ESTIMATES OF WOLVERINE DENSITIES AND SUSTAINABLE HARVESTS IN THE NELCHINA BASIN IN SOUTHCENTRAL ALASKA

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Declining wolverine harvest trends throughout southcentral Alaska during the 1980s prompted managers to reduce the wolverine season length and bag limit and restrict harvest methods and means. In the Nelchina Basin, annual wolverine harvests significantly declined from an annual harvest average of 64 to 30 wolverines following those management actions ($p<0.001$).

To assess the impact of the current management strategy and harvest on wolverine populations in the Nelchina Basin, we estimated wolverine densities in 2 areas using a furbearer estimation technique based on probability sampling (Becker 1991). Wolverine densities were estimated as 5.4 wolverines/1,000 km^2 and 4.7 wolverines/1,000 km^2 in the Chugach Mts. (1,871 km^2) and in the Talkeetna Mt. (2,700 km^2) study areas, respectively (Becker and Gardner 1992).

Demographic data from radio-telemetry studies conducted in Alaska and Yukon (Banci 1987, Gardner 1985, and Magoun 1985) was then used in conjunction with the density estimates to construct a population model to estimate sustainable annual wolverine harvests. Population composition was assumed to be 53% adults (>2yr), 11% subadults (>1yr<2yr), and 36% juveniles (<1yr) based on the mean composition values from 45 wolverines captured in these studies. Sex and age composition of the harvest was assumed to be similar to that described for 463 wolverine carcasses collected from trappers in Alaska (Gardner 1985) and Yukon (Banci 1987). Based on the above assumptions, the model estimates the annual sustainable harvest was approximately 7-8% of the fall wolverine population. Recent wolverine harvests in portions of GMU 13 that include the study areas have exceeded 10%.

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