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ARE ELEPHANT SEALS AIMLESS DRIFTERS? THE TEMPORAL COMPONENTS OF DRIFT DIVING IN SOUTHERN ELEPHANT SEALS

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Elephant seals are one of the few pinnipeds known to perform drift dives, where the seal ceases active swimming in the water column and drifts passively. Whilst the function of these dives is not clear, it is thought that they serve as resting or food processing.

During the drift phase the seal may float or sink, depending on its buoyancy, which is determined primarily by the ratio of lipid to lean tissue. Analysis of the drift rates of seals over their foraging trips has been shown to be a useful way to estimate body composition changes of free ranging marine mammals. Drift dives in both northern and southern elephant seals have been used to describe changes in relative body composition of individuals over time; however the temporal and behavioural components of drift diving in elephant seals have never been described. We have 100 TDR deployments of southern elephant seals from Macquarie Island with which to do such an analysis along with corresponding measurements of body mass and condition of the same individuals.

We also examined the components of drift diving that may correlate to foraging success, as measured through mass gain in order to develop an index of foraging success. Using this approach we hope to ultimately determine where and when individuals encounter and ingest prey and identify the location of elephant seal prey patches to incorporate into models of predator performance.