

Movements and Foraging of NZ Sea Lions (*Phocarctos hookeri*) in the Catlins Region, NZ

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The first field season of an international collaborative research effort was conducted from July 1-12, 2019 and was funded in part through a Texas Comprehensive Research Fund (TCRF) grant. This project will fulfill part of the doctoral dissertation for Nathan Reed. The team consisted of personnel from Texas A&M University at Galveston, Auckland Zoo, Massey University, Cawthron Institute, New Zealand Department of Conservation and the NZ Sea Lion Trust. Research focused on the movements and foraging behavior of the endangered NZ sea lion within the Catlins region, South Island.



Figure 1: Attachment of satellite telemeter and sampling during anesthesia.

Our team was able to locate, capture and tag four female sea lions over the course of two weeks. All four females were outfitted with satellite and radio telemeters for real-time movements, and three animals had additional video and data recording devices (VDRs) attached to collect foraging data. The VDRs were recovered after foraging trips to download data, while satellite and radio tags were left on animals to continue collecting location data. Two satellite tags transmitted locations for a month apiece, while the other two currently remain functional and have provided movement data for over two months. This data will be used to examine home ranges and high-use areas, as well as foraging trip characteristics. The one VDR recovered provided dive profiles and at-sea conditions for foraging trips.

The TCRF funds made this project possible by providing funds for veterinary services, Argos satellite tracking costs, and anesthesia equipment and supplies. These were all necessary services and goods, so we are grateful to have the funds available for our work. This research was part of a larger effort to conserve the sea lion population through concentrated research and management, and we were excited to be able to contribute to the project. The TCRF funding



Figure 3: Placement of VDR (forward) and telemeters (back) on a female NZ sea lion.

allowed us to establish research collaborations and experience which are already creating project ideas for future work. The VDR usage included in our work also helped to field validate the instruments in preparation for future use. This equipment was designed to collect oceanographic and diving data using megafauna attachment. Our field season added to the demonstrated capabilities of the VDRs in various environments and conditions, and identified modifications to design and programming to improve performance. Future research applications of the equipment will include the Texas coast and Gulf of Mexico regions and wildlife.



Figure 2: Blood sampling of anesthetized animal for health screening.

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