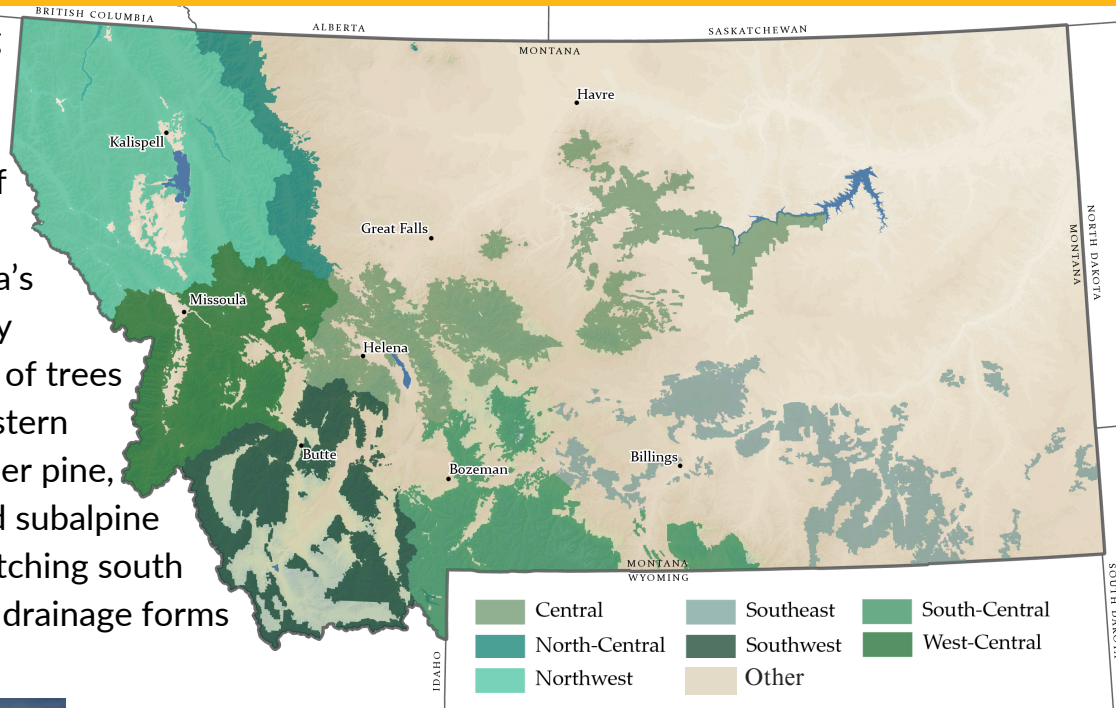


The Southwestern Forest Region



What trees are around you?

The answer changes depending on climate, topography, and natural disturbances. Together, these factors create a mosaic of different forest types called forest regions. Each of Montana's eight regions is characterized by certain types and compositions of trees and other plants. The Southwestern Forest Region includes the limber pine, lodgepole pine, Douglas-fir, and subalpine fir forests surrounding and stretching south from Butte. The Madison River drainage forms the eastern boundary.



1 Grasslands and steppes dominate the Southwestern Forest Region. There are few forests below 6,000 ft in elevation. Some areas, such as south- and west-facing slopes, remain tree-less at all elevations.



2 Forests start to become more common between 6,000 and 7,000 ft in elevation. Limber pine and Douglas-fir are the most common species.



3 Above 7,000 ft in elevation, lodgepole pine, Engelmann spruce, subalpine fir, and whitebark pine take over the forest before petering out around 9,500 ft, where conditions become too harsh to support forest growth.

Topography

Imagine a trip up a mountainside in southwestern Montana. The forest changes based on elevation, steepness, and direction. Even small changes can make a big difference in how much water, sunlight, or wind a certain area receives, and what types of trees are able to grow. The pictures above illustrate how elevation affects forests in the Southwestern Forest Region.

The Southwestern Forest Region includes the cultural homelands of the Ktunaxa ṭamakʔis, Shoshone-Bannock, Séliš-Qłispé, Cayuse, Umatilla and Walla Walla, Niitsitpiis-stahkoií ᠨᠢᠰᠢᠲᠢᠫᠤᠢᠰᠲᠠᠬᠤᠢᠣᠢ (Blackfoot/Niitsitapi ᠨᠢᠰᠢᠲᠢᠭᠢᠫᠤᠢ) peoples.



Compared with surrounding regions, the climate of the Southwestern Forest Region is cold and dry, limiting the range of forests. Some valleys in the region average less than 12 inches of precipitation a year. The frost-tolerant lodgepole pine is one of the most common trees in the region.

Disturbances

While topography and climate change forests over thousands of years, natural disturbances can change the way a forest looks in months, days, or even hours. Fire, pests, disease, avalanches, and windstorms are natural parts of the Southwestern Forest Region. Often these disturbances help keep forests healthy by creating new space for trees to grow and returning nutrients to the soil. After a major disturbance like a fire, the forest grows back in stages over many years. This process is called succession. The pictures to the right depict a typical succession cycle for a lodgepole pine forest in the Southwestern Forest Region. Forest regions are determined by the types of trees present in the climax forest, but it is common to see many stages of succession occurring at the same time.



1 Disturbance

Disturbances occur at different scales. For example, the grasslands of the Southwestern Forest Region historically burned every 3-20 years. In lodgepole pine forests, high-severity fires were common, occurring every 100+ years with low- to mixed-severity fires less frequent.

2 Pioneer Species

The first plants to grow after a major disturbance are called pioneer species. Many wildflowers like lupine and fireweed are pioneer species, as well as a variety of grasses. Lodgepole pines often have serotinous cones that only open in extreme heat. As a result, lodgepole pine seedlings also quickly spring up following a high-severity fire.



3 Pole Stand

As years pass, lodgepole pine saplings become thicker and taller. Young stands are often called "doghair stands" to reflect the closeknit nature of the growing trees. At this point, the trees begin to shade out grasses, flowers, and shrubs.

4 Climax Forest

After decades, the trees that first repopulated the disturbance mature. This stage is called the "climax forest" and will remain until the next large disturbance. In the Southwestern Forest Region, some areas may never grow forests; here, grasslands represent the climax stage.



Resources

Read more about disturbance and succession in "Fire Ecology of Montana Forest Habitat Types East of the Continental Divide" at: <https://www.fs.usda.gov/research/treesearch/29570>

Read more about the different forest regions in "Forest Regions of Montana" at: <https://www.fs.usda.gov/research/treesearch/32532>

