

Spruces - The Important Distinctions

		Black Spruce <i>Picea mariana</i>	Red Spruce <i>Picea rubens</i>	White Spruce <i>Picea glauca</i>
N E D L E S	Color	Blue - green.	Dark yellow-green.	Blue-green to dark green.
	Length	¼ - ½ inches.	½ - 5/8 inches.	1/3 - ¾ inches.
	Description	Dull with bloom.	Very shiny.	Dull, strong odor when crushed.
C O N E S	Length	½ - 1 ½ inches.	1 ¼ - 2 inches.	2 inches.
	Retention	Remain on tree many years.	Fall first year.	Fall first year.
	Shape	Spherical.	Wide in middle.	Cylindrical.
	Scales	Stiff and rigid when ripe; margin irregularly notched.	Stiff, with margin entire or slightly notched.	Flexible at maturity, margin entire.
T W I G S	Color	Yellow - brown to brown.	Reddish to orange-brown.	Light gray to yellow-brown.
	Hairs	Short rusty to black hairs; some hairs tipped with globose glands.	Short rusty to black hairs; tips lack glands.	Without hairs.

Seed of all spruce is winged; cones are pendent; bare twigs are roughened by persistent leaf bases.

Norway Spruce

Picea abies (L.) Karst.

Norway spruce is a native of Europe and is of great economic importance in its natural range. Here it is commonly planted both in forest plantations and as an ornamental tree. It rarely reproduces in the wild. It is very symmetrical and graceful in its growth habit, open grown trees often carrying branches clear to the ground. The tips of branches on larger trees have an upward sweep and lateral branchlets are long and pendent. Twigs are without hairs. Norway Spruce is a more rapid grower than any of our native species of spruce, and is a species frequently planted for pulpwood. It is occasionally used for lumber and as an ornamental. The leaves are about one inch long, sharp-pointed, glossy and dark green in color. The needles lack the tendency to bend upward on the twigs as in white spruce. Cones are cylindrical, 4-7 inches long with stiff, notched scales. They ripen from September to November but may be collected from September to April.

BLACK SPRUCE

Picea mariana (Mill.) B. S. P.

Black spruce occurs in every county except Sagadahoc. It grows on cool upland soils, but is more commonly found along streams, on the borders of swamps and in sphagnum bogs. It grows to a height of 70-90 feet and a diameter of 6 - 18 inches. On a good site, it will grow rapidly. It is the most commonly planted spruce. In sphagnum bogs, trees 50 - 80 years old may be only 6 - 8 feet tall and about one inch in diameter. The branches are short, pendulous and have a tendency to curve up at the ends. It forms an open, irregular crown. The lower branches often touch the ground and form new trees by the natural layering method. The **bark** on the trunk is grayish brown and the surface is broken into thin scales. The **leaves** are $\frac{1}{4}$ - $1\frac{1}{2}$ inches long, dull blue-green in color,



blunt-pointed, flexible, and soft to the touch.

The **cones** are $\frac{1}{2}$ - $1\frac{1}{2}$ inches long, ovoid, and become nearly spherical when open. The cone scales are stiff, and have toothed margins. The cones usually stay on the trees for many years. The **twigs** have many hairs, some of which are tipped with glands. The inner bark is olive-green.

The **wood** is soft and light, but strong. It is used for the manufacture of pulp, framing and construction lumber, planking and Christmas trees. Spruce beer is made by boiling the branches.

BLUE SPRUCE

Picea pungens Engelm.

Blue spruce is a native of the Rocky Mountain region, and is frequently planted in the East as a decorative tree. Foliage coloration varies from silvery-blue to blue-green; the intensity of blue varying between individual specimens. The leaves are about one inch long, stiff, very sharp-pointed, and strongly incurved. Cones are oblong, $2\frac{1}{2}$ - $\frac{3}{4}$ inches long, with thin, flexible, notched scales. Selected specimens are usually planted singly, on lawns or in landscape effects, where the color of the foliage and the shape of the tree are of primary importance. Blue spruce will grow on a variety of sites and tolerates a wide range of growing conditions. These factors contribute to its popularity as a favored ornamental species.

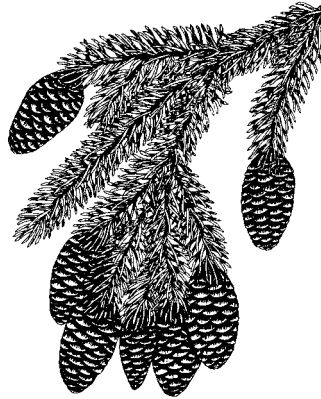
RED SPRUCE

Picea rubens Sarg.

Red spruce is commonly found throughout the state. It grows on well-drained, rocky upland soils, and particularly on the north side of mountain slopes where it may be the major species present. The spreading branches form a somewhat conical, narrow head in young trees. The trunk is long, with a slight taper. It grows to considerable size, and is capable of attaining a height of 60 - 80 feet and a diameter of 1 - 2 feet, but occasionally exceeds these measurements. Red spruce is shade tolerant and will become established in the understory of mixed stands.

The **bark** on mature trees is thick and is broken into thin, reddish brown scales of irregular shape. The **leaves** are dark green often with a yellow tinge and are very shiny.

They are about $\frac{1}{2}$ inch long, sharp-pointed, stiff, and prickly to the touch. The **cones** are oblong in shape and usually from $\frac{1}{2}$ - 2 inches long. When ripe, they have a reddish brown color and are quite shiny. The cone scales are stiff like the black spruce, but the margins are generally without conspicuous notches. The cones begin to drop in the autumn or early winter and are all gone from the branches by the next summer.



The **twigs** have hairs none of which have a gland at the tip as in black spruce. The inner bark is reddish brown. The **wood** is fairly soft, light, close-grained, and strong, but is not as durable as pine when exposed to the weather.

Red spruce is one of our most valuable trees for the production of building lumber. It is used for joists, sills, rafters and heavy construction timbers, and is a principal wood used in the manufacture of paper pulp. It is also used for weir poles, piling, and Christmas trees, and is valuable for the sounding boards of musical instruments. Spruce gum is obtained largely from this tree.

WHITE SPRUCE

Picea glauca (Moench) Voss

White or cat spruce occurs statewide except in Sagadahoc and York counties. It is widely distributed, but not as abundant as the red spruce. It grows on shallow, rocky sites from the coast to the tree line in the mountains and is also commonly found in old pastures or cleared land. It does not tolerate shade and does not grow as an understory tree. The long and rather thick branches, densely clothed with stout, rigid lateral branches, are curved upward and form a somewhat open, irregular head having a broad base. It commonly grows to a height of 60-90 feet and to a diameter of two feet.

The **bark** on old trees has light gray, plate-like scales which are thin, irregular, and with a somewhat brownish surface, light gray and smooth on younger trees.

The **leaves** on the lower side of the branches are often bent upward in such a manner as to bring them all on the upper side.

They are pale blue-green at first,

later becoming a dark blue-green. The foliage emits a peculiar and characteristic odor which offers a ready means of distinguishing it from the other species and is the reason for the alternate name. The **cones** are slender, cylindrical in shape, pale brown and shiny when ripe, and usually about two inches long. They ripen in August and September, and may be collected for seed until October. Cones usually fall off the first year. The cone scales are thin and flexible so that they give easily when the cone is clasped in the hand. The **twigs** are without hairs. The inner bark is silvery and glistens.

The **wood** is fairly light, soft, finishes well, and is moderately strong. It is used for pulp, paddles, oars, piano sounding boards, dimension lumber, and in limited amounts for Christmas trees. White and black spruce produce long, tough, pliable roots which were used by the Indians for tying together pieces of birch bark for canoes, and for various other purposes.

