

Male elephant seals risk death in order to eat more and grow big enough to win mates

February 8 2022, by Bob Yirka

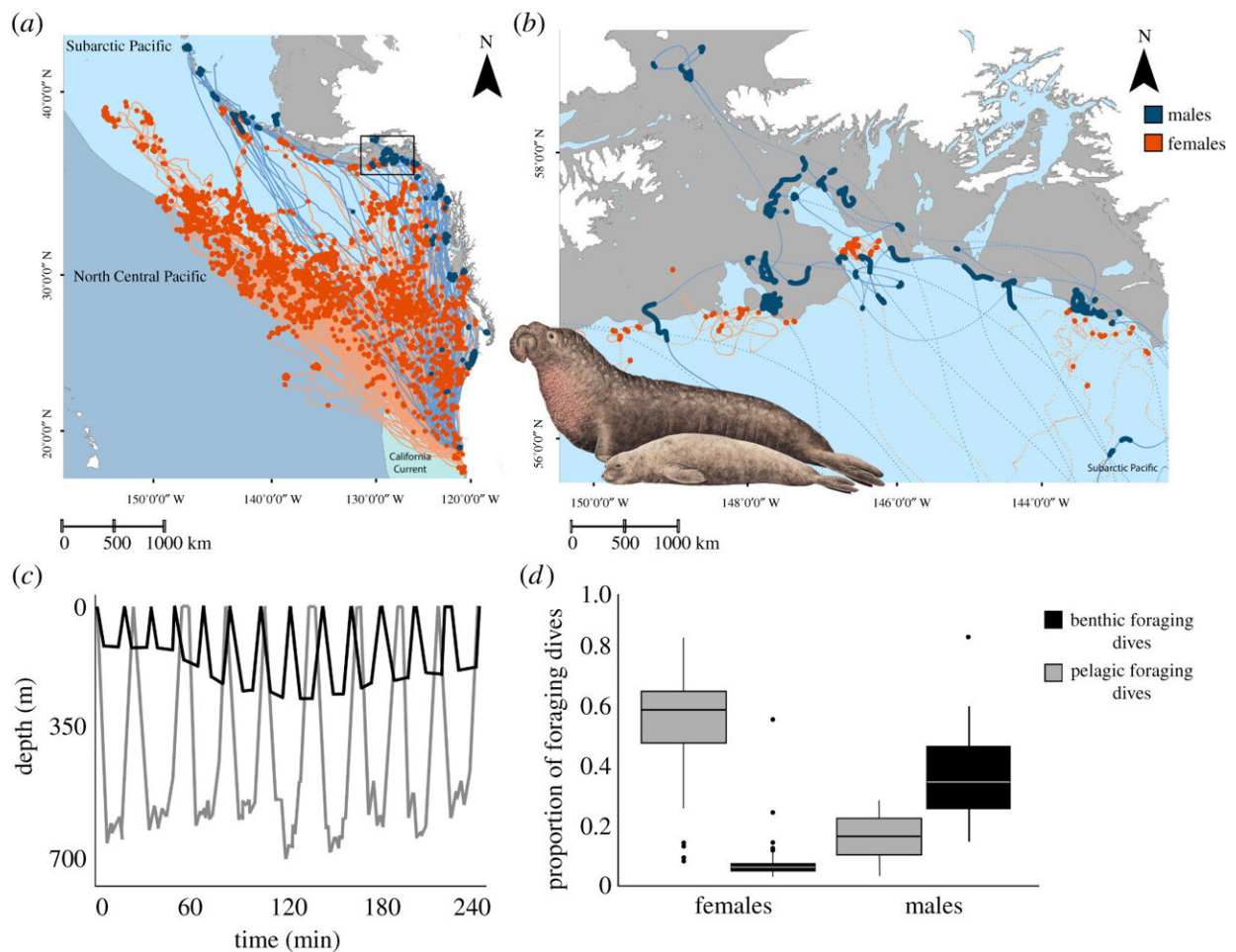


Figure 1. Comparison of satellite tracks and dive behavior of 39 male and 178 female northern elephant seals (*Mirounga angustirostris*). (a) Males travel (blue lines) to coastal areas and forage (blue circles) on the continental shelf (gray area). Females travel (orange lines) and forage (orange circles) throughout the North Pacific. The three mesopelagic ecosystems (boundaries defined by Sutton

et al. [35] used by northern elephant seals are color-coded and labeled, with the California Current ecoregion in aqua, the Subarctic Pacific in light blue and the North Central Pacific in blue-gray. (b) Expanded view of differential male and female habitat use on/near the continental shelf in the Subarctic Pacific. Northern elephant seal illustration by Pieter Folkens. (c) Representative dive profile of daytime benthic foraging (black line) and pelagic foraging dives (gray line) from a male and female seal, respectively. The benthic foraging dives represented here occurred on the continental shelf, and the pelagic foraging dives were adjacent to the shelf edge. (d) Boxplots comparing the proportions of the two foraging dive types used by both sexes on their foraging trips: benthic foraging dives (black) and pelagic foraging dives (gray). Horizontal bars denote the 25th, 50th (median) and 75th quartile. Credit: DOI: 10.1098/rsos.210522

A team of researchers from the University of California, Baylor University and Sonoma State University, has found that male northern elephant seals are willing to risk their lives to eat more so that they will have a greater chance of mating. In their paper published in the journal *Royal Society Open Science*, the group describes how they attached tracking devices to elephant seals over a nine-year period and what they learned from the data they obtained.

Male [elephant seals](#) are three to seven times larger than females. The researchers theorized that this suggested that the [males](#) and females forage differently. To determine if this is the case, they attached satellite and [radio transmitters](#) capable of recording depth and location to more than 200 male and female elephant seals from 2006 to 2015. They also measured the fat stores of the same seals multiple times over the course of their study to learn more about how they grew over time.

The [data](#) proved the researchers correct. Males and females had very different foraging habits, with the females swimming out to sea and foraging in deep water. The males, on the other hand, kept much closer

to shore, and by doing so, they were able to consume calories approximately four times faster than the females. But it came at a cost. By foraging near shore the males were risking their lives—they were approximately six times as likely to die while foraging than the females. And the reason they were willing to take such risks came down to mating, because only the largest males got to mate at all. The biggest males formed harems and chased off their smaller competition.

The researchers conclude by suggesting the different eating patterns reveal that males were willing to risk death to consume more food, hoping that they would grow big enough to form their own harem so they could pass on their genes.

More information: Sarah S. Kienle et al, Trade-offs between foraging reward and mortality risk drive sex-specific foraging strategies in sexually dimorphic northern elephant seals, *Royal Society Open Science* (2022). [DOI: 10.1098/rsos.210522](https://doi.org/10.1098/rsos.210522)

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