Alternatives to Ash: Native Trees for Southern Wisconsin
Compiled by the UW–Madison Arboretum
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The UW–Madison Arboretum recommends planting native tree species to replace ash trees (Fraxinus spp.) infested with emerald ash borer or growing in quarantined areas. Compared with non-native species, native species are adapted to particular soil and climate conditions, require less maintenance (thus reducing the need for fertilizers and pesticides), have greater survival rates, and provide food and habitat for wildlife. Shading, slope, aspect, soil type, tree form, and size should all be considered when selecting an appropriate replacement or alternative native tree. Site-specific considerations will also guide your choices. Trees planted along sidewalks, streets, driveways, or other paved surfaces face different stresses from those in open yards or forested areas. Soil compaction, salt, pollution, and drought conditions, as well as overhead wires or other structures, are factors for street trees.

Trees on this list are native to southern Wisconsin. We have selected them—based on size and form, attractiveness, diversity of site requirements, tolerance for disturbance, and wildlife value—to help you find trees that suit your site characteristics and personal preference. Cultivars are not included.

Links to the Robert W. Freckmann Herbarium provide in-depth information about each species. The Freckmann, at UW–Stevens Point, is one of the most comprehensive online databases of Wisconsin plants.

Other useful resources:
Landscape Plants of the Upper Midwest – UW Extension interactive guide to regional plants
USDA Plants Database – comprehensive standardized information about U.S. plants

BIRCH

River birch (Betula nigra)
Size / form: 50–75’ tall by 35–50’ wide; pyramidal to round
Site requirements: full sun; wet to moderate, slightly acidic soil, 6.5 pH or less
Growth rate: fast
Attractive features: red-brown exfoliating bark; yellow fall foliage
Wildlife value: birds feed on seeds; excellent cover for birds and other animals
Disturbance tolerance: tolerant of flooding and dry conditions; resistant to soil compaction
Additional resources: Robert W. Freckmann Herbarium, Betula nigra
HACKBERRY

Northern hackberry (Celtis occidentalis)
Size / form: 75–90’ tall, 40–60’ wide; open-grown umbrella-like form
Site requirements: full sun to partial shade; tolerates a wide range of soil types from dry to sandy to compacted heavy clay, pH 6.6–8.0
Growth rate: moderate to fast
Attractive features: wide, corky, knobby bark; purple-black fall fruit
Wildlife value: birds and mammals use tree for food, cover, and nesting
Disturbance tolerance: tolerant of drought, wind, and wet soils; sensitive to salt
Additional resources: Robert W. Freckmann Herbarium, Celtis occidentalis

HICKORY

Bitternut hickory (Carya cordiformis)
Shagbark hickory (Carya ovata)
Size / form: 75–100’ tall, open round to oblong crown
Site requirements: full sun to partial shade; tolerant of many soil types, pH 5.6–8.0
Growth rate: slow
Attractive features: yellow fall foliage
Wildlife value: birds and mammals feed on the large nuts
Disturbance tolerance: intermediate sensitivity to compaction
Additional resources: Robert W. Freckmann Herbarium, Carya cordiformis
Robert W. Freckmann Herbarium, Carya ovata

HONEYLOCUST

Honeylocust (Gleditsia triacanthos)
Size / Form: 50–75’ tall, 40–50’ wide; irregular, plumelike form
Site requirements: full sun; tolerant of compact, heavy clay soil, pH 6.1–7.5
Growth rate: fast
Attractive features: bright golden yellow fall color
Wildlife value: seed pods eaten by birds and mammals
Disturbance tolerance: tolerant of drought, salt, and periodic flooding
Additional resources: Robert W. Freckmann Herbarium, Gleditsia triacanthos
HORNBEAM

American hornbeam, musclewood (*Carpinus caroliniana*)

*Size / form:* 35–55’ tall by 2/3 of height (20–35’) wide; oval to round

*Site requirements:* prefers partial shade, will grow in full sun; slightly acid to neutral soil, pH 6.1–7.5

*Growth rate:* slow

*Attractive features:* grey, sinewy bark; orange to deep red fall foliage

*Wildlife value:* good food source and habitat for songbirds and waterfowl

*Disturbance tolerance:* sensitive to soil compaction and drought

*Additional resources:* Robert W. Freckmann Herbarium, *Carpinus caroliniana*

IRONWOOD

Ironwood, Eastern hop-hornbeam (*Ostrya virginiana* )

*Size / Form:* 50’ tall, 35’ wide; broad crown of small spreading branches

*Site requirements:* full sun to shade; moderate to dry soil, pH 6.1–8.0

*Growth rate:* slow to moderate

*Attractive features:* scaly bark, hop-like seed; pale yellow fall foliage

*Wildlife value:* food for birds and mammals

*Disturbance tolerance:* sensitive to compaction

*Additional resources:* Robert W. Freckmann Herbarium, *Ostrya virginiana*

KENTUCKY COFFEE-TREE

Kentucky coffee-tree (*Gymnocladus dioicus*)

*Size / Form:* 50–75’ tall, 40–50’ wide; oval, ascending limbs, few lateral branches

*Site requirements:* full sun; adaptable to most soils, pH 6.6–7

*Growth rate:* slow to moderate

*Attractive features:* large bluish-green leaves, yellow fall foliage; shallow ash-gray furrows in bark with orange fissures

*Wildlife value:* limited

*Disturbance tolerance:* tolerates salt, drought, and periodic flooding

*Additional resources:* Robert W. Freckmann Herbarium, *Gymnocladus dioicus*
**LINDEN**

**American linden, basswood (Tilia americana)**

*Size / Form:* 60–80’ tall, 40–50’ wide; oval form  
*Site requirements:* full sun to partial shade; wet-mesic woods; loamy soil, pH 6.5–7.5  
*Growth rate:* moderate  
*Attractive features:* fragrant pale yellow flowers in summer; large heart-shaped leaves, yellow fall foliage  
*Wildlife value:* native bees and honeybees for nectar  
*Disturbance tolerance:* sensitive to salt, air pollution, and soil compaction  
*Additional resources:* Robert W. Freckmann Herbarium, Tilia americana

**MAPLE**

**Red Maple (Acer rubrum)**

*Size / form:* 75–100’ tall, 35–75’ wide; oval to round  
*Growth rate:* moderate to fast  
*Site requirements:* shade tolerant, wet to medium forests; tolerant of poorly drained and compacted soil, pH range 4.5–6.5  
*Growth rate:* moderate to fast  
*Attractive features:* gray smooth bark when young, red cast from flowers in early spring, light green in summer; usually red foliage in fall  
*Disturbance tolerance:* sensitive to salt  
*Wildlife value:* high for native bees and white-tailed deer; excellent cover for birds and other animals  
*Additional resources:* Robert W. Freckmann Herbarium, Acer rubrum

**OAK**

**Swamp white oak (Quercus bicolor)**

*Size / Form:* 50–75’ tall, 50–60’ wide; oval, wide-spreading with age  
*Site requirements:* full sun; tolerant of wet soil; needs acid soil or will get chlorotic, pH 6.0–6.5  
*Growth rate:* slow to moderate  
*Attractive features:* dark green foliage, golden yellow in fall  
*Wildlife value:* cover for birds and mammals; acorns are food for birds and mammals  
*Disturbance tolerance:* tolerant of soil compaction; resistant to salt and drought stress  
*Additional resources:* Robert W. Freckmann Herbarium, Quercus bicolor
**Bur oak (Quercus macrocarpa)**

*Size / Form:* 70–100’ tall, 75–100’ wide; wide-spreading, rounded

*Site requirements:* full sun; adaptable to most soils, pH 4.6–8.0

*Growth rate:* slow

*Attractive features:* deeply furrowed bark; wide spreading growth form

*Wildlife value:* cover for birds and mammals; acorns are food source for wildlife

*Disturbance tolerance:* sensitive to compaction

*Additional resources:* Robert W. Freckmann Herbarium, Quercus macrocarpa

**Pin oak (Quercus palustris)**

*Size / Form:* 70–80’ tall, 40–50’ wide; pyramidal with tight branching

*Site requirements:* full sun; moist to wet poorly drained clay soils, pH 5.5–6.5

*Growth rate:* fast

*Attractive features:* scarlet red late fall foliage

*Wildlife value:* acorns are food source for wildlife

*Disturbance tolerance:* resistant to soil compaction, salt, and drought

*Additional resources:* Robert W. Freckmann Herbarium, Quercus palustris

**SERVICEBERRY**

**Serviceberry, Juneberry, Shadbush (Amelanchier spp.)**

*Size / form:* varies

*Site requirements:* partial to open sun; well- to moderately well-drained soil, pH 6.1–6.5

*Growth rate:* moderate

*Attractive features:* large white flowers late April–early May

*Disturbance tolerance:* sensitive to soil compaction, tolerates dry conditions

*Wildlife value:* great cover for birds and other animals; berries are plentiful food source for birds

*Additional resources:* Robert W. Freckmann Herbarium, Amelanchier spp.

**Reference:**