ELEPHANT SEAL FORAGING

In an article by Burney Le Boeuf and others, details about elephant seal migrations and feeding strategies are suggested. Satellite tracking devices and data recorders were attached to 27 adult males and 20 adult females during the two annual foraging trips.

Results:

1. Male and female elephant seals travel to different areas and feed on different prey.

2. Male elephant seals show consistency in following the same routes year after year. The males head north, traveling directly to certain areas along the continental margin, ranging from coastal Oregon to the Aleutian Islands. The largest males traveled the greatest distances. Once a male reaches his destination he tends to stay there. The flat-bottomed dives of the males suggest a descent to the seafloor to feed on bottom dwelling prey: skates, rays, ratfish, small sharks, and hagfish.

3. Females follow more variable routes across a wide area of the northeastern Pacific, feeding in deep waters and moving from place to place in the open ocean. The females' jagged-bottomed dives suggest they were pursuing prey that moved up and down in the water, presumably in pursuit of several species of squid.

What do these differences suggest?

1. Males gain more weight than females despite spending less time at sea. The males may be finding more food, eating higher-quality food, or both. Because the larger males father more pups, natural selection has favored larger males with high energy requirements.

2. Males are exposed to greater risk of encountering great white sharks and killer whales along the continental margin. Migrating longer distances and taking more risk pays off for the survivors in terms of foraging success, and ultimately, reproductive success.

3. The foraging strategy of the females has drawbacks too. During the 1997-98 El Nino season the northern Pacific waters were unusually warm which altered the distribution of fish, including squid. In 1998 the females tracked spent more time looking for food and less time in any one location than in normal years. As a result the females did not gain as much weight as usual, which could alter their breeding success.

Le Boeuf et al. 2000 Ecological Monographs 70:353-382

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