

**Variability in  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  stable isotope signatures of Steller sea lion pup vibrissae: implications for diet and foraging studies**

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From the 1970s to the 1990s, Steller sea lion (*Eumetopias jubatus*) populations declined severely, resulting in the western stock's listing as endangered under the United States Endangered Species Act. In order to form effective management decisions, it is critical to understand the diet of Steller sea lions and which prey species are regionally important to sea lions. One approach has been through stable isotope analysis of their various tissues. Analysis of their vibrissae, or whiskers, provides a sequential representation of that individual's diet from growth in utero to the present. Previous studies have relied heavily on stable isotope signatures along the length of the longest vibrissa from an individual, but variability in stable isotope signatures between vibrissae in a single animal has not been fully explored. In this study, we are testing the assumption that there is no significant difference among vibrissae within an individual by examining the  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  stable isotope signatures of all vibrissae in five Steller sea lion pup carcasses recovered in Alaska. We examined three hypotheses: 1) do stable isotope signatures vary with position on the cheek, 2) do stable isotope signatures vary between the left and right cheeks, and 3) do stable isotope signatures vary among individual pups? We expect no significant difference within or between cheeks, but likely significant differences between pups. If there is significant variability among vibrissae, we would advise correction factors be calculated for application to existing and new data. These results will also inform isotope studies on foraging across taxa using keratin-based tissues.

# ABSTRACTS

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