

sea lions sampled in SEA were identified as weaned using vibrissae stable isotopes, compared to 62% of yearlings sampled in PWS and 67% of yearlings sampled in AI. A subset of these animals were behaviorally observed to be nursing at capture (n=129). All animals observed as nursing in PWS, GOA, and AI also showed no isotopic evidence of weaning in the vibrissae. However, 10 yearling sea lions observed nursing in SEA were categorized as weaned using vibrissae stable isotopes suggesting that these animals were supplementing their independent foraging with continued nursing for nutritional or behavioral reasons.

Delayed age at weaning in Southeast Alaska Steller sea lions determined using stable isotopes of carbon and nitrogen

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Weaning age is an important metric of population dynamics relative to prey availability. Previous estimates of weaning age in Steller sea lions were based on infrequent behavioral observation. In this study, vibrissae (whiskers) were collected from 352 free-ranging Steller sea lions in Southeast Alaska (SEA; eDPS, n=128), Prince William Sound (PWS; wDPS, n=124), Gulf of Alaska (GOA; wDPS, n=33) and the Aleutian Islands (AI; wDPS, n=67) between 1998 and 2009 to determine the proportion of animals weaned in each region. Stable isotopes of carbon and nitrogen were measured in segments sectioned along the length of each vibrissae from the tip (tissue grown in utero) to the root (most recently grown tissue) to provide a timeline of changes in the trophic level of the ingested diet of the young of the year or juvenile sea lion. Sea lions were categorized as weaned if there were indications of decreased trophic level of the diet through assessment of both the carbon and nitrogen isotope ratios near the root end of the vibrissae compared to early nursing isotopic ratios. Only 1 sea lion pup was found to be weaned in each of PWS and GOA during the first year of life. During their second year, 41% of



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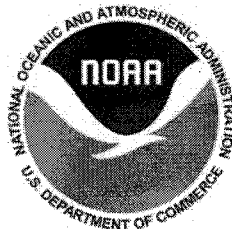
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