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MODELLING DALL SHEEP HABITAT IN THE NORTHERN YUKON

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Abstract: The identification of important wildlife habitats in the Yukon Territory has been limited by the vastness of the land, the inaccessibility, and the associated costs of conducting field work in remote locations. Demands on the land in terms of land use development, utilization of renewable and non-renewable resources, and native land claims are increasing. Land planners and wildlife managers urgently need quality base-level data at various scales to incorporate into the decision making process. This pilot project was designed to demonstrate the capabilities of GIS (Geographic Information Systems) to quantify and map habitat parameters to better protect and manage wildlife.

This project was limited to Dall sheep lambing habitats where spring lamb locations were related to slope, aspect, and distance from escape terrain and winter range. The study area was extracted from a 1:250,000 digital topographic map and the contour lines used to generate a digital elevation model defining both slope and aspect. Escape terrain was mapped and hand digitized from stereoscopic aerial photographs; point locations of sheep seen during a winter helicopter survey were used to define winter range.

With the modelling capabilities of the GIS we then predicted potential lambing habitats for a test region, using the relationships identified in the first phase. While the model needs further refinement, this project clearly demonstrated the utility and cost-effectiveness of using GIS technology to predict the occurrence of a key habitat type and thus allow managers to recommend an appropriate level of protection.