

GRAY BIRCH

Betula populifolia Marsh.
Plant Symbol = BEPO

Contributed by: USDA NRCS National Plant Data Center



Robert H. Mohlenbrock. 1995
USDA NRCS

Alternate Names

Betula alba var. *populifolia*, *Betula populifolia* forma *purpurea*, fire birch, old field birch, poverty birch, white birch, wire birch.

Uses

Conservation: Gray birch is a pioneer species that can tolerate multiple soil conditions. It is a good hardwood species for use in the revegetation of mine spoils and other disturbed areas.

Ethnobotanic: Native Americans used a bark decoction of gray birch on swollen or infected cuts.

Landscaping: Gray birch is an attractive tree that is often used as a winter landscape plant or when space limitations require the use of trees with a smaller stature. It can also be planted as a nurse tree to protect more valuable pines in the landscape that require protection to become established.

Wildlife: Beavers and porcupines chew the bark of gray birch. Sapsuckers consume sap and songbirds consume the seeds. Ruffed grouse eat the catkins and buds. Snowshoe hare, moose, and white-tailed deer browse the twigs. Gray birch also provides cover for the bobcat and hare in Maine.

Wood products: Gray birch is often used for fuel. It is also popularly used for woodenware such as spools, spindles, and other turned articles.

Legal Status

Gray birch is extinct in Delaware, endangered in Illinois, extirpated in Indiana, potentially threatened in Ohio, and rare in Maryland. Please consult the PLANTS Web site (<http://plants.usda.gov>) and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

Description

General: Birch Family (Betulaceae). Gray birch can be distinguished from *Betula papyrifera* by its tight, non-exfoliating bark. Other key characteristics include: tapered, sharp leaf tips (acuminate) and black triangular bark patches on branch bases. Several trees occur in a cluster, growing from the same root group.

Gray birch is a rapid grower (0.6 m per year) and short-lived (approximately 20 years). The trees begin producing fruit at 8 years of age.

Gray birch grows to 10 m tall; trunks are seldom over 1.5 dm thick. Bark is chalky-white with black triangular markings. Leaves are acuminate, with serrated edges near the tip. Male catkins (elongated flower clusters) are yellow and 1.3 to 3 cm long. Female catkins are stouter and resemble cones in appearance. Flowering takes place between April and May. Fruit sets in late summer to fall, and seeds are wind dispersed during late fall and winter.

Distribution: Gray birch is native to the northeastern United States. It occurs from Nova Scotia to Southern Quebec, south to New Jersey and Pennsylvania, with outlying populations in southern Ontario, northern Ohio, northeast Indiana, and south to the North Carolina mountains. For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Habitat: Gray birch is an early colonizer of poor sites, road cuts, and burned areas. It is listed as a common associate of the aspen-birch and beech-birch-maple communities in the northeastern hardwood forest. However, it is not an indicator any particular habitat type.

Adaptation

The USDA Hardiness zones for gray birch are 3 to 8. It grows best on moist, well-drained soil along streams, ponds, lakes, and swamps but also on dry sandy or gravelly soils. Gray birch can grow in inorganic soils of slopes and hillsides but growth is slow. Soils with high pH can cause chlorosis of the foliage. It grows easily in sun and partial shade but is shade intolerant.

Establishment

Seed heads (strobiles) should be collected when they are still a little green and then spread out in a dry place until strobiles begin to fall apart. Seeds can be easily removed from the strobiles and are best stored at 1% to 3% moisture content at 2.2 to 3.3°C. Cold storage temperatures and exposure to light aid in germination. Birch seeds can be sown after collection in the late summer or fall, or in the spring after prechilling for 4 to 8 weeks. Cover seeds with soil to one times the depth of the seed (approximately 3mm). Greenhouse temperatures should be set at alternating temperatures of 30°C for 8 hours and 20°C for 16, with light supplied during the 30°C period. Seedlings require light shade during the first 2 to 3 months of the first summer.

Rooted cuttings can also produce gray birch seedlings. Collect 8 to 10 inch apical cuttings from trees in November or late March to April. Wound the base of each cutting by making two 1-inch longitudinal cuts. Apply a rooting hormone containing approximately .10% indole-butyric-acid (IBA) to the lower portion of the cutting, covering the wounds, and place each cutting in a combined medium of coarse and fine sand. If leaves are present, remove all but three apical leaves. Place cuttings in a mist bed, keeping the soil temperature at 22-24°C. Rooting will take place within 8 weeks.

Management

Gray birch is an early colonizer of disturbed sites, growing best with little competition from other species. It often forms pure stands from seedlings and root suckers.

Gray birch is usually top-killed by fire, but will resprout from root suckers. The tree can be killed by fire during drought periods when soil organic matter is too dry to protect the roots. The species accumulates abundant seed banks in the soil. Seedling regeneration following fire is probable from the seed banks.

Gray birch is prone to injury by snow and ice.

Pests and Potential Problems

Birch leaf miner is a pest that is disfiguring to the foliage, but does not kill the plant. Gray birch can be susceptible to the bronze birch borer that can cut off sap flow and cause branches to die back. A healthy vigorous tree is much less susceptible to attack. The best way to prevent birch borer attack is to plant the birch in a cool, moist, shady location and to keep it healthy by watering and fertilizing when needed. A birch tree planted in a sunny exposed area may lose vigor and become weakened allowing the borers to become established.

Cultivars, Improved, and Selected Materials (and area of origin)

The NRCS Plant Materials Program has not released any cultivars of gray birch for conservation use. Ornamental cultivars of this species include 'Laciniata,' with pinnately-lobed leaves, 'Pendula,' with drooping branches, and 'Purpurea,' with purple young leaves.

Contact your local Natural Resources Conservation Service (formerly Soil Conservation Service) office for more information. Look in the phone book under "United States Government". The Natural Resources Conservation Service will be listed under the subheading "Department of Agriculture."

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