

**40: Bearded seal foraging related to benthic communities and environmental characteristics of the Chukchi Sea**

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Bearded seals are large phocids that inhabit circumpolar Arctic and Subarctic waters. They are benthic feeders, consuming epifaunal and infaunal invertebrates and demersal fishes, primarily at depths < 200 m. Our goals were to locate ecologically important areas and to identify specific factors driving bearded seal habitat selection in the northeastern Chukchi Sea from late-June to late-November. Instead of merely examining space use, we modeled the foraging movements of bearded seals as a function of specific biological and environmental features (e.g., benthic prey and sediment type), using a two-stage analysis. In the first stage, we used a multistate movement model to identify benthic foraging activity based on biotelemetry data collected from seven adult and subadult bearded seals. In the second stage, we fit point process models for resource selection using benthic prey and other environmental covariates as predictors of the foraging locations identified in the first stage. Bearded seals exhibited positive selection (i.e., preference) for a diverse array of invertebrates and fishes. For many fish, only the smaller age-classes were selected for, supporting previous observations from stomach samples. In addition, areas of mud or finer sand were selected against (i.e., avoided). Many of the taxa that were positively selected for have spatial distributions that are concentrated within 50-90 km of the Alaska coastline, a region identified as an ecological hotspot for bearded seal foraging. Indeed, this area appears to constitute a summer "smorgasbord" for these benthic foragers. In contrast, one location farther offshore (71° 20'N 163° 00'W) contained a suite of prey and sediment types avoided by bearded seals. This location is also coincident with high densities of walrus, strong currents and significant industrial activity related to oil and gas exploration. Further research will determine the extent to which these conditions caused bearded seals to avoid the area.



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**ABSTRACT BOOK**

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