

Native Conifer Species of the Wenatchee Watershed: Needle Characteristics

Species	overview	Length	Tip shape	Bundled (Facicles)	Color	X-section	Stomatal bands patterns
Western white pine	long slender flexible.	2-4"	varies: blunt to sharp	in groups of 5; sheath deciduous-falls off with age Soft Pine	blue-green	Triangular; single vascular bundle in center	To the eye, bands are faint. Can vary in number and vary in location
Whitebark pine	stiff, sturdy	1.5-3.5"	sharp; often damaged	in groups of 5; sheath deciduous-falls off with age Soft Pine	yellow-green	Triangular; single vascular bundle in center (hard to see)	Faint white lines on all needle surfaces; Not very helpful for ID
Ponderosa pine	pitchy smell when opened. Longest needles of any WA Pine	4-8+" highly variable	sharp	In groups of 3 with permanent sheath (NOTE: Rocky Mnt. pop. Has a mix of 2 & 3s)	yellow-green	One side is a curved semi-circle: 2 vascular bundles in center (hard to see)	very thin and faint on all sides Not very helpful for ID
lodgepole pine	commonly twisted	2-3 "	sharp; prickly to touch	In bundles of 2 with permanent sheath	yellow-green	One side is a curved semi-circle; 2 vascular bundles in center (hard to see)	Not visible

Species	overview	Length	Tip shape	Arrangement	Color	Upper Stomatal Bands	Lower Stomatal bands
Pacific sliver fir	Silvery-white underside of needle often gleams brightly	to 1.5"	notched	Needles crowded & closely appressed & pointing forward on upper surface, hiding the branch from view, along with longer horizontal spreading needles	dark green above, contrasting to lower white/silvery color	none	2 bands
subalpine fir	Needles generally upswept and massed near upper side of twig	to 1.3 "	blunt	Needles generally upswept and massed near upper side of twig. Straight base	dark green above, contrasting to lower white/silvery color	1 band, making it less conspicuous compared to lower side	2 bands
grand fir	Needles grow flat in 2 rows; variable in length	to 2"	notched	needle base is twisted at attachment to twig, but otherwise flat. Strongly 2-ranked	shiny yellow-green	none	2 bands
noble fir	Looking up, branches look "skeletal: needles tend to curve uniformly upward on all branches	1"	rounded tip	Needle base is strongly curved (like hockey stick) at attachment to twig. Needle squarish- doesn't easily roll in fingers	bluish-green	usually 2 bands, on either side of tiny grooved midvein	2 bands
western larch	Deciduous, yellow in fall, naked in winter	1-1.5"	blunt	Flat on top, wider than thick. Triangular in X-section & no resin ducts. 15-30 grouped together, growing out of a woody peg.	green	none	none
subalpine larch	Deciduous, yellow in fall, naked in winter	1-1.5"	blunt	4-angled. Square in X-section w/ 2 resin ducts. 30-40 grouped together, growing out of a woody peg.	blue-green; turn golden in fall	none	none
Engelmann spruce	Short, Sharp, Stiff, Square-can roll between fingers. Stink when crushed	1"	acute	Stiff prickly 4-sided needles attached to branch by at tiny wooden peg. Needles uniformly point toward the branch tip	blue-green	inconspicuously present throughout No bands	Inconspicuously present throughout No bands

Species	overview	Length	Tip shape	Arrangement	Color	Upper Stomatal Bands	Lower Stomatal bands
Douglas-fir	Soft to touch. Branch tip buds are sharp-pointed and shiny	0.6-1"	blunt	Spirally arranged all around the branch. In shade, may be 2-ranked. Needle attached to branch with a short green stalk	green above, paler below	none	2 bands
western hemlock	Flat short glossy needles, variable in length	0.2-1" different lengths on one branch	blunt	Needles born on persistent peg-like stalks. Mostly 2-ranked, splaying out from branch at varying angles.	glossy dark green above, light green below	none	2 bands
mountain hemlock	Star-like appearance of needles on the branch	<1" all same length	bluntly rounded	Needles born on persistent peg-like stalks. Spirally arranged around twig	blue-green (entire needle same color)	Inconspicuously present throughout No bands	Inconspicuously present throughout No bands
western red cedar	Flatten, scale-like, glossy	to 0.2"	short pointed	Pairs of very small closely appressed leaves that overlap in pairs at right angles	dark yellowish-green	Ligher green due to stomatal bloom	Butterfly-shaped stomatal bloom
Alaska-cedar	Pungent when crushed; prickly to touch	<0.2"	prickly tip	Appressed to twig with flaring tip	yellow-green	none	no white stomates. Glandular
western yew	Shiny, short, flat, leaf margin rolled under	0.5-1"	pointed but not sharp, hook-like	needles in a single plane (2-ranked)	darker green above, ligher below	none	No bands, minimal stomatal bloom