the number of harbor porpoises present.
- Data on dive intensity (number of dives in a 10 minute period) and dive duration were collected opportunistically.
- I recorded the following boat traffic data: Type of boat, distance from shore, distance to MAMUs and MAMU response, if any.

PRELIMINARY RESULTS

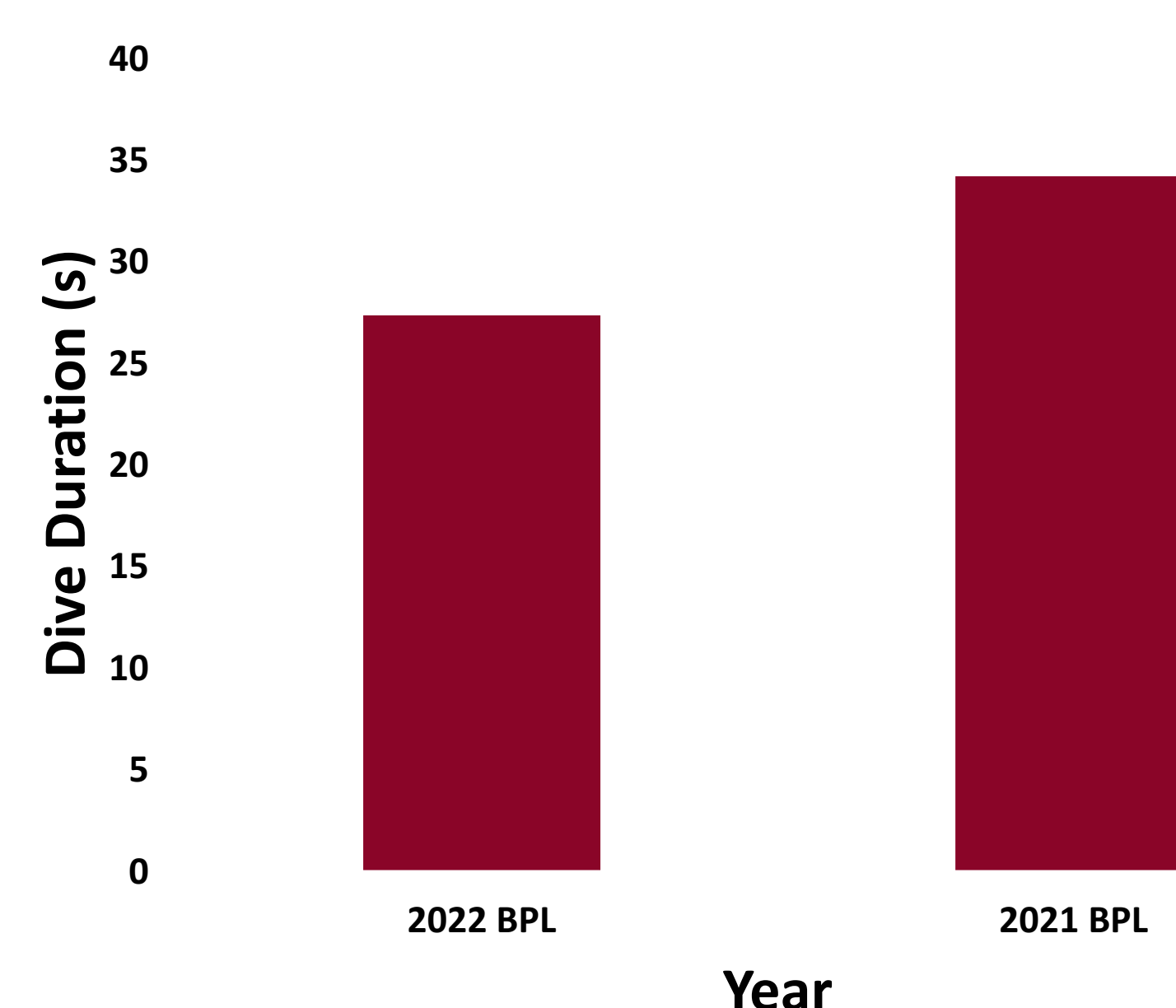


Figure 1. Mean dive duration at Browns Point Lighthouse was 27.31 seconds in 2022 (n = 283) and 34.14 (n = 61) in 2021.

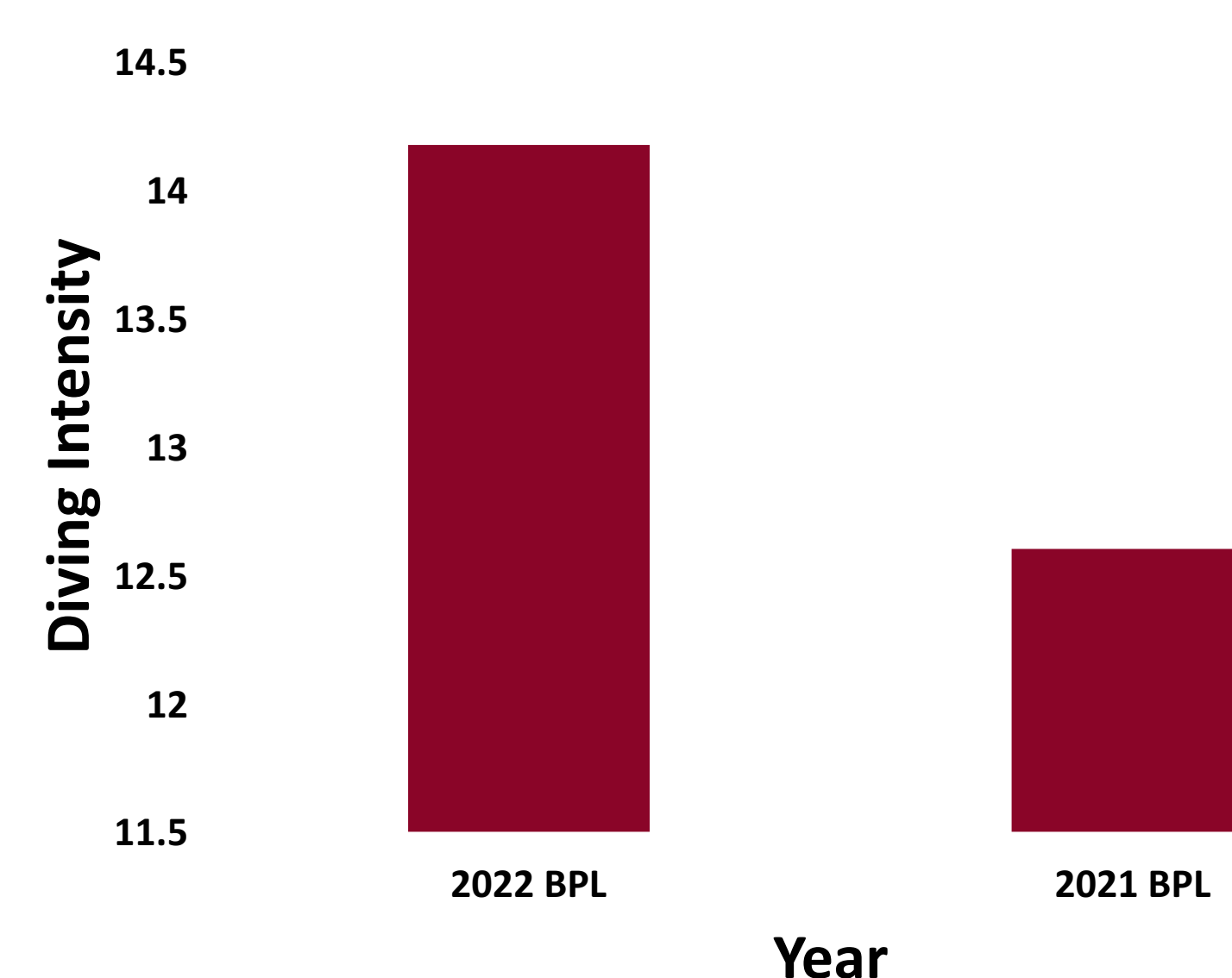


Figure 2. Mean number of dives in a 10 minute period of foraging at Browns Point Lighthouse was 14.17 dives (n = 58) in 2022 and 12.60 (n = 10) in 2021.

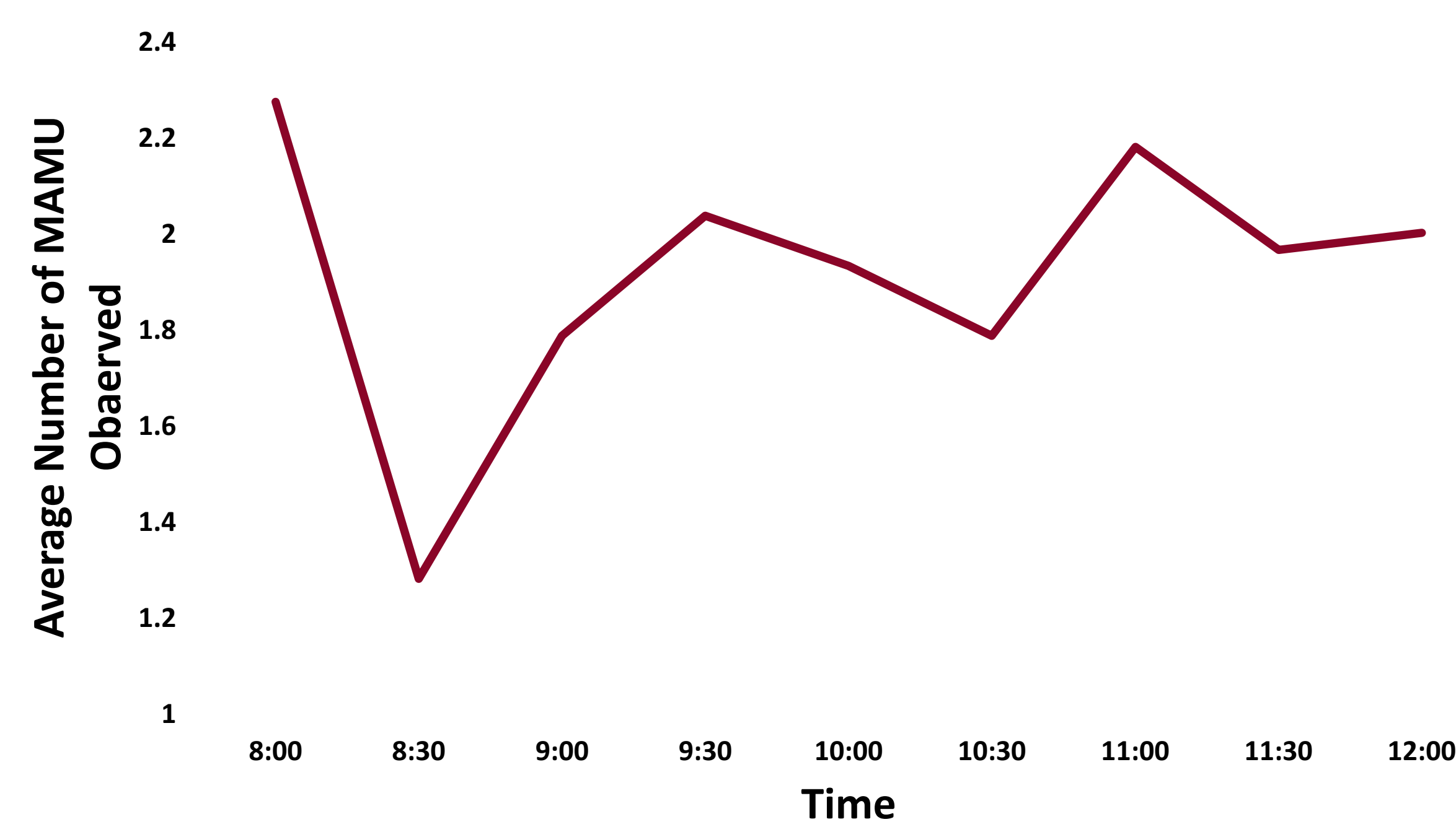


Figure 3. Mean number of MAMUs observed per 30-minute count from 8:00 am -12:00 pm. The MAMU abundance has a max at 8:00 am and a min at 8:30 am.

DISCUSSION

These results are a preliminary exploration of my data. Future analyses include mapping the distribution of MAMU foraging locations and characterizing the oceanographic parameters (depth, slope, bottom substrate) of the foraging locations. I plan to analyze MAMU seasonal abundance, boat traffic (and MAMU response), harbor porpoise/MAMU associations, and MAMU foraging behaviors at BPLH and compare results with those from previous field seasons (Poplawsky '22).



ACKNOWLEDGEMENTS

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