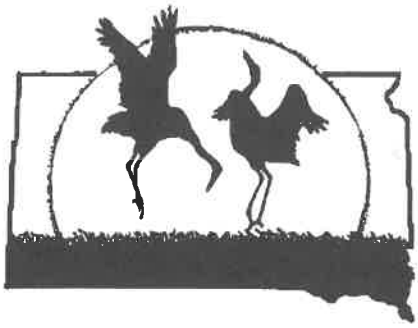


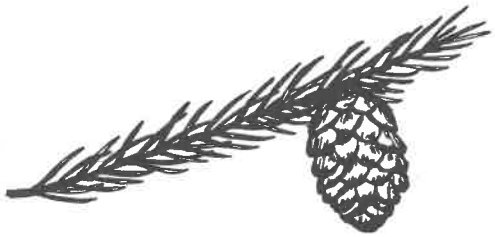
Black Hills Forest Species
Urban Forest Species
Windbreak Forest Species

BLACK HILLS SPRUCE

(Picea glauca var. *densata)*

Description

Picea is the Latin name for pine, spruce or fir, from the Greek *pissa. Glauca* refers to its glaucous foliage, glaucous meaning "covered with a waxy substance." *Densata* refers to its tendency to grow in dense stands. There is not another common name for Black Hills spruce. Sometimes it is just called by the species common name, white spruce. The Lakota call spruce *wazi'hcaka,* meaning "like pine."

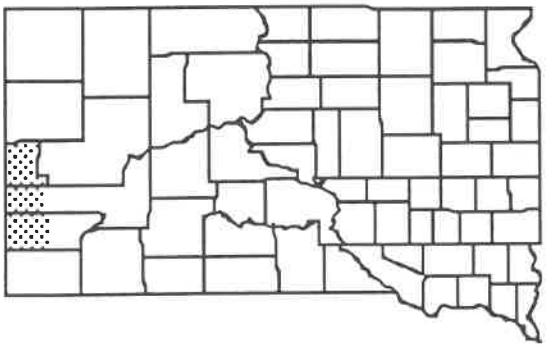


Black Hills spruce is a *conifer,* a member of Pinaceae, the pine family, along with ponderosa pine, *Pinus ponderosa.* The leaves are evergreen, 1/3 to 3/4 inches (.85 to 1.9 cm) long, with 4-sided needles that are bright to bluish green. Male *cones* can be either erect or hanging and produce pollen that is windborne. The female *cone* is narrow, oblong, and about 1 to 2 inches (2.54 to 5 cm) long. The cones of Black Hills spruce are shorter and heavier than those of white spruce. Twigs are orange-brown to gray. The bark is thin and flaky, usually ash-gray in color.

What is the difference between white spruce and Black Hills spruce? Black Hills spruce is a variety, or subspecies, of the widely distributed white spruce. White spruce has bluish-green foliage while the Black Hills spruce has a typically denser and a bright bluish-green foliage. Black Hills spruce is also a slower growing species than white spruce. While Black Hills spruce has

been given the variety distinction, it is now considered to be a geographical variety, rather than a *botanical variety.* The information that follows refers to the Black Hills spruce, but also applies to the species as a whole.

Distribution



Native Distribution

As the name implies, Black Hills spruce is found only in one location, the Black Hills of South Dakota and Wyoming. The variety, which has been our state tree since 1947, is found at high elevations, 5,700 to 6,700 feet (174 to 204 km) and in a few cool canyons. Cool, moist conditions are essential to this spruce's survival. The species is found across Canada, but only in the northern parts of a few adjacent states. The Black Hills spruce probably colonized the Hills 500,000 years ago when the glacial periods were occurring. As the climate warmed over the last 10,000 years, the white spruce population spread north leaving a remnant population in the cool mountain climate of the Hills.

Black Hills spruce is a tolerant species and is considered a *climax species* in the higher elevations. It gradually replaces quaking aspen (*Populus tremuloides*) which forms the lower border of the spruce stands. Black Hills spruce can be planted in the eastern one-fourth of South Dakota and many communities east of the Missouri River.

Natural History

Life Span: Black Hills spruce is a very long-lived species with a life span of 150 to 350 years. The species in Canada has a similar life span.

Size: The two national champion Black Hills spruce trees are in South Dakota. One is near Terry Peak Lodge. It is 113 inches (287 cm) in circumference, 86 feet (26 m) tall and has a crown spread of 30 feet (9 m). The other co-champion is in the Black Hills National Forest along Bear Butte Creek. It is 98 inches (249 cm) in circumference, 96 feet (29 m) tall and has a crown spread of 28 feet (8.5 m). As a comparison, the national champion white spruce is 116 inches (295 cm) in circumference, 128 feet (39 m) tall and has a crown spread of 25 feet (8 m). It is in Koochiching County, Minnesota.

Significance

The wood of the Black Hills spruce is light, soft, and straight-grained. The primary use for white spruce in Canada is as a source of pulp for making paper. Because of the limited local market, Black Hills spruce is not an important timber species.

Black Hills spruce has very few serious pests. This is one reason that its greatest value is as an *ornamental* or as a windbreak. The color is attractive and the dense, conical form is popular in landscape design. The tree is very tolerant of *alkaline soils* and drying winter winds.

Publication of the *Black Hills Spruce* fact sheet was funded by the S.D. Department of Agriculture, Division of Forestry, Pierre, SD.