

**HABITAT USE PATTERNS AND DENSITIES OF RINGED SEALS ALONG THE ALASKAN BEAUFORT SEA COAST**

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Ringed seals (*Phoca hispida*) have a circumpolar distribution and are associated with sea ice throughout their lives. They are the most abundant marine mammal along the Beaufort Sea coast of Alaska and are the principal food source of polar bears. Their abundance or distribution may be altered by industrial development. We conducted aerial surveys along the Alaskan coast of the Beaufort Sea during the end of May and beginning of June in 1996, 1997 and 1998. Two experienced primary observers counted seals using strip transect methods and one backup observer counted seals behind a primary observer using either strip transect or line transect methods. Sighting data were analyzed using a GIS (Geographical Information System) to evaluate habitat use based on ice deformation, distance from shore, distance from the shorefast/pack ice edge and bathymetry. Regression analysis was used to model seal abundance as a function of habitat factors. Seal density decreased as distance from the shorefast/pack ice edge towards shore increased. Density decreased as ice deformation increased in shorefast and pack ice combined. Seal density increased as the distance from shore increased in the shorefast ice. Comparisons of strip transect methods and line transect methods were made for data collected for 91 transects in 1997. The estimate of density for the strip transect method was 0.887 seals per km<sup>2</sup> (SE=0.067) and was not significantly different from the density estimate for the line transect method, 0.900 seals per km<sup>2</sup> (SE=0.072). The CVs for estimates of density based on line- and strip transect were similar, 0.080 and 0.075, respectively.

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**ABSTRACTS**

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