FORREST KEELING nursery

NATIVE OAKS AND HICKORIES

for conservation and agroforestry

For more than 5000 years, oak and hickory dominated our Midwest hardwood forests. They are the **keystone species** of our ecosystems. About 75% of the Midwest forest's trees are oak or hickory.

Hickories and oaks are important members of Missouri's forests, critical to **quality biodiversity.** They provide **food** for a broad variety of wildlife. Besides their acorns and nuts, they attract protein-rich insects vital to songbird reproduction. Their dense and sturdy branching offers safe **cover and nesting.** A mixed herbaceous **understory thrives** in the vibrant soil under their dense canopy. As maple and beech understory increases, forest biodiversity declines. This has a direct correlation to reduced insect and bird populations and soil erosion.

Oaks are strong, long-lived, and part of the American culture. They provided one-half of the hardwood that built our nation. There are **hundreds of North American oak species.** This is due in part to their tendency to cross-pollinate. Most are large and deciduous. Each is polygamous with male and female flowers on the same tree.

There are **two primary groups of oaks, white and red** (or black) oaks. Red oak leaf lobes are pointed and have tiny bristle tips. Since red oak acorns take two years to mature, both small, new, and large, mature acorns appear together. These acorns are generally yellow and more bitter than white oaks.

White oak leaves tend to have wavy lobes, without bristle tips. Their sweet acorns were part of the diet of Native Americans. They're also preferred by wildlife. **Chestnut oaks** are a subdivision of white oak. Their leaves have wavy or toothed edges without bristle tips. The chestnut oak survives well on steep, rocky sites where other oaks in its range cannot. Acorns of chestnut oak develop singly or in pairs. They are also a wildlife staple.

The other signature tree of Midwest forests is the hickory. Trees of the genus Carya comprise a smaller group of about 25 species found in East Asia and North America. **Hickories are divided into two major groups: pecan hickories and true hickories:**

1. **True hickories** have 5–7 leaflets. At the end of each twig is a large egg-shaped bud. Midwest species in this group include pignut, shellbark, shagbark, black, and mockernut. The uncommon sand hickory *(C. pallida)* is also in this group. It occurs only in the Bootheel, on sandy or gravelly soils in upland areas.
2. **Pecan hickories** have more than 7 sickle-shaped leaflets. The twig presents an elongated and flattened terminal bud. Missouri's species in this group include pecan, bitternut, and water hickory.

Of these, pecan is the largest species, reaching 130 feet in height. Shagbark, mockernut, bitternut, shellbark, and water hickory may reach 100 feet. The rest are, at most, medium-sized trees. Pignut matures at 80 feet; black hickory, at 70 feet; and sand hickory, at 50 feet.

Over time, **oak and hickory trees altered and defined the Midwest landscape.** They made our forests a rich and productive corridor for man and wildlife. Their durable hard mast of acorns and nuts sustained wildlife throughout the year. Their spreading roots held erosive soils.

In fall, a thick blanket of their leaves built both soil fertility and its ability to hold moisture. As those acidic leaves broke down, they altered the soil's pH balance.

Together, our oaks and hickories defined the Midwest forests. They made our forests a rich and productive corridor for man and wildlife.

PHOTO BY HENRY DOMKE

"Letting forests regrow naturally has the potential to absorb up to 8.9 billion metric tons of carbon dioxide from the atmosphere each year through 2050, while still maintaining native grasslands and current levels of food production.

That's the equivalent of soaking up one-quarter of global fossil fuel emissions from the atmosphere every year. This is on top of the carbon sponge already provided by existing forests, which currently absorb around 30 percent of fossil fuel emissions each year."

~The Nature Conservancy

NATIVE OAKS AND HICKORIES

FROM CHALLENGES COME OPPORTUNITIES FOR IMPROVED PRODUCTION

Native plants with dominant tap roots are difficult to grow. This feature also led to **high mortality after transplantation.** This limitation also suppressed the commercial production of valuable native hardwood species. including oaks, hickories, and pecans.

Growing native species from seed helps preserve a forest's native plant diversity. This diversity is vital to sustain unique environments for a variety of wildlife. Plant diversity requires propagation by seed rather than asexual methods. e.g., vegetative cuttings or tissue culture (cloning). Plants produced by seed are like siblings. They may come from the same parents yet have different appearances.

Appropriate **provenance** (seed source and local ecotypes) **is also important** on sensitive restoration sites. Forrest Keeling collects quality seeds from around the country. The **seed is identified and coded** to maintain the seed source of all **RPM-produced container plants** with county and state Federal Information Processing Standards (FIPS) codes.

FORREST KEELING FINDS SOLUTIONS IN ITS RPM (ROOT PRODUCTION METHOD®)

Forrest Keeling answered these challenges and others by creating their renowned **RPM (Root Production Method®) production technology.** Wayne Lovelace, former President and current CEO, developed the process. **The RPM-production method improves plant survival and speeds regeneration. These results are critical for remediation and restoration sites** that focus on oak and hickory.

Awarded a methodology patent, **RPM is a 12-step, all-natural growing process.** The steps begin with our superior seed selection and proprietary growing medium. Next is seed stratification followed by inoculation of young plants with mycorrhizae. We then perform several steps of root air pruning at specific depths.

Timed steps are critical during the germination and development of the young plant. The **proprietary growing medium** provides the necessary nutrients needed to sustain accelerated growth. Our **balanced growing media exhibits vibrant microbial activity.** Also, the media each RPM plant carries to its planting site continues to **help build healthy soil at the site.**

Air pruning eliminates the dominant tap root. This encourages the proliferation of lateral roots and accelerated plant growth. Hormones produced in the abundant root tips foster early fruit and nut production. Studies demonstrate that **RPM-produced plants grow, flower, and fruit twice as fast.**

RPM production speeds mast production by years, and in some situations, by decades. This early seed production allows natural, **successional regeneration.** Robust, RPM-produced root systems enable **successful transplantation on the toughest restoration sites.** Typical restoration sites include wetlands, which are regularly inundated with flooding. Other challenging restorations include mining site reclamation, reforestation, and restoration of critical ecosystems.

RPM plants installed with Forrest Keeling's **Walk A-Way System** enjoy **over 95% survival rates.** This system allows the contractor to plant a remote site with no further care given to the plants. Independent research on **the RPM system garnered over a dozen peer-reviewed journal articles.** But it is the customer loyalty that provides the best testimony. Our RPM-produced container plants are **the choice for conservation remediation projects** across the country and around the world.

NATIVE OAKS AND HICKORIES

CARBON STORAGE HELPS THE ENVIRONMENT AND DIVERSIFIES INCOME

Farmers who integrate trees on their land can also use them to **capture carbon** and further **add to their bottom line.**

Trees draw carbon dioxide from the atmosphere **through a process called photosynthesis.** Trees use this natural process to produce sugars needed to make wood for growth. Every part of a tree stores carbon, from the trunks, branches, leaves, and roots. This process not only helps mitigate climate change but also improves soil quality. As a tree grows, it stores more carbon **in its accumulated tissue.** Studies show that oak, hickory, and other **native trees surpass non-natives in carbon storage.**

Farmers can use their trees to **diversify income sources using carbon credits.** The concept allows companies responsible for emitting CO2 to 'offset' the damage by purchasing credits. Farmers create these credits by removing CO2 from the air. The companies then buy the credits measured in stored carbon. Each credit represents one metric ton of carbon reduced or removed. A company can claim to be carbon neutral by purchasing enough credits to counteract its emissions.

The farmer can also make money when he harvests the wood for construction. The stored carbon will remain in the wood until it decomposes or burns.

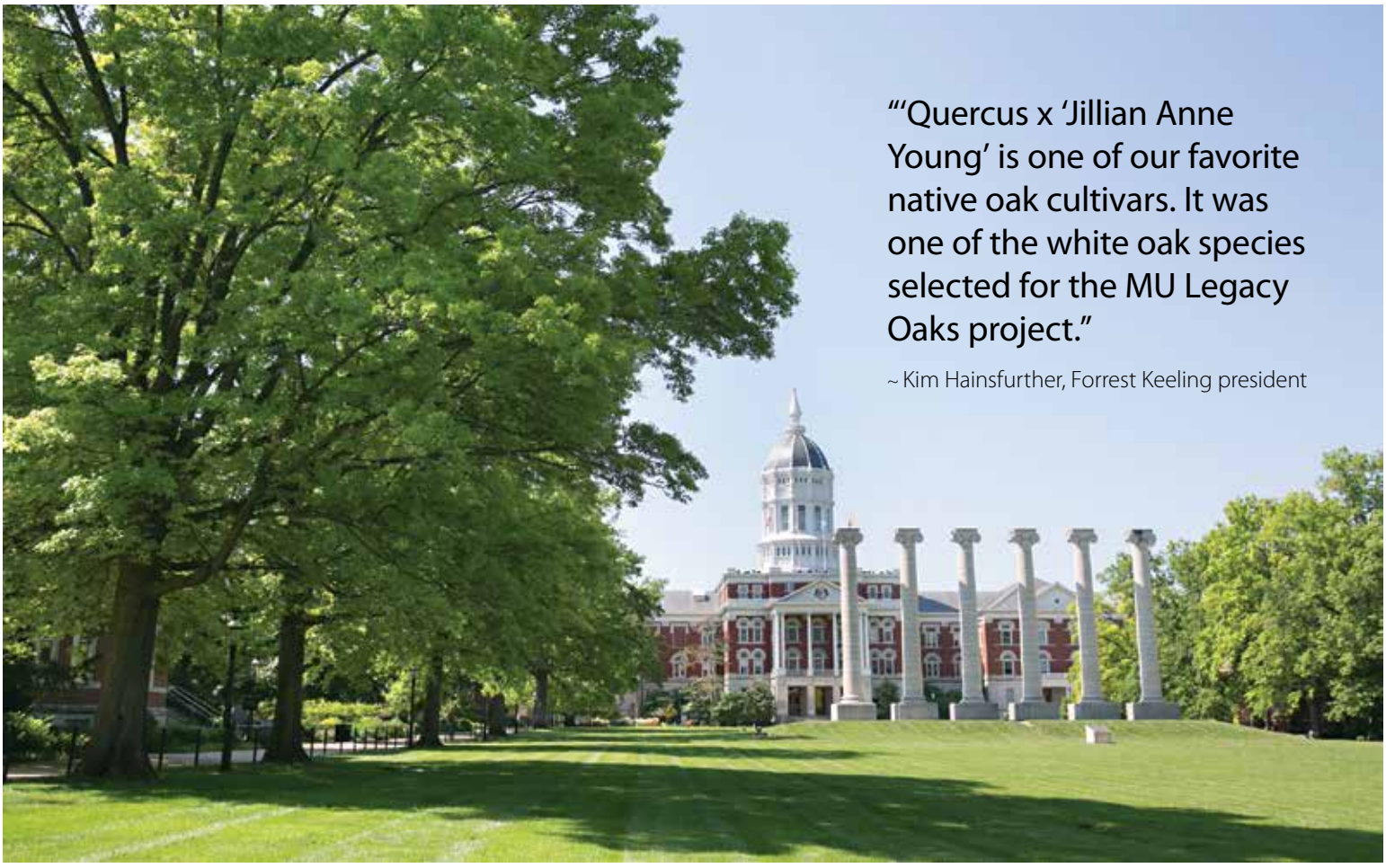
NATURAL OAK HYBRIDS

Forrest Keeling grows 39 species of oak. In fact, over the past three decades, the oak genus has become our primary focus. Quercus is one genus that crossbreeds, or hybridizes, with ease.

A hybrid benefits from the combined traits of two or more species. Hybrids continue to produce fertile offspring with 'hybrid vigor'. Many white oak hybrids offer advantages like **faster growth and heavier acorn crops.** Some produce earlier crops or larger acorns.

Characteristics like these benefit wildlife. **RPM seedlings grow faster,** often even feet or more in their first growing season. This can increase tree survival and speed mast production on conservation plantings. All oaks tend to be disease and insect-resistant. But **hybrids offer greater resistance and natural vigor.** This resistance is one reason we choose to work with oak hybrids.

The Jillian Oak was named in honor of Kim's late daughter, Jillian. It was one of the white oaks selected for the **MU Legacy Oaks project.** 'Jillian' joins about a dozen other native oak cultivars for the project. This project is maturing trees to replace the old pin oaks on UMC's Francis Quadrangle. Like other Midwest oak trees, the 'Jillian' is long-lived—as much as 300 years.



"'Quercus x 'Jillian Anne Young' is one of our favorite native oak cultivars. It was one of the white oak species selected for the MU Legacy Oaks project."

~ Kim Hainsfurther, Forrest Keeling president

NATIVE OAKS AND HICKORIES

PECAN HICKORIES:

Carya aquatica – Water Hickory

Occurs on wet, poorly drained sites. Withstands spring flooding well because it breaks dormancy later than many other trees.

ID tip:

The bark of older trees is light brown, splitting into long, plate-like, red-tinged scales. Occurs on wet sites.

Fast facts:

- Zone 3-9
- Wetland indicator type: (N) (W) (OBL)
- Natural community: Wetland
- Preferred soil type and moisture: Wet
- Mature size - H: 75-100' W: 60-70'

Carya illinoensis – Pecan

Large, lowland tree; largest of hickories. Sweet, edible nuts are favored by wildlife and people. Excellent specialty crop.

ID tip:

Large tree with a narrow crown. Oval fruits have thin, winged, aromatic husk that splits along its four ridges.

Fast facts:

- Zone 5-9
- Wetland indicator type: (N) (W) (FACU) (FACW) (E)
- Natural community: Wetland, Forest
- Preferred soil type and moisture: Moist, well-drained
- Mature size - H: 75-100' W: 40-70'

Carya cordiformis – Bitternut Hickory

Large tree for wetland and remediation projects; Food and cover for wildlife. Bitter nutmeats. Commercial specialty crop for wood.

ID tip:

The Bitternut Hickory can be identified from all other native trees by its long, scaly, yellow buds.

Fast facts:

- Zone 4-9
- Wetland indicator type: (N) (W) (FAC)
- Natural community: Wetland, Forest
- Preferred soil type and moisture: Wet to moist, well-drained
- Mature size - H: 50-80' W: 30-50'

NATIVE OAKS AND HICKORIES

TRUE HICKORIES:

Carya glabra – Pignut Hickory

Hardy, slow-growing tree best for dry, upland sites. Bitter, thick-shelled nuts.

ID tip:

Tree has dark grey bark. Its bitter nuts are pear-shaped and have four ridges on the husks.

Fast facts:

- Zone 4-9
- Wetland indicator type: (N) (FACU-) (FACU)
- Natural community: Forest
- Preferred soil type and moisture: Dry uplands
- Mature size - H: 50-80' W: 25-40'

Carya lacinosa – Shellbark Hickory

Produces the largest nut of hickories; also called 'Kingnut'. Thick nut splits readily.

ID tip:

Mature bark like that of shagbark hickory. However shagbark hickory is typically an upland species while shellbark hickory is a bottomland species. Also, the shellbark hickory has larger husks and nuts than those of the shagbark hickory.

Fast facts:

- Zone 5-8
- Wetland indicator type: (N) (W) (FAC) (FACW) (E)
- Natural community: Wetland, Forest
- Preferred soil type and moisture: Moist to dry
- Mature size - H: 60-80' W: 40-60'

Carya ovata – Shagbark Hickory

Adaptable species. The common name refers to its loose, distinctive bark. Large, edible nuts grown as specialty crop.

ID tip:

The bark is scaly and raised at the edges, giving it a shaggy appearance.

Fast facts:

- Zone 4-8
- Wetland indicator type: (N) (FACU) (FACU-) (FACU+) (E)
- Natural community: Forest
- Preferred soil type and moisture: Moist to dry
- Mature size - H: 70-90' W: 50-70'

NATIVE OAKS AND HICKORIES

TRUE HICKORIES:

Carya texana – Black Hickory

Drought-tolerant hickory. Tolerates a variety of soils. Excellent mast bearing for poor or dry sites. Sweet, thin-shelled, edible nuts.

ID tip:

Bark is dark gray to black with a tight "diamond" pattern. The leaves usually have a dense coating of scales, imparting a rusty brown color.

Fast facts:

- Zone 4-9
- Wetland indicator type: (N) (FACU) (E)
- Natural community: Forest
- Preferred soil type and moisture: Moist to dry
- Mature size - H: 60-80' W: 40-60'

Carya tomentosa – Mockernut Hickory

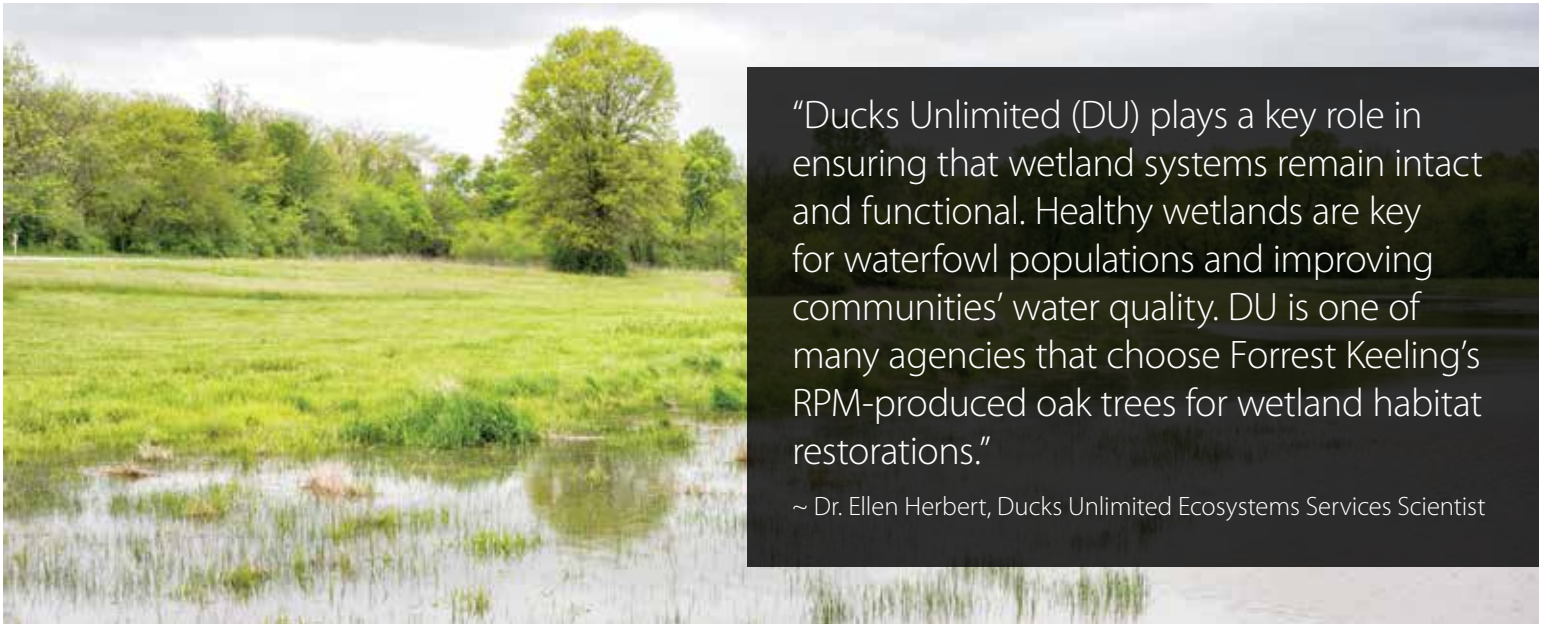
Rounded, open crown. Best performance on moist soils in full sun to part shade. Thick-shelled, edible nuts. Tolerates black walnut.

ID tip:

Crushed leaves smell spicy, like orange rind. The bark is tightly networked, ridged, and silvery.

Fast facts:

- Zone 4-9
- Wetland indicator type: (N) (FAC) (E)
- Natural community: Forest
- Preferred soil type and moisture: Moist
- Mature size - H: 60-80' W: 40-60'



"Ducks Unlimited (DU) plays a key role in ensuring that wetland systems remain intact and functional. Healthy wetlands are key for waterfowl populations and improving communities' water quality. DU is one of many agencies that choose Forrest Keeling's RPM-produced oak trees for wetland habitat restorations."

~ Dr. Ellen Herbert, Ducks Unlimited Ecosystems Services Scientist

NATIVE OAKS AND HICKORIES

WHITE OAKS:

Quercus alba – White Oak

Large, long-lived oak. Showy fall foliage. Smooth, medium-sized acorns favored by deer. Less susceptible to oak wilt than red oak.

ID tip:

White oak twigs are shiny, hairless, and have a red-to-purplish hue. Lobed leaves have whitish undersides.

Fast facts:

- Zone 3-9
- Wetland indicator type: (N) (FACU-) (FACU+)
- Natural community: Forest, Savanna
- Preferred soil type and moisture: Moist to dry
- Mature size - H: 50-80' W: 50-80'

Quercus bicolor -Swamp White Oak

Large tree with a broad crown. Occurs on moist bottomlands. Good urban tree choice for compacted soils with occasional drought.

ID tip:

The swamp oak does not have deeply cut lobed leaves like the chestnut oak. The most distinctive feature of the swamp white oak is the peeling bark on the branches.

Fast facts:

- Zone 3-8
- Wetland indicator type: (N) (W) (FACU+) (OBL)
- Natural community: Wetland, Forest, Savanna
- Preferred soil type and moisture: Moist
- Mature size - H: 50-60' W: 50-60'

Quercus bicolor BUO – Bucks' Unlimited Oak®

Selection of the native swamp white oak created through FKN and University of Missouri collaboration. Fast-growing prolific producer of sweet acorns that attract deer, waterfowl, and upland game birds.

Fast facts:

- Zone 4-8
- Wetland indicator type: (NC)
- Preferred soil type and moisture: Moist
- Mature size - H: 50-60' W: 50-60'

NATIVE OAKS AND HICKORIES

WHITE OAKS:

Quercus lyrata – Overcup Oak

Uniform, rounded crown for dense shade. Rich yellow fall color. Highly adaptive. Excellent for difficult, urban sites.

ID tip:

Acorns of overcup oaks are almost completely covered by their knobby caps. The leaves of overcup oak have a narrow base and irregular lobes with deep sinuses.

Fast facts:

- Zone 3-9
- Wetland indicator type: (N) (W) (OBL)
- Natural community: Wetland
- Preferred soil type and moisture: Moist
- Mature size - H: 40-60' W: 40-60'

Quercus macrocarpa – Bur or Mossycup Oak

Tolerates a variety of moisture and soil conditions in full sun. Largest leaves and acorns of all oaks; food for wildlife.

ID tip:

Rugged, thick bark with long ridges. Massive acorn cap sometimes covers most of acorn. Large, upper branches can make severe angles with the central trunk.

Fast facts:

- Zone 3-8
- Wetland indicator type: (N) (W) (FACU) (FAC)
- Natural community: Prairie, Wetland, Forest, Glade
- Preferred soil type and moisture: Moist to dry
- Mature size - H: 60-80' W: 60-80'

Quercus michauxii – Swamp Chestnut Oak

Dense shade and good red fall color. Large, sweet acorns for wildlife and livestock. Good choice for urban streets and yards.

ID tip:

Leaves have wavy margins like chinkapin oak, but lobe tips are more rounded, angling more outward.

Fast facts:

- Zone 5-9
- Wetland indicator type: (N) (W) (FACW-) (FACW)
- Natural community: Wetland, Forest
- Preferred soil type and moisture: Moist to well-drained
- Mature size - H: 40-60' W: 30-50'

NATIVE OAKS AND HICKORIES

WHITE OAKS:

Quercus montana (primus) – Chestnut Oak

Also known as Q. prinus. It can survive steep, dry sites better than other oaks. Silvery bark. Sweet acorns are a wildlife staple.

Fast facts:

Unlike other white oaks, chestnut oak bark is dark and deeply ridged. The acorn is large and dark brown with a smooth edge on the outer margin of the cap.

- Zone 4-8
- Wetland indicator type: (N) (UPL) (FACU-)
- Natural community: Forest, Glade
- Preferred soil type and moisture: Well-drained to dry
- Mature size - H: 50-70' W: 50-70'

Quercus muehlenbergii – Chinkapin Oak

Medium-sized oak. Sweet, edible acorn. Useful on limestone soils. Toothed leaves turn yellow-orange in fall.

ID tip:

Leaves are distinctively coarsely serrated or wavy along the entire margin with 8–13 teeth per side.

Fast facts:

- Zone 5-7
- Wetland indicator type: (N) (FAC)
- Natural community: Forest, Glade
- Preferred soil type and moisture: Well-drained to dry
- Mature size - H: 40-60' W: 50-70'

Quercus prinoides – Dwarf Chestnut Oak

Smaller tree size makes a good choice for urban landscapes. Small acorn is sweet and edible. Food for birds and mammals.

ID tip:

Shrubby habit, usually growing in multistemmed clumps or thickets.

Fast facts:

- Zone 4-8
- Wetland indicator type: (N) (FAC)
- Natural community: Forest, Glade
- Preferred soil type and moisture: Well-drained to dry
- Mature size - H: 10-15' W: 8-10'

NATIVE OAKS AND HICKORIES

WHITE OAKS:

Quercus stellata – Post Oak

Small to medium-sized tree found in poor, rocky, or sandy sites. Dense crown with strong branching. Thick bark is more resistant to fire damage.

ID tip:

Lobed leaves have general cross shape.

Fast facts:

- Zone 5-9
- Wetland indicator type: (N) (UPL) (FACU)
- Natural community: Forest, Glade
- Preferred soil type and moisture: Well-drained to dry
- Mature size - H: 35-50' W: 35-50'

Quercus x bebbiana (White x Bur) – Bebbs Oak

Natural cross between white and bur oaks. Oval crown. Acorns have a deep cup. Provides good cover and yield of acorns for wildlife. Symmetrically branched.

Fast facts:

- Zone 5-11
- Preferred soil type and moisture: ???
- Mature size - H: 40-50' W: 40-50'

Quercus x bicolor 'Jackiana' – Jackiana Oak

Natural cross of white and swamp white oaks. Vigorous growth and impressive form. Upright growth habit. Outstanding red fall foliage. Faster growth than Q. alba

Fast facts:

- Zone 3-9
- Preferred soil type and moisture: ???
- Mature size - H: 60-70' W: 35-45'

NATIVE OAKS AND HICKORIES

WHITE OAKS:

Quercus x 'Jillian Anne Young' – Jillian Oak

Fast-growing natural hybrid of swamp white X bur X overcup oaks. Leaf shape like bur or overcup with white undercolor like swamp white. Pyramidal shape.

Fast facts:

- Zone 5-7
- Preferred soil type and moisture: ???
- Mature size - H: 45-60' W: 35-40'

Quercus x schuettei – Schuette Oak

Natural cross of bur and swamp white with prolific acorn production and attractive form. Tolerates wetland, upland, and various pH levels.

Fast facts:

- Zone 5-7
- Preferred soil type and moisture: ???
- Mature size - H: 40-50' W: 40-50'

Quercus x schuettei 'Kimberley' – Kimberley Oak

Natural hybrid of swamp white and bur oaks. Grows best in full sun on moist, rich soils. Good for wet soils. Prolific acorn production with an average of 100 pounds annually. Excellent form.

Fast facts:

- Zone 4-8
- Preferred soil type and moisture: ???
- Mature size - H: 50-70' W; 40-60'

NATIVE OAKS AND HICKORIES

RED OAKS:

Quercus coccinea – Scarlet Oak

Fast-growing, drought-tolerant with scarlet fall color. Open, rounded crown for good shade.

ID tip:

Scarlet Oak has the brightest, most prominent fall color of any of the red oaks. Leaves are like those of pin oak but with narrower, angled sinuses.

Fast facts:

- Zone 4-9
- Wetland indicator type: (N) (FACU)
- Natural community: Forest, Glade
- Preferred soil type and moisture: Well-drained to dry
- Mature size - H: 50-70' W: 40-50'

Quercus ellipsoidalis – Northern Pin Oak

Pyramidal habit in youth, more oval with maturity. Dark, shiny green leaves turn russet red in fall.

ID tip:

The bark is a dark rusty brown, and is scaly with broad, thin, rounded ridges. The bark ridges appear to have shiny stripes running down their center. Leaves have deeper sinuses and shinier surfaces than those of Quercus rubra.

Fast facts:

- Zone 4-9
- Wetland indicator type: (N) (FACU)
- Natural community: Forest, Glade
- Preferred soil type and moisture: Well-drained to dry
- Mature size - H: 50-70' W: 40-50'

Quercus falcata – Southern Red Oak

Attractive upland tree with straight trunk, open crown. Fast-growing. Good drought and air pollution tolerance.

ID tip:

Southern red oaks are the larval host for the banded hairstreak and white hairstreak butterflies.

Fast facts:

- Zone 6-9
- Wetland indicator type: (N) (FACU-) (FACU)
- Natural community: Forest, Glade
- Preferred soil type and moisture: Well-drained to dry
- Mature size - H: 60-80' W: 40-50'

NATIVE OAKS AND HICKORIES

RED OAKS:

Quercus imbricaria – Shingle Oak

Leaves do not have characteristic lobes, but instead are long and narrow. Drought and black walnut tolerant.

ID tip:

Leaves are simple and unlobed with bristle at the tip.

Fast facts:

- Zone 6-9
- Wetland indicator type: (N) (W) (FACU) (FAC)
- Natural community: Wetland, Forest, Glade
- Preferred soil type and moisture: Moist to dry
- Mature size - H: 40-60' W: 40-60'

Quercus marilandica – Blackjack Oak

Small to medium-sized oak. Grows best in acidic, dry to average, well-drained soils in full sun. Thick bark is more resistant to fire damage. Occurs in open, barren fields and on ridges

ID tip:

Leaves have three lobes at most and often are entirely flat across at the broad tip.

Fast facts:

- Zone 6-9
- Wetland indicator type: (N) (FACU)
- Natural community: Glade
- Preferred soil type and moisture: Well-drained to dry
- Mature size - H: 20-40' W: 20-40'

Quercus nigra – Water Oak

Glossy foliage persists well into winter. Has very small acorns. Good food for wildlife. Weaker wood is susceptible to breakage.

ID tip:

Bark is brown and smooth when the tree is young. Bark becomes gray black, furrowed, and rough with age.

Fast facts:

- Zone 6-9
- Wetland indicator type: (N) (W) (FAC) (FACW)
- Natural community: Wetland, Forest
- Preferred soil type and moisture: Moist
- Mature size - H: 50-80' W: 50-80'

NATIVE OAKS AND HICKORIES

RED OAKS:

Quercus pagoda – Cherrybark Oak

Valuable red oak with larger, better form than southern red oak. Excellent for timber. Good acorn production.

ID tip:

The leaf has a unique, upside-down pagoda leaf shape. The tree favors low, wet environments, unlike the southern red oak.

Fast facts:

- Zone 6-9
- Wetland indicator type: (N) (FACW)
- Natural community: Wetland, Forest, Glade
- Preferred soil type and moisture: Moist to well-drained
- Mature size - H: 60-110' W: 60-90'

Quercus palustris – Pin Oak

Pyramidal shape in youth, then more oval, mature crown. Fast-growing, tolerates wet and compact soils in full sun.

ID tip:

The tree is strongly pyramidal. Acorns are smaller than similar red oaks. Leaves are like those of scarlet oak but with wider sinuses perpendicular to the leaf's midrib.

Fast facts:

- Zone 4-8
- Wetland indicator type: (N) (W) (FAC) (FACW)
- Natural community: Wetland, Forest
- Preferred soil type and moisture: Moist to well-drained
- Mature size - H: 50-70' W: 40-60'

Quercus phellos – Willow Oak

Beefy, willow-like leaves. Fast-growing. Tolerates poorly drained soils; prefers acid soils and full sun.

ID tip:

Leaves are simple and elliptical like willow leaves.

Fast facts:

- Zone 5-9
- Wetland indicator type: (N) (W) (FAC+) (FACW)
- Natural community: Wetland, Forest
- Preferred soil type and moisture: Moist to well-drained
- Mature size - H: 40-75' W: 25-50'

NATIVE OAKS AND HICKORIES

RED OAKS:

Quercus rubra – Northern Red Oak

Good, fast-growing street tree. Tolerates pollution and compacted soil. Fall foliage russet to bright red.

ID tip:

Acorns have shallow caps with tight scales. Bark has long, parallel ridges.

Fast facts:

- Zone 5-9
- Wetland indicator type: (N) (FACU-) (FACU+)
- Natural community: Prairie, Forest, Glade
- Preferred soil type and moisture: Moist to well-drained
- Mature size - H: 40-75' W: 25-50'

Quercus shumardii – Shumard Oak

Stately, fast-growing tree with good fall color. Adaptable to a variety of well-drained, urban sites. Wildlife favors its acorns.

ID tip:

Leaf lobes are wider at their tip than at their base, and notches between lobes rounded, over halfway to the central vein.

Fast facts:

- Zone 5-9
- Wetland indicator type: (N) (W) (FAC) (FACW-)
- Natural community: Wetland, Forest, Glade
- Preferred soil type and moisture: Well-drained to dry
- Mature size - H: 40-60' W: 30-40'

Quercus texana – Nuttall's Oak

Tolerant, insect and disease-resistant oak for urban use. Grows quickly, good transplant success. Rich fall color.

ID tip:

Leaves are smaller than those of similar-looking Shumard or pin oaks.

Fast facts:

- Zone 6-9
- Wetland indicator type: (N) (UPL) (FACU)
- Natural community: Wetland, Forest
- Preferred soil type and moisture: Well-drained to dry
- Mature size - H: 50-80' W: 40-65'

NATIVE OAKS AND HICKORIES

RED OAKS:

Quercus velutina – Black Oak

Good street or shade tree. Prefers acid or dry soils. Tolerates alkaline soil and salt. Deep orange fall foliage.

ID tip:

Bark is black or dark brownish grey.

Fast facts:

- Zone 3-9
- Wetland indicator type: (N) (FACU)
- Natural community: Forest
- Preferred soil type and moisture: Well-drained to dry
- Mature size - H: 50-60' W: 50-60'