APPLICATION OF REMOTE SENSING AND TERRAIN MODELLING TO THE ANALYSIS AND MAPPING OF DALL'S SHEEP WINTER HABITAT IN THE YUKON TERRITORY.

LAUREN CROOKS, Department of Geography, University of Alberta, Edmonton, AB   T6G 2H4

Abstract: The objective of this research was to develop a digital analysis and mapping tool to assist sheep habitat managers in their assessment and management of Dall's sheep winter habitat. Remote sensing and terrain modelling techniques were employed to quantitatively characterize the four major components of Dall's sheep winter habitat: slope magnitude, slope direction, snow-free areas, and proximity to escape terrain.   Sheep winter habitat areas, identified by Yukon biologists during a March 1987 aerial survey, were digitized to produce a binary (sheep/no sheep) digital mask.   A March LANDSAT image was digitally classified to delineate snow-free areas, while derivative products from a digital elevation model supplied the topographic information.   The resultant classified LANDSAT image and the derived topographic datasets were integrated and the spatial characteristics of Dall's sheep winter habitat were determined for the masked sheep areas using overlay techniques and then described quantitatively using linear and circular statistics.