Case study 1- Pacific Region: Hawaii Odontocete Studies

Provider: HDR/Cascadia Research Collective

Contact: Robin Baird

Region: HRC (PMRF)

Priority species: Short-finned pilot whale, False killer whale, Blainville’s beaked whale, Cuvier’s beaked whale (limited)

Project years: 2010 - Ongoing (with data on priority species)

Grade: B1

Grade definition

Adequate presentation of data streams that demonstrate the data from this project could provide one or more metric of early warning signs under MSM4PCoD.

Project Summary

This project has focused on satellite tagging of priority species, looking primarily at the ecology and movement of deep diving odontocetes. This project is linked the NUWC M3R acoustic monitoring project, however sample sizes of acoustic detections are also lacking for this dataset.

Relevance to MSM4PCoD

* The Hawaii Odontocete Studies Project merges a variety of datastreams over a relatively long duration, which potentially provides the opportunity to explore both time series data, and the feasibility of creating an integrated population model.
* Given that sample sizes are not available in the annual reports for the acoustic data, visual surveys might be used to establish annual population estimates, with additional data being drawn from Capture – Recapture, Biopsy, and Telemetry
* While the annual reports for the M3R project do not include sample sizes, this data has been implemented in abundance estimates of Cuvier’s beaked whale from PAM1, demonstrating further analysis of PAM data for the region which could be integrated into the population model.
* If we wish to include PAM data from this project, we would need more information on detections both from this project and from the M3R project.

Data availability/Sample sizes

**Visual survey (boat-based):** Sightings, survey hours (n=347) and distance covered (7213km) were recorded for Blainville’s beaked whale, false killer whale and short-finned pilot whale, between 2010-2021. Detection probability is not mentioned, but data is available in Obis Seamap.

**Capture-Recapture:** Photo-ID data has been reported for three species under the Hawaii Odontocete Project, short-finned pilot whale, Blainville’s beaked whale, and false killer whale (only one year of data). Data has been reported between 2012-2018, with the number of catalog matches and unique individuals listed. However, we know from contacts with Cascadia Research Collective that long term photo-id catalogs do exist for the Hawaiian region for short-finned pilot whale, false killer whale, Cuvier’s and Blainville’s beaked whale

**Telemetry:** Between 2010-2018, False killer whale (n=4), short-finned pilot whale (n=32), Blainville’s beaked whale (n=2) were tagged using a combination of location and location/depth tags.

**Biopsy:** Between 2010-2018, biopsy samples of short-finned pilot whale (n=12) and false killer whale were reported (n=5). In general, the analysis of these samples has not been reported.

**Acoustic:** Fixed hydrophones were deployed during the Hawaii Odontocete Studies, however while the number of deployed devices is listed, and mostly the number of survey hours is provided, there is little information on the number of detections.

Questions for data holders

* How developed are the photo-id catalogs from Cascadia Research Collective for our listed priority species?
* Where might we find the earlier studies? (2008 & 2009)
* Is there a database of capture recapture information for priority species that we might be able to access?
* Are there reports or analysis available on the number of detections from fixed hydrophone arrays?

References

1. https://www.navymarinespeciesmonitoring.us/files/7614/9616/9391/Moretti\_2017\_M3R\_PAM\_Abundance\_on\_PMRF\_and\_SOAR.pdf