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Plastics in the Gut's of Leach's Storm Petrels in Humboldt County, California

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Plastics prevalence and load in Leach's Storm Petrels in Humboldt County, California

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Introduction

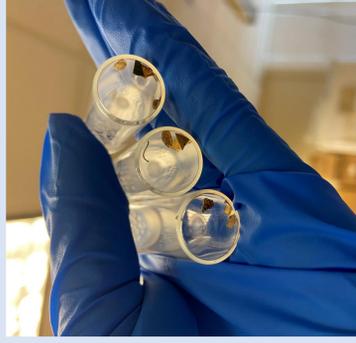
Ever increasing plastic contents in our oceans has been comprehensively analyzed in previous studies. However, no known study has analyzed the plastic consumption of Leach's storm petrels (*Oceanodroma leucorhoa*) within the Pacific Ocean. On November 27th, 2019, 56 Leach's storm petrels were found dead in Hupa and Bridgeville, and one was found in Fieldbrook soon after on December 1st following an exceptional storm and their bodies were donated to the wildlife museum. In this study I analyze and report on the plastic contents of the digestive tracts 38 of these birds.

Objective

To record and report the prevalence and load of plastic consumption in Leach's Storm Petrels found within Humboldt county.

Methods

- The upper gastrointestinal tract (esophagus, the upper and lower proventriculus and the gizzard) was removed from the bird
- The contents of the tract were removed and rinsed into a 1mm sieve to eliminate any microplastics
- Any material that appeared to be plastics were removed
- Red Nile dye, which fluoresces under blue light when bound to plastics, was used to further confirm the plastics
- Plastic load of each individual was counted and weighed



Results

- 79% of our sample had suspected plastics in their upper gastrointestinal tract
- Out of 38 samples, 68% had confirmed plastics (>1 mm) and 26% did not, and a remaining 5% contained suspected plastics
- A total of 73 pieces of plastic were stained and confirmed
- Average of 2.8 pieces of plastic weighing an average of 0.0105 grams per bird.
- A total of 0.2731 grams of plastics were removed

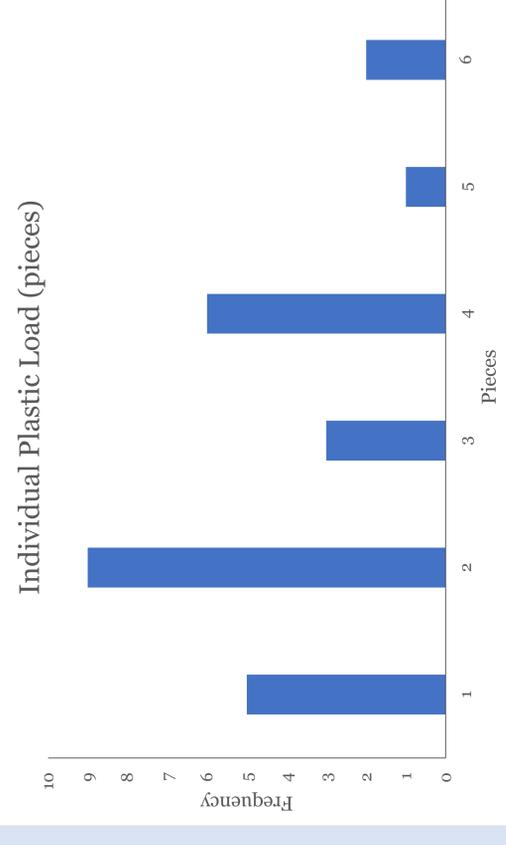


Figure 3: Graph showing how many separate pieces of plastic were found in each bird sampled. This graph does not include any suspected plastics.

Conclusions

- This study showed that Leach's Storm Petrels found in Humboldt County are consuming plastics.
- This study found a lower plastic prevalence, as well as a smaller load when compared to a study on Leach's storm petrel fledglings in Newfoundland (Krug et. al. 2021).
- Based on the results from research done by Eric Culbertson, these birds most closely resemble populations from the Aleutian Islands and Southeastern Alaska.
- Further research should be done on how plastics impact the fitness of Leach's Storm Petrels.

Acknowledgements

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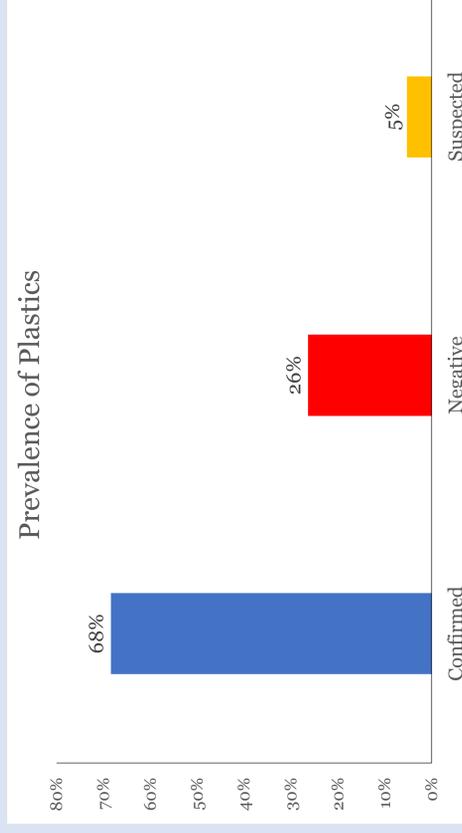


Figure 1: Graph showing the prevalence of plastics in the sampled birds. It shows the percentage of birds that were confirmed to have plastics in them, the birds that did not have any plastics in them, and the birds that had suspected plastics that were unconfirmable using our methods.

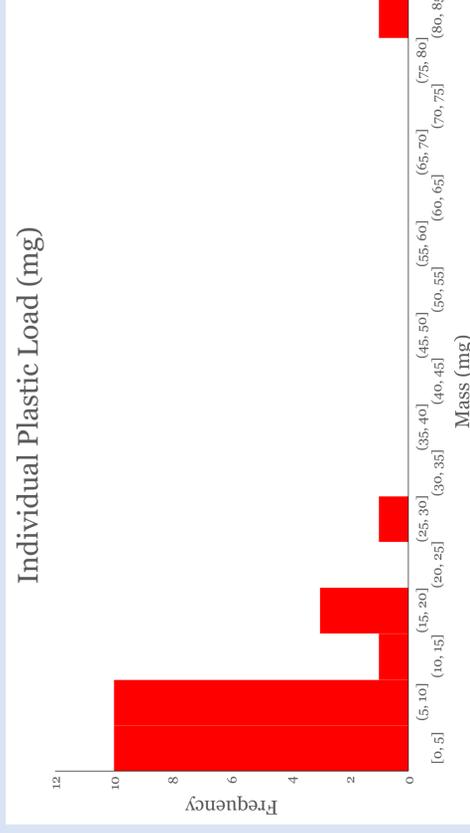


Figure 2: Graph showing the weights of plastics in micrograms found in each bird. These weights only include the birds that had plastics and it does not include suspected plastics.