

Key to the Conifer Trees of Wyoming



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Adapted from Dorn, R.D. Vascular Plants of Wyoming, 3rd ed. 2001

Scientific names:

Abies lasiocarpa.....Subalpine fir
Juniperus osteosperum.....Utah juniper
Juniperus scopulorum.....Rocky Mountain juniper
Picea engelmannii.....Engelmann spruce
Picea glauca.....White spruce
Picea pungens.....Blue spruce
Pinus albicaulis.....Whitebark pine
Pinus contorta.....Lodgepole pine
Pinus edulis.....Pinyon pine
Pinus flexilis.....Limber pine
Pinus ponderosa.....Ponderosa pine
Pseudotsuga menziesii.....Douglas fir

1. Leaves short and scale-like, cones like berries.....2 (junipers)
1. Leaves (needles) much longer than wide3
 2. Leaves longer than wide, edges smooth; berries usually with 2 seeds.....**Rocky Mountain Juniper**
 2. Leaf length and width approximately equal, edges not smooth; berries usually with one seed.....**Utah Juniper**
3. Needles attached to twig in bundles...4 (pines)
3. Needles attached singly to twig.....8
 4. Needles in bundles of two or three.....5
 4. Needles in bundles of five.....7
5. Needles and cones are 2 1/2 inches or greater in length.....**Ponderosa Pine**



Mature spruce cones hang downward (unlike the cones of sub-alpine fir). Pictured are blue spruce (right), largest of the three), white spruce (below right), and engelmann spruce.



5. Needles in bundles of two, needles and cones smaller than 2 ½ inches.....6
 6. Cones with relatively few, blunt scales and large seeds.....**Pinyon Pine**
 6. Cones with many sharply-spiked scales and small, winged seeds.....**Lodgepole Pine**
7. Cones round, less than 3 inches long, usually falling apart on tree.....**Whitebark Pine**
7. Cones elongate, greater than 3 inches, remaining intact.....**Limber Pine**
 8. Needles stiff, sharp, and with square cross-section (can be rolled between fingers), twigs rough where needles have fallen.....9 (spruces)
 8. Needles relatively soft and blunt, and flat (can't be rolled), twigs relatively smooth where needles have fallen.....11 (firs and pseudo-firs)



Spruce and fir cones have scales that are much thinner than the woody scales of pine cones. The cones of douglas fir (left) have distinctive bracts that look like the rear ends of mice diving for cover beneath the cone scales. Subalpine fir cones (right) are rarely seen - the rounded, paper-like scales fall from the cone, leaving only the core attached to the tree.

9. Cones longer than 2 ½ inches.....**Blue Spruce**
9. Cones less than 2 ½ inches.....10
 10. Scales of cones smooth and rounded on the edges, needles 1 inch or less in length**White Spruce**
 10. Scales of cones pointed and somewhat toothed at tip, needles greater than 1 inch in length.....**Engelmann Spruce**
11. Needles narrowest at base. Cones with three-pronged bracts extending between scales**Douglas Fir** (not a real fir)
11. Needles not narrowing towards base, cones falling apart at maturity**Subalpine Fir**



Wyoming's 5-needle pines are limber pine (left), found throughout the state in dry, rocky sites, and whitebark pine, found only in the western mountains. The seeds of whitebark pine are an important source of nourishment for grizzly bears.



A hand lens or microscope is necessary to see the minute, scale-like leaves of juniper trees. Besides the two tree species, there are also two shrubby junipers in Wyoming. The berries of common juniper (one of the shrubs) provide flavor to gin.

Junipers are well adapted to heat and drought, and can be found in dry, open sites from the foothills to the montane.



Ponderosas have the longest needles of any Wyoming conifer, making them easy to recognize. The other 2-needle pines have shorter needles and much smaller cones. The cones of lodgepoles usually remain on the tree for many years. Some of the cones require heat to open and release seeds, which allows rapid regeneration after fire. Pinyon pines have large, edible seeds. In Wyoming, pinyons are found only in southern Sweetwater county.