

Ponderosa Pine



Ponderosa Pine

(*Pinus ponderosa*)

General Description

A large tree native to southwestern North Dakota that is pyramidal when young, becoming irregularly-oblong and open-crowned with age. The largest tree in North Dakota is 73 feet tall with a canopy spread of 26 feet.

Leaves and Buds

Bud Arrangement - In whorls.

Bud Color - Reddish-brown scales on buds which are pressed closely together.

Bud Size - Oblong, cylindrical and 3/4 inch long.

Leaf Type and Shape - Needles in fascicles of 2 and 3, mostly 3.

Leaf Margins - Minutely toothed and the tip has a sharp point.

Leaf Surface - Relatively smooth.

Leaf Length - 4 to 9 inches.

Leaf Width - Needles.

Leaf Color - Dark green to yellowish-green.

Flowers and Fruits

Flower Type - Monocious, separate male and female strobili. Strobili develop into cones.

Flower Color - Female strobili are yellow; male strobili are red.

Fruit Type - Cones 3 to 5 inches long with sharp thorn at tip of scales. Two winged seeds per cone scale, triangular-shaped, 1/4 inch long, with a wing about 1 inch long.

Fruit Color - Brown cone, dark brown seeds.

Form

Growth Habit - Pyramidal when young, gradually lose lower limbs as they grow taller and become less regular in shape.

Texture - Coarse, summer and winter.

Crown Height - 50 to 70 feet.

Crown Width - 25 to 30 feet.

Bark Color - Brown-black on young trees, turning yellowish-brown to cinnamon-red, with large, flat, scaly plates with age.

Root System - Shallow to deep-rooted, fibrous type root system, but with a strong taproot.

Environmental Requirements

Soils

Soil Texture - Grows best on deep, well-drained loam soils, but will tolerate sandy soils.

Soil pH - 6.0 to 8.0. Tolerates saline and alkaline soils.

Windbreak Suitability Group - 1, 1K, 3, 4, 4C, 5, 6D, 6G, 7, 8, 9C, 9L.

Cold Hardiness

USDA Zone 3.

Water

Prefers moist, well-drained soils for best growth. Tolerates drought. Does not tolerate flooding or poorly-drained soils.

Light

Full sun, not shade tolerant.

Uses

Conservation/Windbreaks

Tall evergreen for farmstead or field windbreaks.

Wildlife

Food and nesting sites for birds. Squirrels eat the seeds.

Porcupines eat the inner bark on older trees and eat entire trees and limbs on smaller trees.

Agroforestry Products

Wood - Principle use is in millwork, including windows, doors, shelving, molding, knotty-pine paneling and dimension lumber. Sap used as glue and source of turpentine oils.

Food - Native Americans used inner bark and seed as food, sap was used as a chewing gum. Source of pyrene used as a FDA approved flavoring to bread and cakes.

Medicinal - *Pinus* species have been used as an antiseptic, an expectorant, a poultice to treat boils, rheumatism, backaches and other inflammations.

Urban/Recreational

Excellent for landscaping private and public grounds.

Cultivated Varieties

Rocky Mountain Ponderosa Pine or Western Yellow Pine (*Pinus ponderosa* var. *scopulorum*)

Related Species

Lodgepole Pine (*Pinus contorta* var. *latifolia*)

Scotch Pine (*P. sylvestris*)

Pests

Common diseases include *Cyclaneusma* needle cast.

Western gall rust and *Lophodermium* needle cast are locally common. Common insect pests include tip moth, sawfly, pine needle scale, and giant conifer aphid. Extracts of some *Pinus* species are toxic to certain insect and disease pests.