# Late-Winter Habitat Use by Mule Deer, *Odocoileus hemionus*, in Central Interior British Columbia

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In central interior British Columbia, extensive cut blocks to recover timber killed by the Mountain Pine Beetle (*Dendroctonus ponderosae*) could impact negatively on Mule Deer (*Odocoileus hemionus*) late-winter habitat. This study assessed the possibility of predicting the distribution of potential late-winter habitat for Mule Deer with the BC Vegetation Resources Inventory (VRI) dataset used to produce forestry maps. On the basis of literature review and roadside inventories in December 2004, I predicted that high-quality Mule Deer late-winter habitat would correspond to mature and old conifer-dominated stands with ≤ 20% deciduous species, a canopy closure ≥ 45%, tree heights ≥ 23 m, tree diameter at breast height ≥ 24 cm, and basal area ≥ 45 $m^2$/ha, and would be located on < 60% slopes on south, southeast, southwest or west aspects, or on flat ground. I allocated weight values to these criteria to classify map polygons into high-, medium- and low-quality polygons, and produce predictive maps of late-winter habitat use by Mule Deer. I tested my predictive habitat rating by snowtracking along 18 km of transects in February-March 2006, and 15.6 km of transects in February 2007. I recorded 31 and 12 Mule Deer tracks in 2006 and 2007, respectively, all in high-quality polygons. The observed frequency of tracks per polygon type was significantly ($P < 0.001$) different from expected. All tracks were in mature and old conifer-dominated stands including 10-60% Lodgepole Pine (*Pinus contorta*) and 10-20% Trembling Aspen (*Populus tremuloides*). This study showed that it was possible to predict the distribution of potential late-winter habitat for Mule Deer using a series of habitat criteria and the VRI dataset. The extensive harvesting of Lodgepole Pine in mixed coniferous stands will undoubtedly have a negative impact on Mule Deer late-winter habitat quality and quantity. The rating of habitat types developed in this study should be used in forest management plans to determine sites that should be protected from logging.

Key Words: Mule Deer, *Odocoileus hemionus,* Lodgepole Pine, *Pinus contorta*, Mountain Pine Beetle, *Dendroctonus ponderosae*, sub-boreal forest, winter habitat, British Columbia.