

# 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.