Multivariate Habitat Modeling for Mountain Caribou in the Columbia Mountains, British Columbia

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ABSTRACT

Mountain caribou, an ecotype of woodland caribou (*Rangifer tarandus caribou*), are associated with late successional forests in southeast British Columbia. Because they are listed as "vulnerable" in this province, measures for habitat management must be integrated at all levels of forest planning. We collected 2519 radio-locations for 49 animals over a 6-year period. Using univariate and multivariate logistic regression, we analyzed these data against overstory and terrain attributes to develop predictive spatial habitat models for each of 4 caribou seasons and for all seasons combined. At the stand-level, models were based on overstory and terrain attributes. At the landscape level, models were based on caribou selection for the dispersion of suitable stand and terrain conditions over 3 spatial scales. Seasonal models showed significant discriminating power in classifying caribou and random locations at both levels. Optimal model performance was achieved in classifying caribou habitat at $P > 0.6$ for all seasons at the stand level, and from $P > 0.4$ to $P > 0.6$ at the landscape level. Linked to a GIS, these models may serve as decision-support tools for forest management at strategic planning levels. However, underlying assumptions and limitations must be understood in their management application.

L. M. Darling, editor. 2000. Proceedings of a Conference on the Biology and Management of Species and Habitats at Risk, Kamloops, B.C., 15 - 19 Feb.,1999. Volume Two.
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