



## TREES AND SHRUBS

### Flood Plain Prairie Forest Species

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# WILLOW

(*Salix* spp.)

## Description

*Salix* comes from the Latin name for willow. World-wide, there are about 200 species of willows, over 70 are native to North America with at least 12 in South Dakota. Willows are a very difficult group of trees and shrubs to separate by species because of their very similar characteristics. They also hybridize easily, so it is very common to find trees that are crosses between two species. Because of these problems, accurate identification of willows is often difficult and sometimes impossible. For this reason willows will be treated as a genus rather than by individual species in our factsheets. Other common names for willows are: *wahpé-popa-can* (Lakota), *thihe* (Omaha) and *ruhi* (Winnebago).



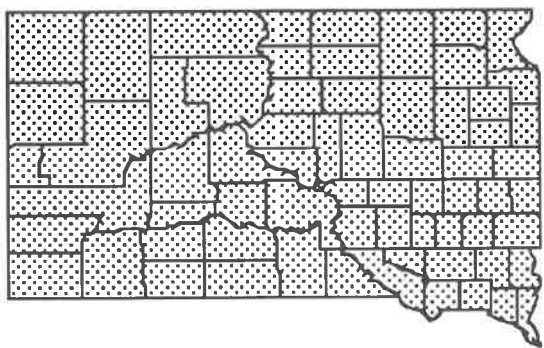
Willows belong to the willow family, Salicaceae, along with cottonwood (*Populus deltoides*) and aspen (*Populus tremuloides*). Willow leaves are generally 2 to 6 inches (5 to 15 cm) long, *deciduous*, *alternate*, and commonly *lanceolate* and *serrated* or smooth. Willow trees have separate male and female flowers, that are minute, yellowish or greenish and in erect *catkins*. Fruits are 2 to 4-valved *capsules* containing small seeds that are shed in late spring or early summer. The seeds must land in a moist location and

germinate quickly or they dry out and soon die. Twigs are slender and often very flexible. The bark is very scaly and dark.

**Common South Dakota Species:** While there are many willow species native to various parts of our state, the following three are native throughout most of South Dakota. They are, however, still restricted to moist locations along rivers and streams. The three species are peachleaf willow (*Salix amygdaloides*), coyote willow (*Salix exigua*) and the sandbar willow (*S. interior*). Peachleaf willow is the largest of the three. It is typically found on older flood plains throughout the state. The leaves are lanceolate and very shiny. The coyote willow is a suckering shrub found along many streams. It has very narrow leaves with a silvery-white color. Sandbar willow is a shrub commonly found on newer flood plains and sandbars. The leaves are narrow and green.

## Distribution

Willows can be found throughout South Dakota. Some species, such as the peachleaf willow and the coyote willow, are native across the entire state. Others, such as the planeleaf willow (*Salix phylicifolia*), are restricted to only a small area (the Black Hills in this case).



**Native Distribution**

Willows are commonly found along the shoreline of rivers and streams, and sometimes grow in the water. Willows are a pioneer species. Their interlacing roots form mats that bind the shoreline

and protect the banks from erosion. Willows are one of the most shade intolerant native species. They tend to form pure, even-aged stands that are replaced by other species as the willows mature.

## Natural History

The willow has a seed dispersal strategy that perfectly fits its environment. Willows, and many other flood plain species, produce their seeds in the spring and release them in early summer. This adaptation prevents the young seedlings from being buried by new soil deposited by spring floods. By releasing the seed after the waters have receded, the young seedlings are protected. Also willow seeds are very light and easily carried by the flowing water or wind to new locations.

The primary threats to willow are fire and drought. Even a light burn can kill entire stands. Fires injure the willow's protective bark, exposing the sapwood to decay. The other danger, drought, killed many willows during the 1930's. If the water table becomes too low, willows can not survive very long.

**Life Span:** Most willows are very short-lived. A 70 year old willow is a very old tree. Few live to be more than 100 years old.

**Size:** Some willows are only shrubs and never get very large. Others can become tall trees. The tallest willow in the United States is a crack willow (*Salix fragilis*) in Macomb County, Michigan. It is 305 inches (775 cm) in circumference, 122 feet (37 m) tall and has a branch spread of 124 feet (38 m). In South Dakota the tallest willow is a 65 foot (20 m) tall weeping willow (*Salix alba*) in Sioux Falls. This tree is 134 inches (340 cm) in circumference and has a crown spread of 35 feet (11 m). The weeping willow is not native to South Dakota, or even North America; it is from Europe. The largest native willow in South Dakota is a peachleaf willow in Springfield 35 feet

(11 m) tall with a crown spread of 43 feet (13 m). This willow is 82 inches (208 cm) in circumference.

## **Significance**

Since most willow species do not become very large, they are rarely used for lumber. American Indians, who could not transport wood very far, used willow poles in earth lodge construction. The early European settlers used willow in their home construction for the same reason.

The inner bark of willow was chewed for

relief from headaches (bark contains salicin) and the young foliage is rich in vitamin C. The slender, flexible stems of some of the shrub willows are used to weave baskets.

Willows are not a very desirable group of *ornamental* plants. The wood is very brittle so the trees are always dropping twigs and small branches.

The willow is important to wildlife. The tender new leaves are eaten by grazing animals. The early spring flowers are a source of nectar.

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