

Paper Birch



Paper Birch (*Betula papyrifera*)

General Description

A native medium to tall tree which is loosely pyramidal when young, developing an irregular oval crown when mature. Drought stress followed by borer attack often causes decline. The largest tree in North Dakota is 61 feet tall with a canopy spread of 40 feet.

Leaves and Buds

Bud Arrangement - No terminal bud, lateral buds are alternate.

Bud Color - Lustrous, brown-black in color, scales on buds are downy on the edges.

Bud Size - Lateral buds are ovate, pointed, and 1/4 inch long.

Leaf Type and Shape - Simple, ovate to narrow-ovate.

Leaf Margins - Coarsely and doubly-serrate, sharp pointed, rounded at the base, and have 3 to 7 lateral veins.

Leaf Surface - Leathery smooth texture above, hairy on the veins below or nearly smooth.

Leaf Length - 2 to 3 inches.

Leaf Width - 1 to 2½ inches.

Leaf Color - Dark green on top, duller green below; bright yellow fall color.

Flowers and Fruits

Flower Type - Male catkins, 2 to 4 inches long hanging in groups of 1 to 3, female about 1 inch long, borne erect.

Flower Color - Flowers are greenish to brownish.

Fruit Type - Heart-shaped, winged nutlets attached to tiny oval seeds.

Fruit Color - Brownish.

Form

Growth Habit - Larger limbs grow upward and smaller branches are more horizontal and flexible. Pyramidal when young, irregular oval to rounded at maturity.

Texture - Medium-fine, summer; fine, winter.

Crown Height - 30 to 55 feet.

Crown Width - 20 to 40 feet.

Bark Color - Smooth bark, marked with horizontal lenticels, is reddish-brown when young, turning papery white with age.

Root System - Roots are shallow and superficial.

Environmental Requirements

Soils

Soil Texture - Does best on loamy or sandy soils along rivers, lakes or ravines.

Soil pH - 5.0 to 7.5.

Windbreak Suitability Group - 1, 1K, 3.

Cold Hardiness

USDA Zone 2.

Water

Does best on well-drained, moist sites. Does not tolerate drought. Similar to aspen in water needs.

Light

Full sun.

Uses

Conservation/Windbreaks

Small to medium tree for farmstead windbreaks on protected sites or along riparian areas.

Wildlife

Used as food by over 30 types of birds and mammals.

Agroforestry Products

Wood - Firewood, tooth picks, spools, carving and wood pulp. Sap is used to treat leather. Oil extract used to repel insects.

Food - Birch wine is made from the sugary sap.

Medicinal - Used for gout, rheumatism, dropsy, colds, coughs and other pulmonary ailments. It has also been used as a laxative, burn and wound treatment and in cancer research.

Urban/Recreational

Used as a landscape tree in yards and parks.

Cultivated Varieties

None.

Related Species

Asian White Birch (*Betula platyphylla*)

European White Birch (*B. pendula*) - Bronze birch borer susceptible.

Gray Birch (*B. populifolia*)

River Birch (*B. nigra*) - Resistant to bronze birch borers, but many sources are questionable in hardiness and adaptation in North Dakota.

Pests

Bronze birch borer is a major pest that can be a problem when trees are stressed by either drought or water-logging. Native birches are less susceptible to the borer than European birches. Extracts of *Betula* species are toxic to insect pests.

PAPER BIRCH

Betula papyrifera Marsh.

Plant Symbol = BEPA

Contributed By: USDA NRCS National Plant Data Center



Paper birch in the foreground with larch in the background.
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Atlas of Beringia
National Oceanic & Atmospheric Administration

Alternative Names

White birch (*B. p.* var. *papyrifera*), paperbark birch, silver birch, canoe birch; western paper birch (*B. p.* var. *commutata*), mountain paper birch (*B. p.* var. *cordifolia*), Kenai birch (*B. p.* var. *kenaica*)

Uses

Ethnobotanic: The sap and inner bark is used as emergency food (MacKinnon & Pojar 1994). White birch can be tapped in the spring to obtain sap from which beer; syrup, wine or vinegar is made. The inner bark can be dried and ground into a meal and used as a thickener in soups or added to flour used in making bread. A tea is made from the root bark and young leaves of white birch. The Shuswap made soap and shampoo from the leaves (MacKinnon,

Pojar, & Coupe' 192). It is also used by native Americans to make canoes, buckets, and baskets. The Shuswap were noted for their beautiful birch bark baskets (Ibid.). North American Indian tribes used white birch to treat skin problems of various rashes; skin sores, and burns (Moerman 1998). The bark has been used to make casts for broken bones.

Economic: White birch wood is used commercially for pulpwood, plywood, veneer, and turnery. Tree chips are used for paper manufacture and fuel.

Medicinal: A decoction has been used to treat dysentery, various diseases of the blood, induce sweating, and to ensure an adequate supply of milk in nursing mothers (Moerman 1998). Birch gum could have been medicinal for some stone-age gatherers. The chewable gum contains zylitol, a disinfectant, and some terpenes, which could give the chewier a mild buzz (MacKinnon & Pojar 1994).

Landscaping & Wildlife: *Betula papyrifera* is commonly used as a landscape tree for its striking coloration. It is a desirable ornamental to be planted around homes and public buildings, in parks, and on campuses. Moose, snowshoe hare, and white-tailed deer browse paper birch. Numerous birds and small mammals eat the buds, catkins, and seeds.

Agroforestry: White birch is used in forested riparian buffers to help reduce stream bank erosion, protect aquatic environments, enhance wildlife, and increase biodiversity.

Status

Please consult the Plants Web site and your State Department of Natural Resources for this plant's current status, such as, state noxious status and wetland indicator values.

Description

General: Birch family (Betulaceae). White birch is a deciduous small to medium sized native tree. The leaves are alternate, ovate or triangular, five to ten centimeters long. The flowers are male and female flowers in separate catkins two to four centimeters long, the catkins break up at maturity (MacKinnon & Pojar 1994). The fruits are mature seed catkins that are three to five centimeters long. The bark is thin, smooth, dark red to almost black on young stems, becoming reddish-brown and then bright creamy white (Farrar 1995).

Plant Materials <<http://plant-materials.nrcs.usda.gov/>>

Plant Fact Sheet/Guide Coordination Page <<http://plant-materials.nrcs.usda.gov/intranet/pfs.html>>

National Plant Data Center <<http://npdc.usda.gov>>