

*Session SSL-11: Steller Sea Lion Biology and Ecology
Feeding and Diving Ontogeny*

Differences in blubber levels of the fatty acid 20:1n-11 suggest free-ranging Steller sea lions (*Eumetopias jubatus*) ingest prey at a younger age in Prince William Sound than sea lions captured in southeast Alaska

Lorrie D. Rea

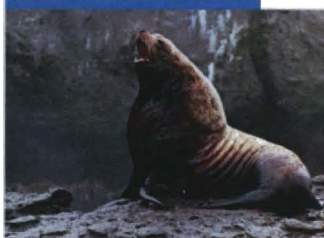
Alaska Department of Fish and Game, Wildlife Conservation
Lorrie_Rea@fishgame.state.ak.us

Blubber levels of the fatty acid 20:1n11 were used to identify prey ingestion by young Steller sea lions (*Eumetopias jubatus*, 2 to 26 months of age) captured in Prince William Sound (PWS), AK (n=46) and southeast Alaska (SEA) locations (n=69). Since this fatty acid tends to be underrepresented in Steller sea lion milk (2.30 ± 0.2 wt % n=10) compared to marine fish, a threshold level of 7 weight % was used to indicate ingestion of some marine prey. Based on this threshold, 100% of animals captured in PWS that were 10 months or older (n=33) showed evidence of fish ingestion. In contrast, only 1 of 69 animals captured in SEA (2 -19 months of age) indicated fish intake. At 2 months of age, PWS pups had significantly higher body fat content ($4.4 \pm 1.6\%$) than SEA pups ($1.8 \pm 1.4\%$, $p < 0.001$). However, at 14 to 15 months of age there was no significant difference between PWS ($18.3 \pm 9.7\%$) and SEA ($17.1 \pm 6.5\%$) juveniles due to the large variability in body composition seen in both regions at this age (3% to 33.5%). Some of this variability in body fat content in PWS animals can be explained by the evidence of milk ingestion in some juveniles (n=3) in addition to independent foraging. These three individuals ranged in body fat content from 27 to 33.5%. Given that high 20:1T11 levels were found in these three nursing juveniles, additional variables will be required to distinguish fully weaned animals from those consuming both milk and prey. Concurrent and ongoing research on quantitative fatty acid signature analysis and stable isotope analysis are expected to refine our ability to determine the time of weaning and the proportion of diet consumed as milk for each animal. Funded by NOAA (NA17FX1079) to ADFG.

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