

M020: Rocky Mountain Subalpine-Upper Montane Forest & Woodland

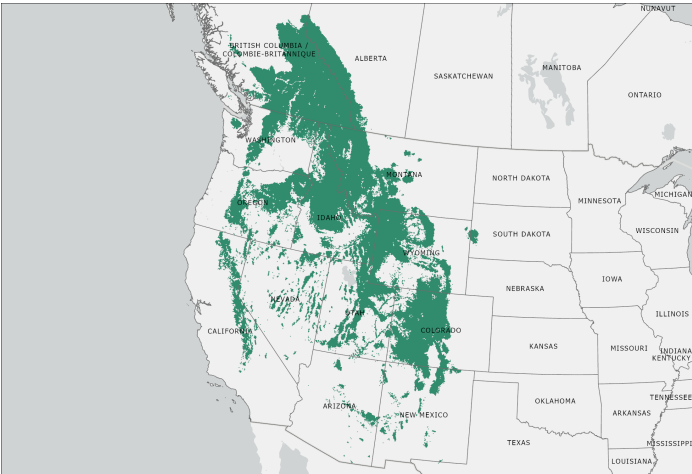
Scientific Name: Rocky Mountain *Abies lasiocarpa* - *Picea engelmannii* Forest & Woodland Macrogroup

SUMMARY

This is a diverse macrogroup of high montane and subalpine forests and woodland found throughout the Rocky Mountain regions of the western U.S. and southwestern Canada. Characteristic trees include *Abies lasiocarpa*, *Larix lyallii*, *Picea engelmannii*, *Pinus albicaulis*, *Pinus aristata*, *Pinus contorta*, *Pinus flexilis*, *Pinus longaeva*, *Populus tremuloides*, and *Tsuga mertensiana*.



Location: Loomis Natural Resources Conservation Area, WA. Photo by Washington Natural Heritage Program.



Macrogroup distribution map, rolled up from mapped component groups.

COMPONENT GROUPS

Group Name (*=mapped)	Elcode	Rounded Grank	Distribution in US and Canada
Rocky Mountain Subalpine Moist-Mesic Spruce - Fir Forest*	G218	G4	US: AZ, CO, ID, MT, NM, NV, OR, UT, WA, WY; Canada: AB, BC
Rocky Mountain Subalpine Dry-mesic Spruce - Fir Forest*	G219	G4	US: AZ, CO, ID, MT, NM, NV, OR, UT, WA, WY; Canada: AB, BC
Rocky Mountain Lodgepole Pine Forest & Woodland*	G220	G4	US: CO, ID, MT, OR, UT, WA, WY; Canada: AB, BC, YT
Rocky Mountain-Interior Subalpine-Montane Aspen Forest*	G222	G4	US: AZ, CA, CO, ID, MT, NM, NV, OR, SD, UT, WA, WY; Canada: AB, SK?
Rocky Mountain Montane-Subalpine Limber Pine Woodland*	G101	GNR	US: CA, CO, ID, MT, NM, NV, OR, UT, WY; Canada: AB
Central Rocky Mountain Whitebark Pine - Subalpine Larch Woodland*	G223	G4	US: ID, MT, NV, OR, WA, WY; Canada: AB, BC

BIOME: TT2 Temperate-Boreal Forest & Woodland

Division: TT2.b3.Nd Western Cordilleran Subalpine-High Montane Forest & Woodland

M020: Rocky Mountain Subalpine-Upper Montane Forest & Woodland, continued

TYPE CONCEPT

This diverse forest and woodland macrogroup of the Rocky Mountain region of the western U.S. and southern Canada is characteristic of the higher elevations (upper montane to subalpine zones) of this large region. Generally these forests and woodlands form the uppermost montane forests of the Rocky Mountains, including the upper treeline ecotone with the alpine. They are mostly composed of evergreen conifers, but some broad-leaved cold-deciduous trees are often found, and (very locally) cold-deciduous conifers. The macrogroup ranges from nearly closed-canopy forests to very open or patchy short-statured woodlands, clumps of tree islands or ribbons with intervening grasslands or shrublands. At the highest settings or those most exposed to wind, the trees can be flagged or damaged from blowing snow and ice-crystals and severe cold. Shrub and herb layers vary widely, with tall or short cold-deciduous or evergreen shrubs dominating the undergrowth, or in some cases with few or no shrubs and perennial forbs, grasses or sedges the predominant growth forms. Characteristic trees include *Abies lasiocarpa*, *Larix lyallii*, *Picea engelmannii*, *Pinus albicaulis*, *Pinus aristata*, *Pinus contorta*, *Pinus flexilis*, *Pinus longaeva*, *Populus tremuloides*, and *Tsuga mertensiana* (which is also important in Pacific maritime macrogroups). Shrub and herb taxa are highly diverse. These are the matrix forests of the upper montane and subalpine zone of this region, with elevations ranging from 900 m

(2950 feet) in the north to 3670 m (12,000 feet) in the south and for the subalpine-alpine transitions. They often form the upper-treeline transition to alpine tundra or dwarf-shrublands. Topography is variable; these forests or woodlands are found on gentle to very steep mountain slopes, high-elevation ridgetops and upper slopes, shoulder slopes, cirque headwalls, plateau-like surfaces, basins, toeslopes, alluvial terraces, well-drained benches, and inactive stream terraces. Patterning of which forest types occur in some locations is driven by the interaction between snow deposition, desiccating winds, soil and substrate characteristics, and the interacting effects of precipitation, temperature and both latitude and elevation/aspect. Occurrences at high elevations are restricted by cold temperatures and are found on warmer southern aspects. At lower elevations, occurrences are restricted by lack of moisture and are found on cooler north aspects and mesic microsites. Occurrences in this macrogroup often originate from, and are likely maintained by, stand-replacing disturbances such as avalanche, crown fire, insect outbreaks, disease, occasional windthrow, or clearcutting by man or flooding by beaver. Fire regimes are generally mixed-severity or stand-replacing, and of long return intervals, occurring from 150 to 500 years. Insect outbreaks are more frequent, every 30-50 years in some types, and can alter both the structure and composition of stands.

AUTHORSHIP

Primary Concept Source: R.F. Daubenmire (1943)

Author of Description: M.S. Reid, K.A. Schulz, and M.E. Hall

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CITATION

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For more information view on [USNVC.org](https://usnvc.org) or [NatureServe Explorer](#)