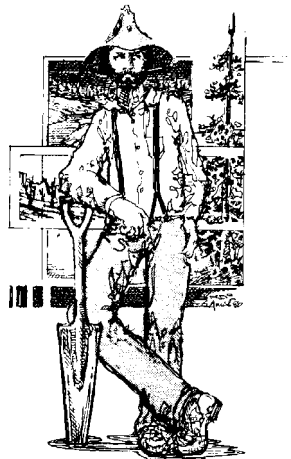


**ECOLOGICAL CLASSIFICATION
THOMPSON RIVER BASIN
MONTANA**

Prepared for:

**PLUM CREEK TIMBER
COLUMBIA FALLS, MONTANA**



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EXECUTIVE SUMMARY

An ecological classification was conducted for the Thompson River basin in northwestern Montana. The project area is 410,095 acres with a stream network of 1,326 linear miles. The ecological classification provides a framework and descriptive attributes from which interpretations regarding habitats and the effects of land uses can be interpreted.

The ecological classification facilitates analysis from several perspectives. Hierarchical levels include broad classifications (Omernik 1987; Bailey 1995), geologic district, subsection, landtype association, landtype, habitat type group, valley-bottom type and valley-bottom habitat. *Italics* are used in this report for names of classes of all hierarchical levels. Spatial attributes include elevation, slope, aspect, annual precipitation, ownership and stream parameters (length, stream order, flow regime sinuosity and grade). Aquatic features measured along transects were also integrated. Spatial attributes can be summarized for any combination of the hierarchical layers.

Thompson River basin falls within a single ecoregion as defined by Omernik -- the *Northern Rockies Ecoregion*. It includes parts of two sections of the *Northern Rocky Mountain Forest-Steppe-Coniferous Forest-Alpine Meadow Province* defined by Bailey: 1) *Flathead Valley Section*; and 2) *Belt Mountain Section*. A single geologic district was identified (*metasedimentary*). Four subsections were identified: 1) *alpine glaciated lands*; 2) *fluvial lands*; 3) *continental glaciated erosional lands*; and 4) *continental glaciated depositional lands*. Four landtype associations were identified in *alpine glaciated lands*: 1) *cirque and rocky ridge*; 2) *glacial basin*; 3) *glacial trough*; and 4) *moraine*. Three landtype associations comprise *fluvial lands*: 1) *mountain ridge*; 2) *mountain slope*; and 3) *breakland*. A single dominant landtype association was identified in *continental glaciated erosional lands* -- *continental glacial ridge and slope*. Two landtype associations are dominant in *continental glaciated depositional lands*: 1) *high terrace*; and 2) *floodplain and*

alluvium. Landtypes were mapped by the Kootenai and Lolo National Forests. More detailed mapping of soil types was conducted by the Natural Resource Conservation Service (NRCS) for private lands in the basin.

The valley-bottom landtype associated with streams was delineated and further divided into valley-bottom types (VBTs), which generally correlate with subsections. Valley-bottom habitats were also mapped. Vegetation response units (VRUs) corollary to habitat type and landtype association were also identified.

A Geographical Information System (GIS) was used to compile hierarchical map layers, plot maps and to output map data summaries. Maps, descriptions and data summaries are provided for each hierarchical level. Digital GIS map layers were also provided to Plum Creek Timber.