

*POSTER Session: Steller Sea Lion Biology and Ecology
Diet*

Location and age class differences in the dietary fatty acids of young Steller sea lions

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Evaluating the food limitation hypothesis for the decline of juvenile Steller sea lions requires knowledge of the diet composition of individuals in both the declining and stable populations. To date, all estimates of diet composition have come from scat analyses and are not specific to a particular age class. Fatty acid signature analysis is an alternative method of investigating diet composition and is based on the conservation of unique fatty acids through the marine food chain. We examined the fatty acid signature of individuals from Prince William Sound (PWS) and Southeast Alaska (SE). Blubber biopsies were taken from 13 pups and 16 yearlings in PWS and from 13 pups and 20 yearlings in SE. The extraction and identification of 68 fatty acids (FA) from these biopsies were done according to Iverson et al. (1997). Using 12 dietary FA, we conducted a discriminant function analysis to determine if animals could be identified to the correct age and location group based on their FA composition. These 12 FA accounted for $85.0\% \pm 0.15\%$ of total FAs identified. All individuals were classified to the correct age/location group with a jack-knife cross-validation error rate of 4.8%. The 1st discriminant function, which explained 51.8% of the variation between individuals, clearly separated pups from yearlings. The second discriminant function, explaining 45.9% of the variation, separated PWS animals from SE animals. These results suggest that Steller sea lions in the two areas are consuming different diets. Further investigation and examination of the fatty acid signature of prey species is required before a quantitative estimate of diet composition can be produced. The separation of pups from yearlings based on their FA composition provides further support for the use of FAs as a weaning indicator.

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