

USE OF CONTEMPORARY SPATIAL ANALYSIS TOOLS TO DELINEATE CARIBOU CALVING GROUNDS

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We used adaptive kernel techniques to provide an objective delineation of the annual and composite calving grounds of the Porcupine caribou herd (1983-1993) and the Central Arctic caribou herd (1980-1992). Analyses were based on 615 estimated calving sites obtained from radio-collared cows monitored during the calving seasons. Differences in locations of calving grounds among years and between herds were tested with Multi Response Permutation Procedures. At the 80% probability contour level, the Central Arctic calving ground consisted of two lobes situated east and west of the Sagavanirktok River. These 2 lobes merged at the 90% probability contour level. At the 90% probability contour level, the Porcupine herd calving ground consisted of a large lobe south of Barter Island in Alaska and a smaller lobe south of Herschel Island in Canada. The 2 lobes of the Central Arctic calving ground did not overlap the 90% probability contour of the Porcupine herd calving ground. Location of the annual calving ground differed among years for the Porcupine herd. First month survival of Porcupine herd calves was higher for those born in the annual central 80% probability contour level than for those born outside this area regardless of the annual location of the calving ground. First month survival of Porcupine herd calves was higher for those born in the annual central 80% probability contour level than for those born outside this area regardless of the annual location of the calving ground. First month survival of Porcupine herd calves was also higher in the central 90% probability contour level of the 1983-1993 composite calving ground than in areas outside this zone. We discuss other potential analyses based on the adaptive kernel probability contours.



Shrinking the Circumpolar Community

PROGRAM & ABSTRACTS

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