

# Vegetation of Waterton-Glacier International Peace Park

Waterton-Glacier International Peace Park Vegetation Mapping Project



This map illustrates vegetation and land cover features of Waterton-Glacier International Peace Park and immediate surroundings. The spatial database used to compose this map was produced for the USGS NPS Vegetation Mapping Program. The Glacier National Park (GNP) portions were developed by the USGS Upper Midwest Environmental Science Center (UMESC). The Waterton Lakes National Park (WLNK) portions were developed by various contractors to WLNK, with the UMESC providing final database development to synchronize the two spatial layers. NatureServe and the Montana Natural Heritage Program developed the plant community classification based on the National Vegetation Classification (NVC) System.

These spatial databases were derived from the stereo interpretation of August 1999 true color aerial photographs (1:15,840-scale). Prior to mapping, photointerpreters performed fieldwork to learn photographic appearances of vegetation types and to link map classes to NVC plant communities (associations). The interpreted data were orthorectified using OrthoMapper Photogrammetric software, and subsequently digitized into two vector spatial database layers; one of each park unit. Polygons and attributes between the two layers match seamlessly. The standard minimum mapping unit applied was 0.5 hectares. Each spatial database layer is projected in Universal Transverse Mercator, Zone 12, using the North American Datum of 1983.

This map layout shows aggregates of map classes, summarized with an estimation of NVC Groups (Level 6 of Version 2 - Working Draft). The spatial database offers finer details than shown on this map layout (e.g. map classes, relationship to NVC alliance and association types, physiognomic features of vegetation).

The spatial database reflects conditions existing at the time of aerial photography. A margin of error is inherent with interpreting aerial photographs. Based on results of thematic accuracy assessments, the estimated overall accuracy for map classes representing NVC plant communities is 87.9% (kappa index of 87.4%) for the GNP vegetation layer, and 77.9% (kappa index of 76.8%) for the WLNK vegetation layer. Those using the database should determine for themselves the fitness of the data prior to use.

The spatial database layers, along with supporting information, is located on the Internet at <http://biology.usgs.gov/npsveg>.



Map Composition: August 2007  
Vegetation Layer: Based on August 1999 aerial photographs

Continental Divide

Key to Vegetation of Waterton-Glacier International Peace Park

Aggregate of Map Classes - NVC GROUP (Version 2 - Level 6 estimate)

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|--|--|
| Rocky Mountain Subalpine Mesic Conifer Forest and Woodland           | Rocky Mountain Early Successional Forest, Shrubland, and Forb Meadow |
| Rocky Mountain Subalpine Whitebark Pine and Subalpine Larch Woodland | Rocky Mountain Subalpine and Montane Riparian Shrubland              |
| Rocky Mountain Subboreal and Montane Conifer Forest                  | Rocky Mountain Wet Meadow and Snowbed                                |
| Rocky Mountain Subalpine (Cool) Deciduous Broadleaf and Mixed Forest | Western North America Emergent Marsh                                 |
| Rocky Mountain Montane Limber Pine - Juniper Woodland                | Rocky Mountain Shoreline Vegetation                                  |
| Rocky Mountain Mesic Montane Conifer Forest                          | Inter-Mountain Basin Montane Sagebrush Steppe                        |
| Northern Rocky Mountain Ponderosa Pine Woodland                      | Rocky Mountain Alpine Dry Scrub and Fell-field                       |
| Rocky Mountain Cedar - Hemlock Rainforest                            | Rocky Mountain Alpine Meadow   |
| Northern Rocky Mountain Conifer Swamp and Riparian Forest            | Rocky Mountain Alpine Cliff, Scree, and Other Rock Vegetation        |
| Rocky Mountain Conifer Swamp and Riparian Forest                     | Temperate Row Crop/Close Grown Crop                                  |
| Northern Rocky Mountain Montane Riparian Forest                      | Mountain Perennial Glacier and Snowfield (non-NVC)                   |
| Northern Rocky Mountain Avalanche Chute Shrubland                    | Open Water Stream/River and Lake/Pond (non-NVC)                      |
| Northern Rocky Mountain Lower Montane Deciduous Shrubland            | Developed Area (non-NVC)   |
| Rocky Mountain Montane Grassland                                     | Other Cultural Area (non-NVC)  |

