

Foothills

1. Lower Foothills:

The Lower Foothills Subregion generally occurs on rolling topography created by the deformed bedrock along edge of the Rocky Mountains. Lower elevations range from about 1250 m in the south, to about 700 m near Lesser Slave Lake, 500 m west of Manning, and to about 350 m at the northern end near Rainbow Lake. Upper elevational limits range from about 1450 m in the south to 1000 m in the north.

Climate

The climatic regime is continental. Mean annual precipitation ranges from 285 mm to 756 mm with an average of about 465 mm, about two-thirds of which falls in May - September. From east to west and from south to north, there are increases in precipitation. The mean May - September temperature is 11-13 °C. With cool summer temperatures and much of the precipitation coming during the growing season, evapotranspiration deficits are generally near zero during the growing season. Although this subregion is somewhat cooler in summer than the adjacent, lower elevation Boreal Forest subregions, it is warmer in winter because it is often not influenced by cold Arctic air masses.

Soils

Soils of upland forests are predominantly Luvisolics and Brunisolics with Gleyed Luvisols and Gleysolics in more poorly drained sites. Organic soils are common in depressional sites, and Regosolics occur along stream valleys and on steeper slopes.

Vegetation

The forests reflect the transitional nature of this subregion in which mixed forests of *Picea glauca* (white spruce), *Picea mariana* (black spruce), *Pinus contorta* (lodgepole pine), *Abies balsamea* (balsam fir), *Populus tremuloides* (aspen), *Betula papyrifera* (paper birch), and *Populus balsamifera* (balsam poplar) occur.

At lower elevations and along the eastern edge of the subregion, introgressive hybridization between lodgepole pine, a cordilleran species, and jack pine (*Pinus banksiana*), a boreal species, occurs.

Lodgepole pine forests occupy extensive portions of the upland in this subregion, especially following fire. Understory species on drier sites include *Shepherdia canadensis* (buffaloberry), *Spiraea betulifolia* (white meadowsweet), *Juniperus* spp. (junipers), *Arctostaphylos uva-ursi* (bearberry), and *Vaccinium myrtilloides* (low bilberry). On more mesic sites, white spruce and aspen are more frequent in the tree layer and the understory contains a large number of species including *Rosa acicularis* (prickly rose), *Ledum groenlandicum* (Labrador tea), *Cornus canadensis* (bunchberry), *Linnaea borealis* (twin flower), *Epilobium angustifolium* (fireweed), *Vaccinium vitis-idaea* (bog cranberry), and the feathermosses (*Hylocomium splendens*, *Pleurozium schreberi*, *Ptilium crista-castrensis*). Successionally, white spruce and, in the north, black spruce, likely will eventually replace lodgepole pine and aspen in these communities in the absence of fire.

Black spruce forests occur on moist upland sites in the north but the species essentially does not occur south of the Red Deer River, although one small, disjunct stand is known near Bragg Creek. Black spruce also occurs on wet Organic soils (muskegs). Typical understory species include *Ledum groenlandicum* (Labrador tea), *Betula* spp. (dwarf birch), *Lonicera involucrata* (bracted honeysuckle), *Equisetum* spp. (horsetails), *Mitella nuda* (bishop's cap), *Linnaea borealis* (twinflower), *Sphagnum* spp. (peat mosses), and the brown mosses (*Aulacomnium palustre*, *Tomenthypnum nitens*).

Fens, both patterned and unpatterned, are common in much of this subregion. These communities typically contain scattered trees of black spruce and tamarack (*Larix laricina*) with an understory of *Betula* spp. (dwarf birch), *Ledum groenlandicum* (Labrador tea), *Salix* spp. (willow), *Carex* spp. (sedges), *Menyanthes trifoliata* (bog bean), *Deschampsia caespitosa* (tufted hairgrass), and both peat and brown mosses (*Sphagnum* spp., *Tomenthypnum nitens*, *Aulacomnium palustre*).

Wildlife

Species of coniferous forests include boreal chickadee, spruce grouse, ruby-crowned kinglet, white-winged crossbill, and red squirrel.

Areas with deciduous forests have diverse animal communities including ruffed grouse, warbling vireo, black-capped chickadee and Tennessee warbler. Along the boundary with the Central Mixedwood Subregion, species more typical of the boreal forest occur including moose, yellow-bellied sapsucker (northern race), rose-breasted grosbeak and purple finch.

2. *Upper Foothills:*

The Upper Foothills Subregion occurs on strongly rolling topography along the eastern edge of the Rocky Mountains from about the Bow River north to the Grande Cache area, with disjunct occurrences in the Swan Hills and Clear Hills. The subregion is generally between the Lower Foothills and Subalpine subregions with an upper elevational limit of about 1500 m in the south to 1000 m in the north.

Climate

This subregion has the highest summer precipitation in Alberta at about 340 mm and has a mean annual precipitation of about 540 mm. July is the wettest month and a moisture surplus probably occurs during much of the growing season. The mean May - September temperature is about 10 - 12 °C. The winters are colder than the Lower Foothills Subregion but the Upper Foothills Subregion generally is similarly little affected by cold Arctic air masses.

Soils

Soils of upland sites are typically Luvisolics and Brunisolics with Gleysolics and Organics in wet sites.

Vegetation

Upland forests of the Upper Foothills Subregion are nearly all coniferous and dominated by *Picea glauca* (white spruce), *Picea mariana* (black spruce), *Pinus contorta* (lodgepole pine), and, occasionally, *Abies lasiocarpa* (subalpine fir).

Lodgepole pine forests occupy extensive portions of the subregion on upland sites. Understory species typically include *Menziesia ferruginea* (false azalea), *Shepherdia canadensis* (buffaloberry), *Rosa acicularis* (prickly rose), *Ledum groenlandicum* (Labrador tea), *Cornus canadensis* (bunchberry), *Linnaea borealis* (twin flower), *Epilobium angustifolium* (fireweed), *Vaccinium vitis-idaea* (bog cranberry), and the feathermosses (*Hylocomium splendens*, *Pleurozium schreberi*, *Ptilium crista-castrensis*). Successionally, white spruce and black spruce likely will eventually replace lodgepole pine in these communities in the absence of fire.

Black spruce dominates on wet sites with Organic and Gleysolic soils. Typical understory species include *Ledum groenlandicum* (Labrador tea), *Betula* spp. (dwarf birch), *Lonicera involucrata* (bracted honeysuckle), *Equisetum* spp. (horsetails), *Mitella nuda* (bishop's cap), *Linnaea borealis* (twinflower), *Sphagnum* spp. (peat mosses), and brown mosses (*Aulacomnium palustre*, *Tomenthypnum nitens*).

Wildlife

Animals of the Upper Foothills Subregion are similar to those of coniferous forests of the Lower Foothills and Subalpine Subregions. These include pine siskin, yellow-rumped warbler, ruby-crowned kinglet, white-crowned sparrow and varied thrush. Elk and both black and grizzly bear are also characteristic. Species diversity is lower here, generally, than in the Lower Foothills Subregion because of a lower vegetational diversity, including few deciduous forest stands.