

## **SOCIETY FOR MARINE MAMMALOLOGY: SMALL GRANTS IN AID OF RESEARCH (2019) GRANT REPORT**

**PROJECT TITLE: Feeding ecology of Otariids in Southern Brazil over the last decade**

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### **Project Summary:**

Three pinniped otariid species are frequent in the southern Brazilian coast (31-33°S): the South American fur seal (SAFS, *Arctocephalus australis*), the Subantarctic fur seal (SFS, *Arctocephalus tropicalis*), and the South American sea lion (SASL, *Otaria flavescens*). Individuals use this as a feeding ground in cold austral months, during the post-reproductive displacement from their colonies, which are located in Uruguay and Argentina, for SAFS and SASL, and oceanic islands north of the Antarctic Convergence, for SFS. However, little is known about their feeding habits and resource partitioning in this area. We have used the conventional method of stomach content analysis to assess the feeding ecology of these species from 2009 to 2019.

### **Project Progress:**

In total, 304 otariid stomachs were sampled along our study area: 161 from SAFS, 29 from SFS, and 114 from SASL. All *Arctocephalus* spp. and 93 SASL stomachs were screened for content (Figure 1). The project development was affected by the COVID-19 pandemic and the limited access to the laboratory – for this reason, only ~30% of stomachs with prey remains could be analyzed for SASL. We hope to be able to analyze and include the remaining samples in a future project. As for the *Arctocephalus* spp., due to the high occurrence of empty stomachs, we would like to continue sampling for a few more years.

### **Project Results:**

In summary, only 29 stomachs from SAFS and 12 from SFS had prey remains that could be identified to a satisfactory taxonomic level. As for SASL, only 20 samples could be analyzed. Diet was estimated at the population level for each species and results are summarized in Table 1. The Schoener's Trophic Overlap Index pointed to a 37% overlap between SAFS and SFS diets, 5% between SAFS and SASL, and 0% between SFS and SASL.



Photo: a) A Subantarctic fur seal (*A. tropicalis*) found dead in Rio Grande do Sul, Southern Brazil, on austral winter of 2013; b) A stomach from *Artocephalus* sp. ready to be dissected; c) Screening of prey remains on a 200µm mesh size sieve; d) Squid upper beak (*I. argentinus*) as viewed under the stereomicroscope where measurements were taken.

Table 1 – Diet composition of otariids (*A. australis*, *A. tropicalis*, and *O. flavescens*) in the southern Brazilian coast from 2009 to 2019 as determined by stomach content analysis. Numerical frequency (%N), occurrence frequency (%FO), biomass (W%), and the Index of Relative Importance (%IRI) are presented for each prey (whenever possible) found for each species.

