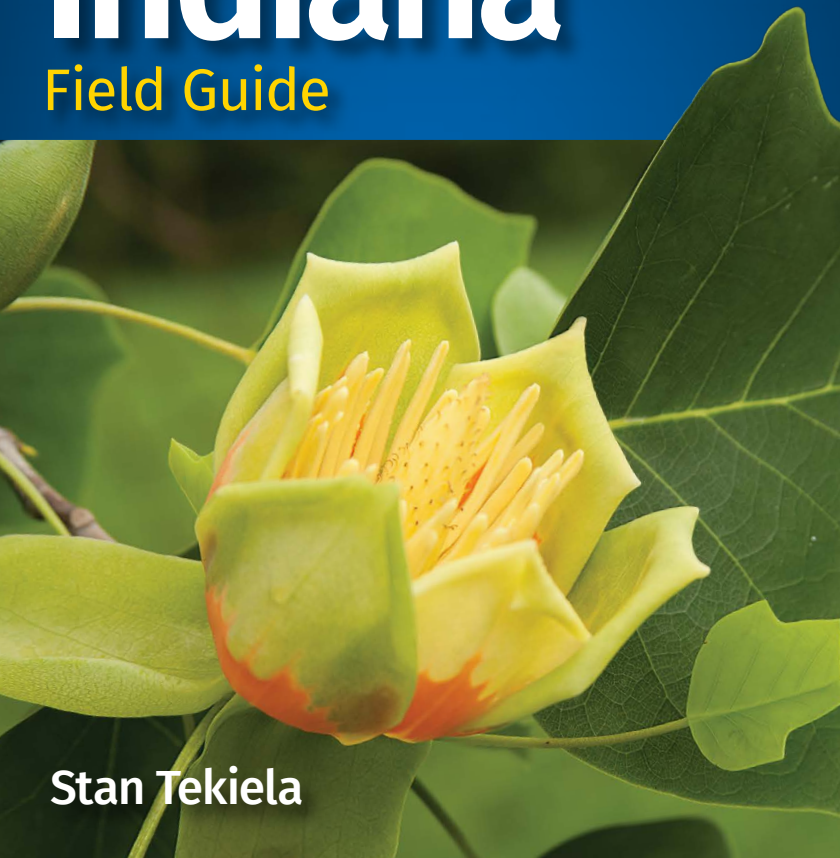


2ND EDITION

Trees *of* Indiana

Field Guide



Stan Tekiela

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LEAF BASICS

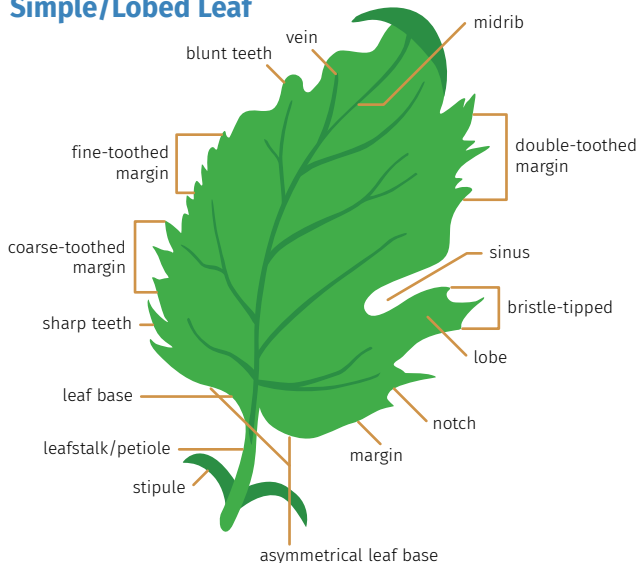
It's easier to identify trees and communicate about them when you know the names of the different parts of a leaf. For instance, it is more effective to use the word “sinus” to indicate an indentation on an edge of a leaf than to try to describe it.

The following illustrations show coniferous needles in cross section and the basic parts of deciduous leaves. The simple/lobed leaf and compound leaf illustrations are composites of leaves and should not be confused with any actual leaf of a real tree.

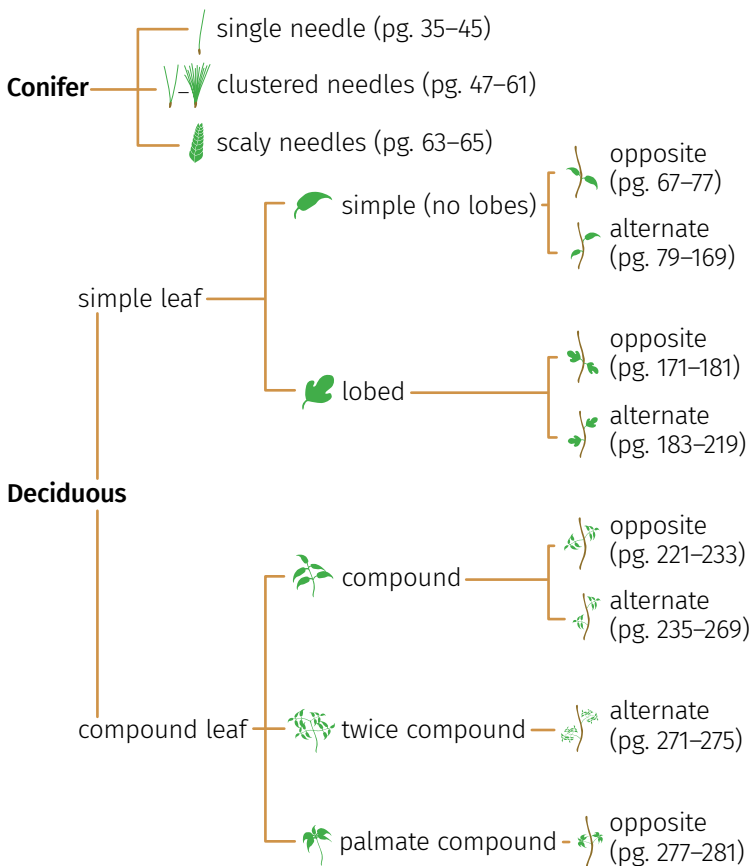
Needle Cross Sections



Simple/Lobed Leaf



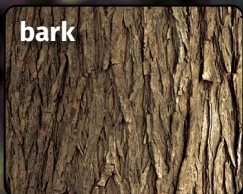
FINDING YOUR TREE IN A SECTION



The smaller needles and leaves tend to be toward the front of each section, while larger sizes can be found toward the back. Check the icon in the lower right corner of text pages to compare relative shape.



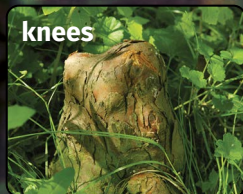
bark



cone



knees





Bald Cypress

Taxodium distichum

SINGLE
NEEDLE



Family: Cypress (Cupressaceae)

Height: 80–100' (24.5–30.5 m)

Tree: large conical tree, enlarged straight trunk with a flared base (buttress), spreading into ridges, widely spreading branches, crown often pointed

Needle: single needle, $\frac{1}{2}$ – $\frac{3}{4}$ " (1–2 cm) long, in 2 rows on slender green twigs, pointed at the tip, soft and flexible to touch, appearing feather-like, yellowish green above, whitish below

Bark: brown to gray, with narrow fibrous ridges, peeling off in long strips

Cone: green, turning gray to brown when mature, $\frac{3}{4}$ –1" (2–2.5 cm) wide, solitary or in small clusters at the end of branch, several 4-sided woody cone scales

Fall Color: brown

Origin/Age: native; 500–750 years

Habitat: wet soils, swamps, by slow rivers that flood often, can grow in dry upland soils, sun to partial shade

Range: extreme southern tip of Indiana

Stan's Notes: Called "Bald" since it's a deciduous conifer, losing its leaves (needles) in fall and growing new ones in spring. Produces a large flaring or fluted base, which helps stabilize it when growing in soft, wet soils. The roots produce large growths called knees (see inset) that project above the ground or water level. A long-lived tree, some are more than 2,000 years old and are among the oldest living things in North America. Often called the Sequoia of the Midwest, reaching over 100 feet (30.5 m) tall and nearly 40 feet (12 m) around at the base. Decay- and insect-resistant wood has been used to build boats and bridges. Its seeds are an important food for wildlife such as ducks and deer.

immature
cone

bark

cone





Jack Pine

Pinus banksiana

CLUSTERED
NEEDLES



Family: Pine (Pinaceae)

Height: 20–50' (6–15 m)

Tree: single trunk, many dead branches with very open irregular crown

Needle: clustered needles, 2 per cluster, $\frac{3}{4}$ –1½" (2–4 cm) long, widely forked; each needle is narrow, stiff, slightly twisted, sharply pointed, yellowish green

Bark: reddish gray to black, many loose scales or plates

Cone: yellow-green, turning brown to gray at maturity, woody, in pairs, often is curved, 1–2" (2.5–5 cm) long, stalkless, tip pointing down the twig

Origin/Age: non-native; 100–150 years

Habitat: dry, sandy or rocky soils, poor quality sites, sun

Range: throughout, planted in parks and yards

Stan's Notes: The northernmost pine tree species found in North America, often growing on rocky outcroppings and in other dry soils. A very fast-growing tree for the first 20 or so years. Also a pioneer species, being the first conifer to grow after a forest fire. Its hard, resinous cones, known as fire cones, can stay closed on the tree for many decades, opening only after exposure to the heat of a fire. Unopened cones are often gathered by squirrels for winter food. Michigan's and Wisconsin's Kirtland's Warbler depends upon the Jack Pine, nesting only in young Jack Pine stands that regrow after forest fires or timber harvests. The common name, "Jack," may refer to its wood, which is used to make levers to jack things up. Also known as Gray Pine, Scrub Pine, Banksian Pine or Hudson Bay Pine.



mature
cone

immature
cone

bark



Eastern Whitecedar

Thuja occidentalis

SCALY
NEEDLES



Family: Cypress (Cupressaceae)

Height: 30–50' (9–15 m)

Tree: pyramid shape, single or multiple trunks are often crooked or twisted, blunt or pointed dense crown

Needle: scaly needles, 1–2" (2.5–5 cm) long, made of scale-like needles, ¼" (.6 cm) long, that overlap each other; each scale-like needle is soft, with a rounded tip, flat in cross section, light green

Bark: gray and fibrous with shallow furrows, peeling in long strips

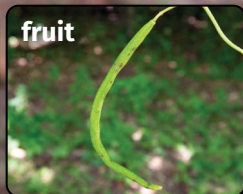
Cone: green, turning bluish purple with a white dust-like coating, then light brown at maturity, ½" (1 cm) long, upright in clusters, containing 2 tiny winged nutlets (seeds)

Origin/Age: native; 150–200 years (some reach 800 years)

Habitat: moist or wet soils, often in pure stands

Range: scattered in isolated locations in northern Indiana, planted in parks and yards

Stan's Notes: A common tree of bogs and swamps, and a favorite food of deer during winter. Slow growing but with a very long life, with some trees over 700 years old. Also known as Northern Whitecedar, Eastern Thuja or Eastern Arborvitae. The common name "Arborvitae," meaning "tree of life," may have come from French voyagers who used whitecedar to treat scurvy, a disease resulting from a lack of vitamin C. The lightweight wood was once used for canoe frames. One of only two species of *Thuja* in North America, it was introduced into Europe by the mid-1500s. More than 100 different varieties are now known for this tree.





Northern Catalpa

Catalpa speciosa

SIMPLE
OPPOSITE



Family: Trumpet-Creeper (Bignoniaceae)

Height: 50–75' (15–23 m)

Tree: single trunk, large round crown

Leaf: simple, heart-shaped, 6–12" (15–30 cm) in length, oppositely attached or whorls of 3 leaves, margin lacking teeth, dull green

Bark: light brown with deep furrows, flat-topped ridges

Flower: large, showy orchid-like flower is cream to white with yellow and purple spots and stripes, 2–3" (5–7.5 cm) long, in clusters, 5–8" (13–20 cm) wide, fragrant scent

Fruit: long bean-like green capsule, turning to brown at maturity, 8–18" (20–45 cm) long, splitting open into 2 parts, containing winged seeds

Fall Color: yellow-green, turning black

Origin/Age: native, 40–50 years

Habitat: rich moist soils

Range: southern quarter of Indiana, planted throughout cities, parks and old homesites

Stan's Notes: Catalpa tree leaves are among the largest leaves in the state. There are about a dozen catalpa species, two native to the U.S. It has been successfully planted along streets and boulevards in just about every city in Indiana. "Catalpa" is an Indigenous name for this tree, but it is also called Catawba, Indian Bean or Cigar Tree, which all refer to the large seedpods (fruit). Its large showy flowers bloom in spring and attract many insects. Twigs have a soft white pith.



bark



flower



fruit



American Basswood

Tilia americana

SIMPLE
ALTERNATE



Family: Linden (Malvaceae)

Height: 50–70' (15–21 m)

Tree: tall tree, single or multiple trunks from a common point on the ground, full round crown

Leaf: simple, heart-shaped, 3–7" (7.5–18 cm) in length, alternately attached, with asymmetrical leaf base, sharp-toothed margin, dull green above, lighter green below

Bark: light gray color and smooth when young, darkens with long, narrow, flat-topped ridges dividing into a short block with age, inner bark fibrous

Flower: creamy yellow flower, 1–2" (2.5–5 cm) diameter, fragrant scent

Fruit: nut-like green fruit, turning yellow when mature, round, ¼" (.6 cm) diameter, covered with light brown hairs, on a 1–2" (2.5–5 cm) long fruit stalk, hanging in clusters from a leaf-like wing

Fall Color: yellow, orange

Origin/Age: native; 150–200 years

Habitat: moist soils, partial shade to sun

Range: throughout

Stan's Notes: A long-lived, fast-growing tree that is well known for growing several trunks from the base of the mother plant. The light-weight soft wood is used for carving due to its smooth grain. From its flowers, bees produce a high-quality honey. Fibrous inner bark was once used by Indigenous Peoples to weave mats, rope and baskets. Also called American Linden or Basswood. White Basswood, once considered its own species, is now believed to be a variety of the American Basswood. Many cultivated varieties exist.

underside

bark

flower

fruit



Silver Maple

Acer saccharinum

LOBED
OPPOSITE



Family: Maple (Aceraceae)

Height: 75–100' (23–30.5 m)

Tree: single trunk, ascending branches, open crown

Leaf: lobed, 4–6" (10–15 cm) long, oppositely attached, 5–7 lobes, pointed tips, deep notches and double-toothed margin, dull green above with a silvery white color below

Bark: gray and smooth when young, becomes furrowed, long scaly strips, often peeling and curling at ends

Flower: tiny red dangling flower, ¼" (.6 cm) wide, on 1–2" (2.5–5 cm) long stalk

Fruit: pair of green winged seeds (samara), turning to brown, 1–2½" (2.5–6 cm) long

Fall Color: yellow to orange

Origin/Age: native; 100–125 years

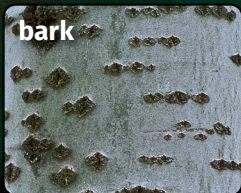
Habitat: wet to moist soils, often growing in pure stands in floodplains, shade

Range: throughout

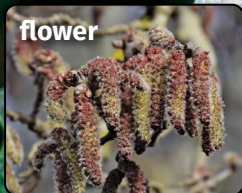
Stan's Notes: Usually seen growing in bottomlands or floodplains along rivers, where it is often the dominant tree. This is one of the first trees to bloom (flower) in spring, confusing many to think it is budding early. Bark of older trees is characteristic, with long strips that often peel and curl at ends. Produces heavy seed crops. Also called Silver-leaf Maple for the silvery appearance of the underside of leaves, and Soft Maple, which is also another name of the Red Maple (pg. 173). This name refers to the brittle branches (which often break off in windstorms), rather than to the wood being soft. The wood is actually very hard with a tight grain.



underside



bark



flower



fruit



White Poplar

Populus alba

LOBED
ALTERNATE



Family: Willow (Salicaceae)

Height: 40–60' (12–18 m)

Tree: medium-sized tree with single or multiple trunks, open, widely spreading crown

Leaf: lobed, maple-shaped, 2–5" (5–12.5 cm) in length, alternately attached, 3–5 pointed lobes, few rounded teeth, light green above and chalky white below, covered with white hairs, silky white when young

Bark: dark gray-green color and deeply furrowed near base, yellowish-white color with dark horizontal marks (lenticels) and smooth upper

Flower: catkin, 2–3" (5–7.5 cm) long, composed of many tiny flowers, ¼" (.6 cm) wide

Fruit: catkin-like fruit, 2–3" (5–7.5 cm) long, composed of many capsules that open and release many tiny cottony seeds, which float on the wind

Fall Color: yellow to brown

Origin/Age: non-native, introduced to the U.S. from Europe; 100–125 years

Habitat: wide variety of soils, sun

Range: throughout, planted in parks, yards and along roads

Stan's Notes: The maple-like lobed leaves of the White Poplar are unusual for a member of the *Populus* genus. Buds and leaf undersides are covered with tiny white hairs, giving newly budded leaves a whitish-colored appearance and the species its common name. Also known as Silver-leaf Poplar or European White Poplar, it was among the first trees that were introduced to North America from Europe during colonial times. A fast-growing tree with several varieties sold. Species name *alba* means "white." Now considered invasive.

fruit

bark

flower



White Oak

Quercus alba

LOBED
ALTERNATE



Family: Beech (Fagaceae)

Height: 50–70' (15–21 m)

Tree: single straight trunk, some gnarled and twisted
branches reach toward the ground, broad crown

Leaf: lobed, 4–8" (10–20 cm) long, alternately attached,
5–9 rounded lobes, notches deeply cut or shallow
and uniform in size and depth, often widest above
middle, lacking teeth, bright green above, paler
below, leaves often clustered at ends of branches

Bark: light gray, broken into reddish scales

Flower: green catkin, 1–3" (2.5–7.5 cm) long, composed of
many tiny flowers, ⅛" (.3 cm) wide

Fruit: green acorn, turns brown, edible, ½–1½" (1–4 cm)
long, cap covers the upper third of nut

Fall Color: red-brown

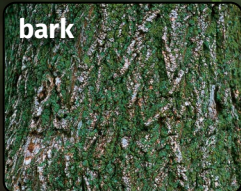
Origin/Age: native; 150–250 years

Habitat: variety of soils, sun

Range: throughout

Stan's Notes: A very important tree in the lumber industry, with its wood used for furniture, flooring, whiskey barrels, crates and much more. Similar to the Bur Oak (pg. 219), which has a single large terminal lobe unlike White Oak's finger-like lobes. Produces edible acorns each fall, with large crops produced every 4–10 years. Like all other acorns, these should be boiled in several changes of water to leach out the bitter and slightly toxic tannins before eating. Acorns are an important food source for turkeys, squirrels, grouse, deer and other wildlife. Susceptible to oak wilt, causing gradual death. Oaks in the white oak group can be treated for oak wilt, while red oak group trees die quickly from the disease.

fruit





Boxelder

Acer negundo

COMPOUND
OPPOSITE



Family: Maple (Aceraceae)

Height: 30–50' (9–15 m)

Tree: medium-sized tree, frequently with a divided and crooked trunk, broad irregular crown

Leaf: compound, 4–9" (10–22.5 cm) in length, oppositely attached, made of 3–5 leaflets, each leaflet 2–4" (5–10 cm) in length, often 3-lobed, irregular-toothed margin, pale green

Bark: light gray to tan, becoming deeply furrowed with wavy ridges

Flower: tiny reddish flower, ¼" (.6 cm) wide, growing on a 1–3" (2.5–7.5 cm) long stalk

Fruit: pair of green winged seeds (samara), turning to brown, 1–2" (2.5–5 cm) long

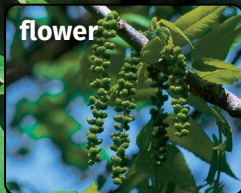
Fall Color: yellow

Origin/Age: native; 50–60 years

Habitat: wet, along streams, lakes and flooded areas, sun

Range: throughout

Stan's Notes: One of the most common trees in Indiana. Unique species among native maple trees because its leaves are compound. A member of the Maple family with all the virtues, but none of the respect. Frequently thought of as a trash tree, but it produces large amounts of seeds that stay on the tree during winter, making a valuable food source for wildlife. If the tree is tapped in spring, it will yield a sap that can be boiled into maple syrup. Since its sugar content is lower than that of the other maples, it takes more sap to make a comparable syrup. These trees are often covered with Boxelder Bugs, harmless beetles whose larvae eat the leaves but cause little damage. Also called Manitoba Maple or Ash-leaved Maple.





Black Walnut

Juglans nigra

COMPOUND
ALTERNATE



Family: Walnut (Juglandaceae)

Height: 50–75' (15–23 m)

Tree: straight trunk, open round crown

Leaf: compound, 12–24" (30–60 cm) in length, alternately attached, with 15–23 stalkless leaflets (sessile), each leaflet 3–4" (7.5–10 cm) long, with pointed tip, last (terminal) leaflet often smaller or absent, middle leaflets larger than on either end, fine-toothed margin, yellowish green and smooth above, slightly lighter and hairy below

Bark: brown to black, becoming darker with age, deep pits and flat scaly ridges

Flower: catkin, 2–4" (5–10 cm) long, composed of many tiny green flowers, ¼" (.6 cm) wide

Fruit: fleshy green fruit, round, 1–2" (2.5–5 cm) wide, in clusters, aromatic green husk surrounding a hard dark nut that matures in autumn, nutmeat sweet and edible

Fall Color: yellowish green

Origin/Age: native; 150–175 years

Habitat: well-drained rich soils, shade intolerant

Range: throughout, planted in parks and yards

Stan's Notes: One of six species of walnut native to North America. Valued for its wood, which doesn't shrink or warp and is used to build furniture and cabinets. An important food source for wildlife. Fruit husks contain a substance that stains skin and were used by pioneers to dye clothing light brown. Twigs have a light brown chambered pith (see inset), unlike dark brown pith of Butternut (pg. 269). Fallen leaves and roots produce juglone, a natural herbicide.



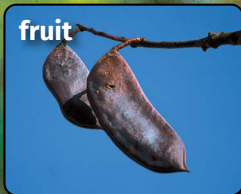
bark



flower



fruit





Kentucky Coffeetree

Gymnocladus dioica

TWICE
COMPOUND
ALTERNATE



Family: Pea or Bean (Fabaceae)

Height: 40–60' (12–18 m)

Tree: single trunk, can be divided low, many crooked branches, open round crown

Leaf: twice compound, 12–36" (30–90 cm) long, alternately attached, made of many (up to 70) leaflets, each leaflet 2" (5 cm) long, lacks teeth, blue-green

Bark: brown and smooth when young, thin scales with edges curling out, breaking with age into plates

Flower: 5-petaled white flower, ¼–½" (.6–1 cm) diameter, on a single long stalk, in open clusters, 1–3" (2.5–7.5 cm) wide

Fruit: leathery green pod, turning reddish brown when mature, 4–10" (10–25 cm) in length, often covered with a whitish powder, containing 6–9 large seeds

Fall Color: yellow

Origin/Age: native; 50–100 years

Habitat: deep rich soils, sun

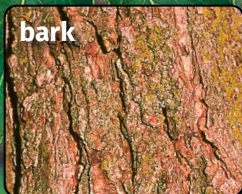
Range: throughout, planted in urban sites, farms, parks, along roads

Stan's Notes: The leaves of this species are among the last to appear in spring and first to turn in fall. Common name comes from its coffee bean-like seeds in seedpods. The seedpods contain many dark seeds surrounded by a yellowish pulp that becomes soapy when wet. The bitter seeds are seldom eaten by wildlife and remain viable for several years. New trees sprout from roots of parent trees, often forming small colonies. The genus name *Gymnocladus* comes from the Greek for "naked branch," which is how the branches appear.

fruit



bark



flower





Ohio Buckeye

Aesculus glabra

PALMATE
COMPOUND
OPPOSITE



Family: Soapberries (Sapindaceae)

Height: 20–40' (6–12 m)

Tree: single trunk, broad round crown with flat top

Leaf: palmate compound, 5–15" (12.5–37.5 cm) long, oppositely attached, composed of 5 leaflets, each leaflet 3–5" (7.5–12.5 cm) long, radiating from a central point, with fine irregular teeth, yellowish green above, pale and hairy below, sessile

Bark: brown with scaly patches, rough shallow furrows

Flower: green flower, ½" (1 cm) wide, growing upright in triangular clusters, 5–7" (12.5–18 cm) long, foul odor when crushed

Fruit: light brown spiny capsule, round, 1–2" (2.5–5 cm) wide, contains 1–2 shiny brown poisonous seeds

Fall Color: yellow to orange

Origin/Age: native; 100–125 years

Habitat: moist soils, river bottoms, sun to partial shade

Range: throughout, planted in parks, yards and along streets

Stan's Notes: Also known as Fetid Buckeye or Stinking Buckeye, referring to the foul odor of the flowers and most other parts of the tree when crushed. Grows naturally in moist areas. Planted as a landscape tree in dry upland areas for its attractive autumn foliage. Its large poisonous seeds are avoided by wildlife. A unique palmate leaf, the leaflets lack their own leafstalks, all rising instead from a central stalk. An extract from the bark was once used as a stimulant for the cerebrospinal system. Once thought a buckeye seed carried in the pocket would ward off rheumatism. Warty spines on its fruit capsules help distinguish it from Yellow Buckeye (pg. 279).



Tree Identification Made Easy

Now tree identification is simple and productive.

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- **Easy to use:** Thumb tabs show leaf type and attachment
- **Compare feature:** Decide between look-alikes
- **Stan's Notes:** Naturalist tidbits and facts
- **Professional photos:** Crisp, stunning full-page images

This 2nd Edition includes updated photographs; expanded information; a Quick Compare section for leaves, needles, and silhouettes; and even more of Stan's expert insights!



About the Author

Naturalist Stan Tekiela is an award-winning wildlife photographer and the author of many popular state-specific field guides. He has written educational books about wildlife, including children's books, quick guides, and more, presenting birds, mammals, reptiles, amphibians, trees, wildflowers, and cacti.

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