

Wolverine Ecology and Habitat Use in the North Columbia Mountains, B.C.

Progress Report 1998:

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We are currently completing a five-year project investigating demography and habitat use of a harvested population of wolverine in a 7000 km² area within the Kootenay Region of British Columbia. The study area contains 10 registered traplines, two National Parks, a major transportation corridor, two hydroelectric reservoirs, active logging areas and supports a substantial helicopter skiing industry. Wolverine are considered "vulnerable" by the BC Wildlife Branch and consequently vital rate data are important for evaluating management/conservation options.

A total of 39 (14F, 25M) adult and subadult wolverine have been captured over 3700 trap-nights using log box traps baited with available road-killed wildlife. Capture success varied by month and year with best results in February and March. Population estimates for the study area based on 4 years of live trapping data are 25.6 (95% CI: 15.6-55.3) and 24.0 (95% CI: 14.7-44.3) for 1996 and 1997 respectively. Five of the eight mortalities detected during the study to date have been human caused (3 commercially trapped, 1 highway kill, 1 railway kill). Annual survival rate was estimated to be 0.79 (95% CI: 0.65 - 0.92) for all age and sex categories combined.

Reproductive data are being gathered through radio-telemetry and follow-up ground investigations of breeding females after den abandonment, as well as from trapper-killed carcass submissions. In 1998, only one of the 10 radiocollared females produced young (litter of 2) that survived post den emergence. Two juvenile males (5.4, 5.8 kg) were captured and implanted with radio transmitters in June 1998 while accompanying their radio-collared mother. Ground investigation of the natal densite confirmed it to be in the ESSF biogeoclimatic zone similar to previous dens; associated with large boulder talus and woody debris. Thus far breeding females have been found only in roadless, undeveloped drainages.

Habitat use data (>1200 locations) are being collected through bi-weekly telemetry flights and snow trailing during winter. Home ranges of males ($x = 1005 \text{ km}^2$) were significantly larger than females ($x = 300 \text{ km}^2$) and National Park resident males ($x = 543 \text{ km}^2$) had smaller home ranges than non-park males ($x = 1203 \text{ km}^2$). Female home ranges did not differ significantly. At the study area scale, the distribution of wolverine use is highly clumped in four distinct utilization peaks. The two largest utilization peaks occur within Glacier and Mt. Revelstoke National Parks; disproportionate to their land base within the study area. The remaining peaks are found in the upper Bigmouth - Windy Creek area and between Downie and Goldstream. Male wolverine appear to be able to cross large reservoirs and at times, highways during lengthy dispersal movements (up to 200 km from point of capture). To our knowledge, no radio-collared females have crossed either reservoir, and only 1 female has crossed the Trans Canada highway.

The focus for the remainder of the project is on the monitoring of existing females and kits, identification and characterisation of natal dens in spring 1999 and increasing the amount of snow trailing data. A population census using motion sensitive cameras will be conducted March - April 1999. Final reports will be prepared over the next 24 months.

View a [map of the study area](#) that includes wolverine locations and polygons outlining the utilization peaks mentioned above. The *peaks* are contours produced by a computer program (ADK or Adaptive Kernel function) that outlines an animal's home range. These contours, or peaks, define regions of varying wolverine density, or intensity of use, based on the distribution of relocation points.

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