

Tracking southern right whales through the south Atlantic: New insights into migrations routes and feeding ground locations

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Southern right whales (SRWs, *Eubalaena australis*) have died in unprecedented numbers in their breeding and nursing grounds near Peninsula Valdes (PV), Argentina, over the past decade. Considered one of the largest die-offs of a whale species on record, this issue is of great concern. The incidence of mortality is higher on calves younger than three months, which could be related to the nutritional status of their mothers, an untested hypothesis formulated at several local and international specialist workshops. Understanding patterns of habitat use, migration routes and feeding destinations beyond PV could provide insights for evaluating potential impacts to SRWs. In October 2014, five SRWs were tagged with location-only and archival implantable satellite tags in Golfo Nuevo, PV. Since then, these tags have provided unprecedented information on migratory routes and location of feeding grounds of these whales. One tag was still providing data after more than 6 months post-deployment (average tag duration is at 92 days, range = 23-210 days). Preliminary data suggest substantial individual variation in movement patterns that may be related to age, sex and reproductive condition of the whales. Some animals moved through a vast portion of the South Atlantic and visited multiple possible foraging grounds with a variety of potential prey sources. Estimation of behavioral states through state-spaced modeling indicate that possible foraging areas of these whales include: (a) the Patagonian shelf off central Argentina between the 100 and the 1000m isobaths, where former Soviet whalers killed more than 1300 whales in the 1950s and 1960s, (b) the sub-tropical convergence nearly 700 miles southeast of the La Plata River, (c) areas north of the Malvinas/Falklands Archipelago, and (d) in the waters around South Georgia. Additional tagging is needed to better understand the natural history of this population of whales, and any potential correlations with the die-off.