

Betula nigra: River Birch¹

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Introduction

River birch can grow 50 to 90 feet tall but is often seen 40 to 50 feet. It normally grows with a central leader and small-diameter, dark-colored lateral branches. It has a narrow, oval to pyramidal crown when young, spreading wider with age as several branches become dominant. It lacks the white trunk bark associated with other birches but is distinguished by reddish-brown bark peeling off in film-like papery curls providing interest all year round. River birch can be easily trained with one central leader or as a multi-stemmed tree. Some nurseries plant two or three trees together to form a clump, but these trunks will not fuse into one strong trunk. Should be grown more as a single-trunked specimen. Branches droop particularly when they are wet, so regular pruning in the early years will be required to remove lower branches when they are located close to areas where clearance is needed for vehicular traffic.

General Information

Scientific name: *Betula nigra*

Pronunciation: BET-yoo-luh NYE-gruh

Common name(s): river birch

Family: *Betulaceae*

USDA hardiness zones: 4A through 9A (Figure 2)



Figure 1. Full Form - *Betula nigra*: river birch

Credits: Gitta Hasing, UF/IFAS

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Origin: native to the southeastern United States, including adjacent northern states, and the northern range of the Mississippi River

UF/IFAS Invasive Assessment Status: native

Uses: hedge; street without sidewalk; screen; shade; specimen; deck or patio



Figure 2. Range

Description

Height: 40 to 50 feet

Spread: 25 to 35 feet

Crown uniformity: symmetrical

Crown shape: upright/erect, pyramidal, oval

Crown density: dense

Growth rate: fast

Texture: medium

Foliage

Leaf arrangement: alternate (Figure 3)

Leaf type: simple

Leaf margin: double serrate



Figure 3. Leaf - *Betula nigra*: river birch
Credits: Gitta Hasing, UF/IFAS

Leaf shape: rhomboid, ovate

Leaf venation: pinnate

Leaf type and persistence: deciduous

Leaf blade length: 1 to 4 inches

Leaf color: dark green on top, paler green underneath

Fall color: yellow

Fall characteristic: not showy

Flower

Flower color: brown

Flower characteristics: not showy

Flowering: mid spring

Fruit

Fruit shape: elongated

Fruit length: 1 to 1 ½ inches

Fruit covering: dry or hard; cone-like catkin with many winged nutlets

Fruit color: reddish-brown

Fruit characteristics: does not attract wildlife; not showy; fruit/leaves not a litter problem

Fruiting: matures in the fall



Figure 4. Fruit - *Betula nigra*: river birch
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Trunk and Branches

Trunk/branches: branches droop; very showy; typically multi-trunked; no thorns

Bark: reddish brown to creamy yellow and smooth, becoming papery and flaking or peeling off in large, curling plates with age

Pruning requirement: little required
Breakage: resistant
Current year twig color: reddish, brown
Current year twig thickness: thin
Wood specific gravity: unknown



Figure 5. Bark - *Betula nigra*: river birch
Credits: Gary Kling, UF/IFAS

Culture

Light requirement: full sun to partial shade
Soil tolerances: clay; sand; loam; acidic; wet to well-drained
Drought tolerance: moderate
Aerosol salt tolerance: low

Other

Roots: not a problem
Winter interest: yes
Outstanding tree: yes
Ozone sensitivity: tolerant
Verticillium wilt susceptibility: resistant
Pest resistance: resistant to pests/diseases

Use and Management

It is very well suited for planting along stream banks where it is native and in other areas that are inundated for weeks. River birch tolerates low soil oxygen, flooding, and clay soil, but needs moist conditions. The tree requires an acid soil, otherwise it becomes chlorotic. River birch is hardy, grows rapidly, but tends to be short-lived (30 to 40 years) in many urban settings, possibly due to inadequate water supply. Situate the tree so it receives adequate water. Large trees are prone to trunk decay. Not a tree to plant and forget due to irrigation requirement.

The tree is not as susceptible to bronze birch borer as are other birches. It is not particularly adapted to heat but can make a nice tree in USDA hardiness zone 8b, possibly 9a, if provided with irrigation and plenty of soil space. Not for confined street tree pits or tree lawns in the South. The yellow fall color display is of short duration.

The cultivar 'Heritage' grows 50 feet tall, has an oval shape and scaly bark that is beige in color, and is the closest to a paper white birch that will survive in hot areas; it grows from Minnesota to Florida. It is also tolerant of poor drainage. It is reportedly resistant to bronze birch borer and unlike most birches it is resistant to leaf spot. It is more vigorous than the species.

Pests

No pests are of major concern. Resistant to bronze birch borer.

Diseases

Leaf spots; chlorosis on soils with a high pH.

Reference

Koeser, A. K., Hasing, G., Friedman, M. H., and Irving, R. B. 2015. Trees: North & Central Florida. University of Florida Institute of Food and Agricultural Sciences.