

EXAMPLES OF FOREST HABITAT TYPES IN MONTANA

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(This group of images was presented as a poster in the printed version of this document.)



***Pinus flexilis/Agropyron spicatum* h.t.**

Dry, rocky W. slope (4,900 ft) near Whitehall supporting *Pinus flexilis*, *Juniperus scopulorum*, and scattered *Pseudotsuga*.



***Pseudotsuga menziesii/Vaccinium globulare* h.t.**

(*Arctostaphylos* phase) S. exposure (4,700 ft) in a relatively moist area of west-central Montana. Seral *Pinus ponderosa* is an overstory dominant; *Vaccinium* and *Xerophyllum* dominate the undergrowth.



***Pinus ponderosa* / *Agropyron spicatum* h.t.**

Steep SW. slope (4,500 ft) near Missoula. *Pinus ponderosa* is a long-lived seral dominant.



***Pseudotsuga menziesii* / *Linnaea borealis* h.t.**

(*Symphoricarpos* phase) Valley bottom (2,600 ft) in NW. Montana. *Larix occidentalis* is the dominant seral tree.



***Pinus ponderosa/Prunus virginiana* h.t.**

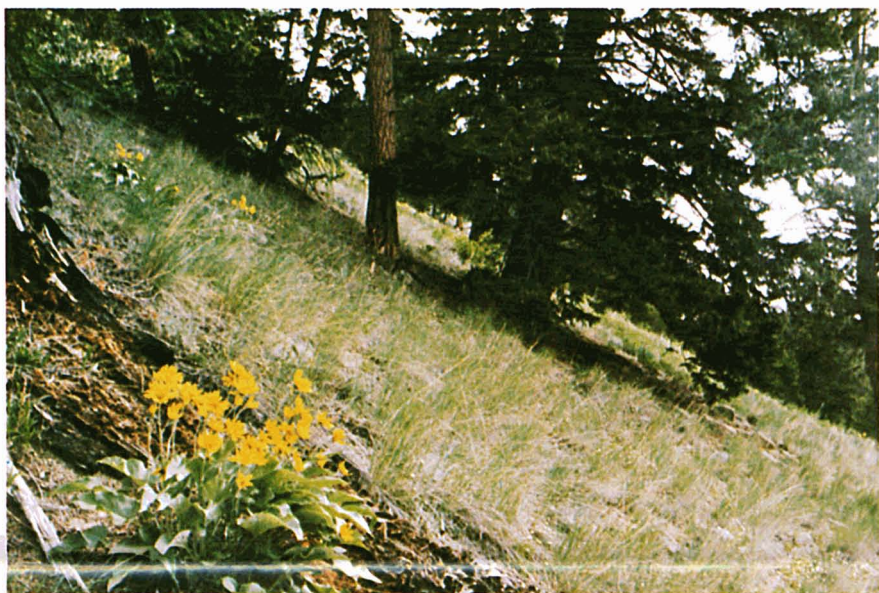
(*Prunus* phase) Lower N. slope (4,000 ft) near Ashland.

Prunus has been browsed back by deer.



***Pseudotsuga menziesii/Symphoricarpos albus* h.t.**

(*Calamagrostis* phase) W. slope (7,050 ft) in south-central Montana. *Pseudotsuga* is dominant in all size classes. Undergrowth is dominated by *Symphoricarpos*, *Calamagrostis*, and *Carex geyeri*, with numerous forbs.



***Pseudotsuga menziesii*/*Agropyron spicatum* h.t.**

Steep S. slope (5,650 ft) in west-central Montana. Soil is loose and gravelly; much of ground surface is exposed, partly because of grazing.



***Pseudotsuga menziesii*/*Calamagrostis rubescens* h.t.**

(*Calamagrostis* phase) SE. slope (6,300 ft) in west-central Montana. Typical park-like stand of old-growth *Pseudotsuga*, with dense mat of *Calamagrostis* and *Arnica cordifolia* beneath.



Pseudotsuga menziesii/*Vaccinium caespitosum* h.t.

Valley bench (3,200 ft) in northwestern Montana. Old-growth *Pinus ponderosa* is being replaced by *Pseudotsuga* regeneration.



Pseudotsuga menziesii/*Carex geyeri* h.t.

S. slope (7,650 ft) in SW. Montana. *Pseudotsuga* and *Pinus albicaulis* dominate this stand, with *Carex geyeri* and *Aster conspicuus* dominating the undergrowth.



***Pseudotsuga menziesii*/*Physocarpus malvaceus* h.t.**

(*Calamagrostis* phase) Steep SW. exposure (4,000 ft) near Missoula. *Pinus ponderosa* is the overstory dominant; *Physocarpus* is patchy; *Calamagrostis*, *Carex geyeri*, *Agropyron*, and *Balsamorhiza* dominate the undergrowth.



***Pseudotsuga menziesii*/*Arnica cordifolia* h.t.**

NW. aspect (7,050 ft) in a dry mountain range near Whitehall. The nearly pure stand of *Pseudotsuga* has a sparse undergrowth of *Arnica cordifolia*.



***Picea/Equisetum arvense* h.t.**

Wet valley bottom site (5,600 ft) with deep alluvial silt in central Montana. *Picea* is dominant in all size classes; undergrowth is dominated by *Equisetum arvense*.



***Tsuga heterophylla/Clintonia uniflora* h.t.**

Gentle E. slope (4,000 ft) in NW. Montana. Seral *Pseudotsuga* and *Pinus monticola* (right center) occur here with *Thuja* and *Tsuga*.



***Picea/Clintonia uniflora* h.t.**

(*Clintonia* phase) Moist valley bottom (3,000 ft) in NW. Montana. Seral *Larix occidentalis* dominates the overstory; *Pseudotsuga* occurs in all layers, and *Picea* forms most of the regeneration.



***Abies lasiocarpa/Clintonia uniflora* h.t.**

(*Clintonia* phase) Steep SE. slope (5,900 ft) in NW. Montana near the upper limit of this h.t. Stand is dominated by seral *Pinus contorta* and *Picea*, which show scars from a ground fire. *Arnica latifolia* is the dominant undergrowth species.



***Picea/Linnaea borealis* h.t.**

Lower N. slope in canyon (5,700 ft) in south-central Montana. *Pinus contorta* and *Pseudotsuga* are seral species being replaced by *Picea*. *Vaccinium globulare* and *Linnaea* dominate the undergrowth.



***Abies lasiocarpa/Galium triflorum* h.t.**

Streamside bench (5,000 ft) in west-central Montana. This near-climax stand is dominated by *Abies lasiocarpa* and *Picea*; *Coptis occidentalis* and *Linnaea borealis* dominate the undergrowth.



***Abies grandis/Clintonia uniflora* h.t.**

(*Aralia* phase) Valley bottom (2,900 ft) near Flathead Lake. Scattered seral *Pseudotsuga* and *Larix occidentalis* remain in the stand, which is now dominated by *Abies grandis*.
Aralia and *Disporum hookeri* are the tall forbs.



***Abies lasiocarpa/Vaccinium caespitosum* h.t.**

Flat upland site (6,400 ft) in central Montana. *Pinus contorta* dominates this stand.
Principal undergrowth species are *Calamagrostis rubescens* and *Vaccinium caespitosum*.



***Thuja plicata/Clintonia uniflora* h.t.**

(*Menziesia* phase) High-elevation (5,200 ft) canyon north of Missoula. Seral *Larix* and *Picea* can be seen along with *Thuja*. Undergrowth is dominated by *Menziesia* and *Taxus brevifolia*.



***Abies lasiocarpa/Calamagrostis canadensis* h.t.**

(*Calamagrostis* phase) Seepage area on a S. slope (8,100 ft) in SW. Montana. *Picea* is the dominant tree but most regeneration is *Abies lasiocarpa*; *Veratrum viride* and *Calamagrostis canadensis* dominate the undergrowth.



***Thuja plicata*/*Oplopanax horridum* h.t.**

A north slope (4,300 ft) with frequent seepage areas in NW. Montana. *Tsuga heterophylla* is the dominant tree in this near-climax stand. *Oplopanax* and *Athyrium filix-femina* dominate the undergrowth.



***Abies lasiocarpa*/*Linnaea borealis* h.t.**

(*Vaccinium scoparium* phase) Streamside bench (6,600 ft) in south-central Montana. *Picea* dominates all tree layers, but *Abies* is also regenerating successfully; undergrowth is mostly *Linnaea*, *Vaccinium scoparium*, *Aster conspicuus*, and *Calamagrostis rubescens*.



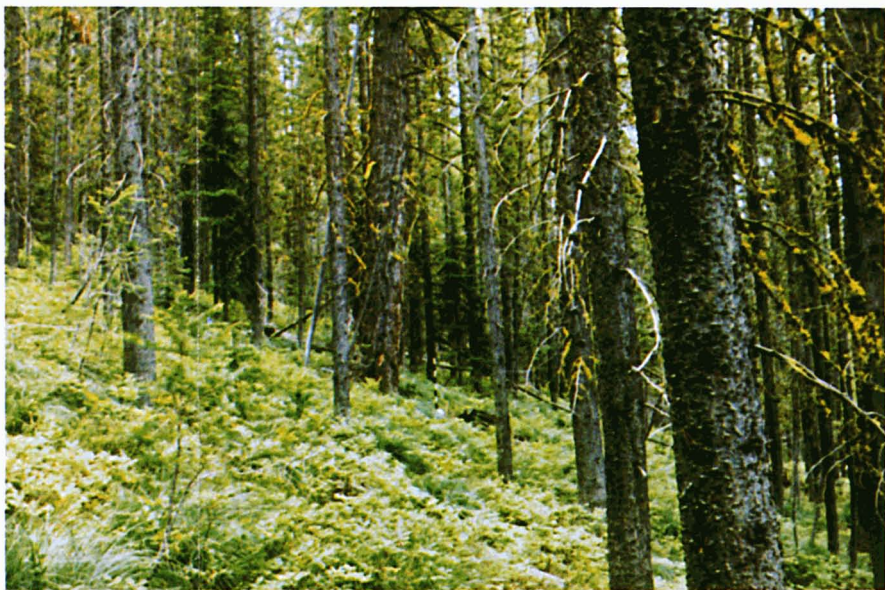
***Abies lasiocarpa*/*Menziesia ferruginea* h.t.**

Steep N. slope (5,700 ft) in NW. Montana. *Larix occidentalis*, *Picea*, and *Pinus monticola* are the old-growth dominants, but only *Abies* is regenerating. *Menziesia* (5 ft) and *Vaccinium globulare* (2 ft) form the shrub layer.



***Abies lasiocarpa*-*Pinus albicaulis*/*Vaccinium scoparium* h.t.**

Gentle SE. slope (8,500 ft) near Butte. *Pinus albicaulis* and *Picea* dominate this 300-year-old stand; however, *Abies* is increasing in the understory. The layer of *Vaccinium* is about 6 inches high.



***Abies lasiocarpa/Xerophyllum tenax* h.t.**

(*Vaccinium globulare* phase) SE. slope (6,800 ft) in west-central Montana. Only scattered *Pseudotsuga* (center) and *Larix occidentalis* survived the fire that gave rise to this stand of *Pinus contorta* about 75 years ago. *Abies* is now regenerating. Undergrowth is largely *Vaccinium globulare* and *Xerophyllum*.



***Pinus albicaulis-Abies lasiocarpa* h.t.s.**

Ridgetop (9,200 ft) in SW. Montana. Old-growth *Pinus albicaulis* is about 30 feet tall; *Abies* is shorter; an occasional *Picea* achieves 40 feet. *Vaccinium scoparium*, *Phyllodoce empetriformis*, and *Antennaria lanata* dominate the undergrowth.



***Abies lasiocarpa/Vaccinium globulare* h.t.**

N. slope (7,100 ft) in central Montana. *Picea* and *Abies lasiocarpa* dominate this stand, but only *Abies* is regenerating; *Vaccinium globulare* forms a dense layer 1 to 1½ ft high.



***Larix lyallii-Abies lasiocarpa* h.t.s.**

N. slope (8,400 ft) in west-central Montana. Slow-growing *Larix lyallii* has little competition on this moist granitic site. *Phyllodoce empetriformis* and *Luzula hitchcockii* dominate beneath the 400- to 600-year-old trees.



***Abies lasiocarpa/Vaccinium scoparium* h.t.**

(*Vaccinium scoparium* phase) Flat upland site (7,200 ft) in central Montana. This *Pinus contorta* stand arose after an intense fire a century ago. *Abies lasiocarpa* is regenerating. *Vaccinium scoparium* dominates the undergrowth.



***Pinus albicaulis* h.t.s.**

SW. slope on limestone (7,900 ft) in central Montana. *Pinus albicaulis* is the only successful tree in this old-growth stand; the site is above the limits of *Pseudotsuga*. A mixture of *Poa nervosa* and forbs form the undergrowth.



***Abies lasiocarpa*/*Calamagrostis rubescens* h.t.**

N. Slope (7,650 ft) in SW. Montana. *Pinus contorta* stand (70 years old) arose after fire. *Abies* is regenerating. A mat of *Calamagrostis rubescens* makes up the undergrowth.



***Pinus contorta*/*Purshia tridentata* h.t.**

Flat ground (6,600 ft) on obsidian sand substrate at West Yellowstone. *Pinus contorta* is the only tree; *Purshia* and scattered forbs grow beneath.



***Abies lasiocarpa*/*Arnica cordifolia* h.t.**

N. slope (7,750 ft) in SW. Montana. Old-growth *Pinus contorta*, *Picea*, and *Pseudotsuga* are being replaced by *Abies lasiocarpa*. *Arnica cordifolia* and *Thalictrum occidentale* are the only conspicuous undergrowth plants.



Forested Scree

Steep S. slope (3,100 ft) in west-central Montana composed of unstable, fine rock. Scattered *Pinus ponderosa* and *Pseudotsuga* occur with a sparse undergrowth primarily of *Amelanchier alnifolia*, *Chrysothamnus nauseosus*, and *Artemisia dracunculus*.