

Sea otter (*Enhydra lutris lutris*) foraging ecology and behavior in Eastern Hokkaido, Japan

Samantha N. M. Hamilton¹

¹Rakko Research, Santa Cruz, CA 95060



INTRODUCTION

Sea otters have struggled to find a foothold in Japan after being extirpated by the maritime fur trade in the 1800s (Kenyon, 1969). However, the endangered species is now reoccupying portions of its historical range and forming small, fragmented populations along Eastern Hokkaido. One such population has settled off Cape Kiritappu, a remote outcrop first recolonized in 2016. The Cape currently supports about 15 sea otters, which may multiply over the coming decades (Kataoka, 2024).

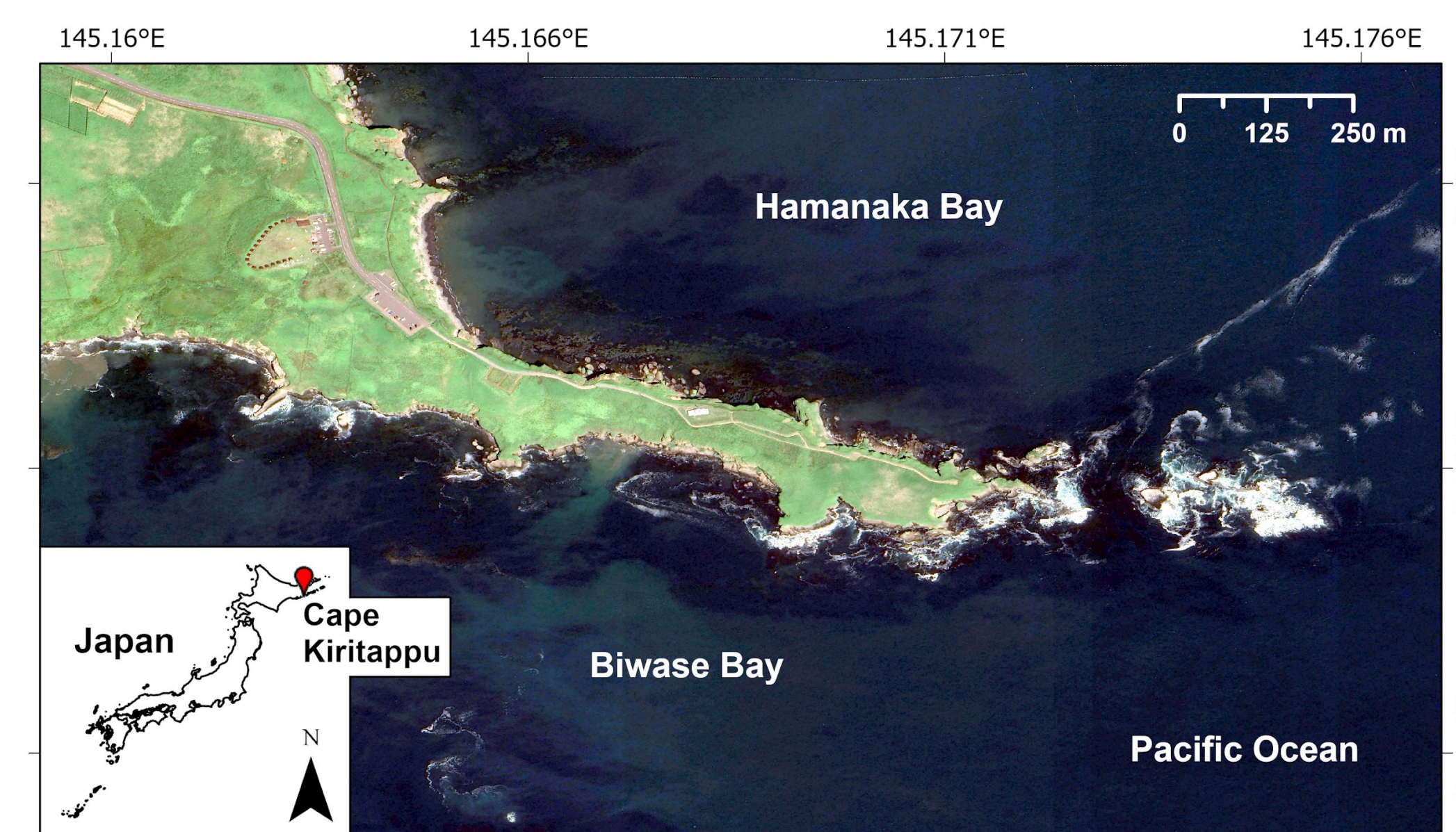


Figure 1. Map of Cape Kiritappu, Hokkaido, Japan.

While beneficial for species conservation, **population growth will likely bring sea otters into conflict with humans**. Cape Kiritappu is surrounded by productive bays with highly profitable fisheries, and sea otter recovery may pose a threat to their sustainability. Hamanaka officials, along with the regional Fisheries Cooperative Association, have begun expressing early fears over possible conflict with the endangered species (Kyodo News, 2020).

OBJECTIVES

- (1) Quantify prey selection, determine diet diversity, and identify spatiotemporal diet patterns
- (2) Measure the extent of human-sea otter overlap in marine resource use to reveal the recovering population's direct impact on commercially valuable prey

METHODS

Diet and foraging behaviors were measured by following well-established protocols (Bodkin, 2011). A 50-80x Questar telescope was used to spot sea otters within viewable range (100-800 m from shore) along the Cape Kiritappu coastline.

All observations were made during daylight hours in early November 2024.



Figure 2. (A) Binoculars and (B) telescope-camera complex used for data collection.

RESULTS

Foraging Records

Table 1. Cape Kiritappu sea otter foraging bouts and associated demographic data.

Date	Start Time	Location	Age	Sex	With Pup?	No. of Dives
Nov. 04	10:50	Yaboi Bay	Adult	Female	N	20
Nov. 06	10:47	Yaboi Bay	Adult	Female	N	27
Nov. 06	13:32	Yaboi Bay	Adult	Female	N	18
Nov. 07	12:43	Headland	Adult	Female	Y	23
Nov. 07	13:32	Headland	Adult	Female	Y	16

Diet Composition

Overall foraging success was **86.14%** (excluding dives of unknown success). Only **small-** and **medium-sized** prey were eaten.

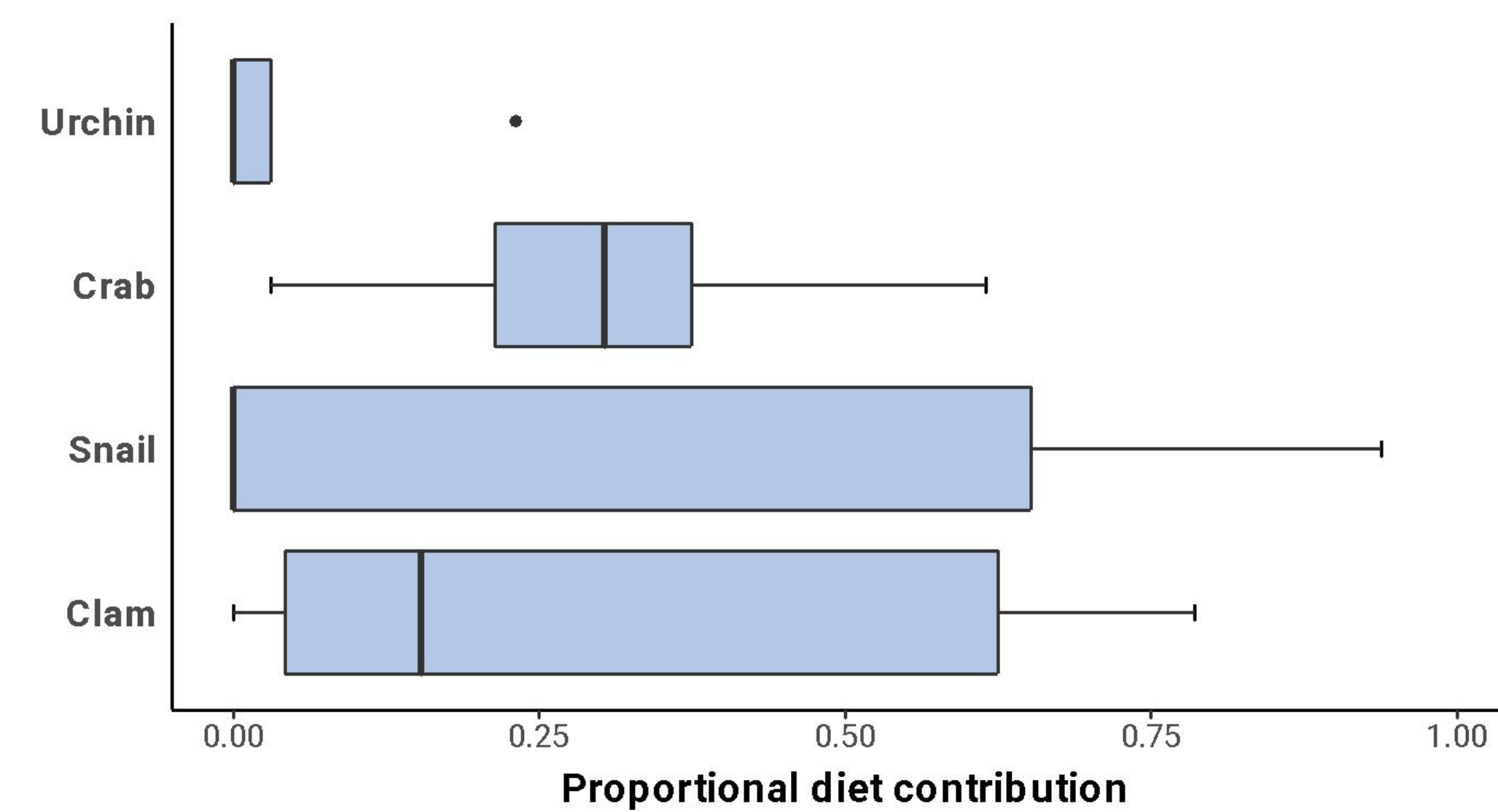


Figure 3. Prey classes comprising Cape Kiritappu sea otters' diet.

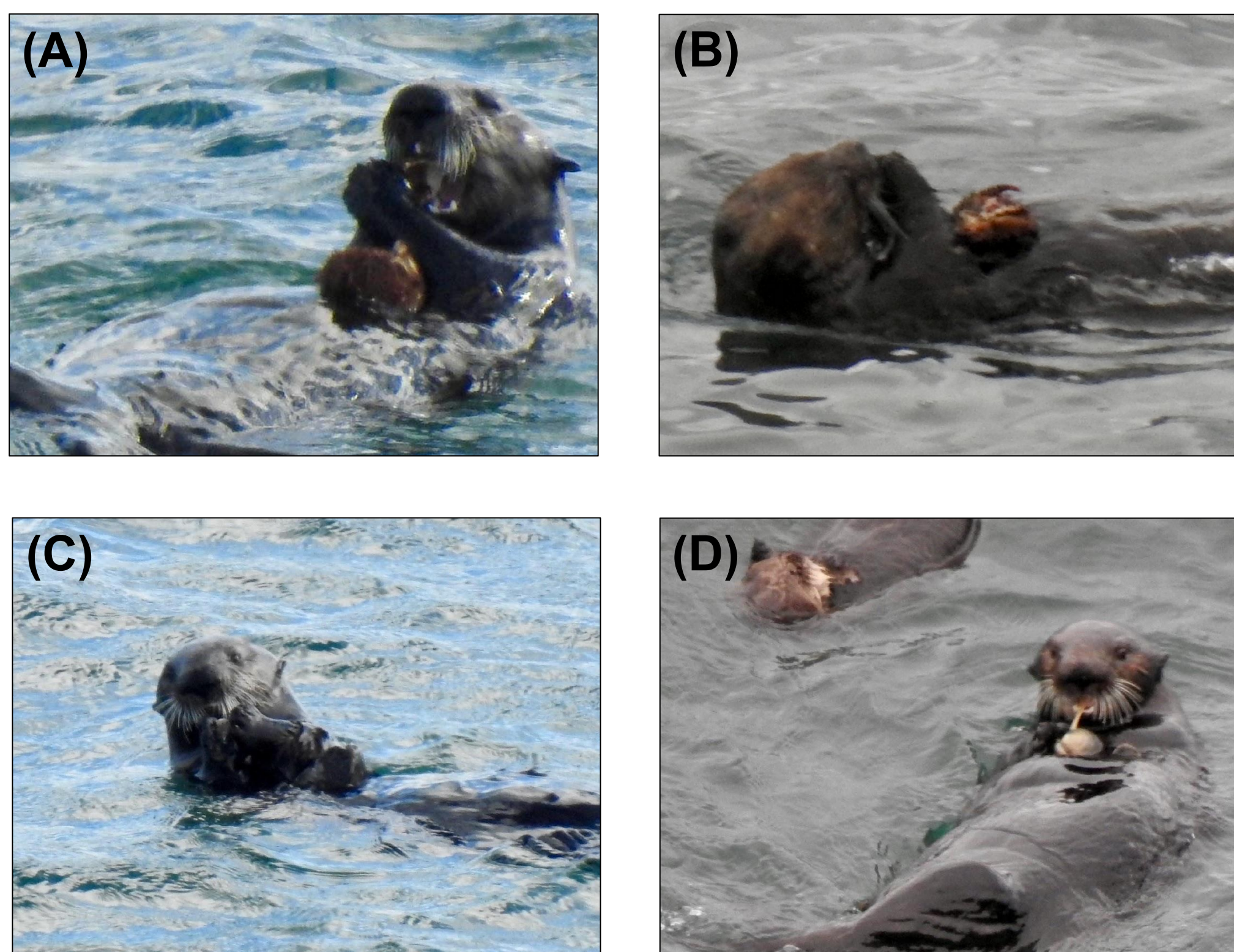
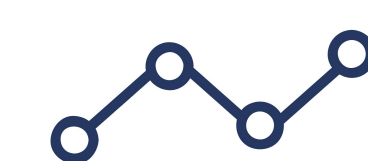


Figure 4. Prey consumed, including (A) urchin, (B) crab, (C) snail, and (D) clam.

FUTURE STEPS



Collect additional data to increase sample size and conduct statistically meaningful analyses



Calculate energy intake rates using the **Sea Otter Foraging Analysis Program** (Tinker et al., 2008)



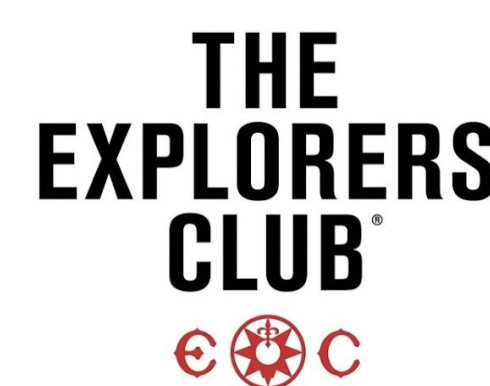
Share project results with scientific and public audiences through publications and presentations

REFERENCES

- (1) Bodkin, J. L. (2011). *SOP for collecting sea otter forage data: Southwest Alaska Inventory and Monitoring Network* [Report]. National Park Service, Fort Collins, CO, USA.
- (2) Kataoka, Y. (2024). *International protected animals that are being revived in Hokkaido* [Report]. NPO Etopirika Fund, Hamanaka, Hokkaido, Japan.
- (3) Kenyon, K. W. (1969, August). *The sea otter in the eastern Pacific Ocean* [Report]. North American Fauna, Bureau of Sport Fisheries and Wildlife, Washington, D.C., USA.
- (4) Kyodo News. (2020, Oct. 3). *Rare wild sea otters create tourist boom for Hokkaido town*.
- (5) Tinker, M. T., Bentall, G. B., & Estes, J. A. (2008). Food limitation leads to behavioral diversification and dietary specialization in sea otters. *PNAS*, 105(2), 560–565.

ACKNOWLEDGEMENTS

Thank you to Yoshihiro Kataoka for sharing local knowledge of the Kiritappu sea otter population. I am in gratitude to the following funders:



✉ samantha.nm.hamilton@gmail.com
📷 [rakko.research](https://www.rakko.research)