

Common Woody Plants of Florida Scrub Ecosystems¹

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Introduction

Florida's [scrub](#) ecosystems are characterized by deep, well-drained, nutrient-poor, sandy soils and areas of open, bare sand dominated by xeromorphic plants (i.e., plants that have adapted specialized traits to help withstand very dry conditions; Figures 1 and 2). Plants in these ecosystems must endure harsh conditions because water and nutrients drain quickly through sandy soil, and the sparse canopy provides little relief from the hot Florida sun. Various survival strategies enable xeromorphic plants to thrive and compete in dry conditions. The curled, waxy-surfaced leaves of *Quercus geminata*, for instance, allow the tree to reduce water loss; and *Ceratiola ericoides*' extensive root systems ensure that it absorbs as much water as possible from the soil.

An environmental constant that shaped the evolution of scrub ecosystems alongside water was fire. Fire continues to play an important role in maintaining the health and biodiversity of these habitats. The intervals between fire events in these habitats typically range from 5 to 30 years depending on the site conditions (e.g., soil type, water drainage) and [scrub community](#) (e.g., rosemary scrub, sand pine scrub). Fires generally top-kill woody shrubs (e.g., *Lyonia* spp.) and scrub oaks, which can re-sprout from underground root systems while other scrub plants (e.g., *Pinus clausa*, *Ceratiola ericoides*) will be completely killed and regenerate from seed. Fire also reduces litter on the forest floor, increasing areas of open bare sand where many rare scrub plants occur. In the absence of fire, plant

diversity will decrease over time because scrub communities tend to convert to a [xeric hammock](#) ecosystem.



Figure 1. An example of a Florida scrub ecosystem.

Credits: Lynn Proenza



Figure 2. Areas of open, bare sand are common in a fire-maintained scrub ecosystem.

Credits: Michael Andreu

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The purpose of this fact sheet is to help identify a few of the more common woody plant species found in Florida's scrub ecosystems. In the individual plant descriptions, words that appear in bold font are considered to be key field characteristics that will aid in identification of the species. These field characteristics are not meant to be comprehensive to all plants in scrub but rather only highlight those that they are most commonly mistaken for. The species covered in this document follow Wunderlin and Hansen (2008) and are grouped by vegetation type according to the following outline:

Pine

- *Pinus clausa*; sand pine, scrub pine

Oaks

- *Quercus chapmanii*; Chapman's oak
- *Q. geminata*; sand live oak
- *Q. inopina*; scrub oak, sandhill oak, Florida scrub oak
- *Q. myrtifolia*; myrtle oak

Palms

- *Sabal etonia*; scrub palmetto
- *Serenoa repens*; saw-palmetto

Woody Shrubs

- *Bejaria racemosa*; tarflower, fly-catcher
- *Carya floridana*; scrub hickory
- *Ceratiola ericoides*; Florida rosemary, rosemary, sand heath
- *Hypericum tenuifolium*; Atlantic St. John's wort
- *Ilex opaca* var. *arenicola*; scrub holly, American holly, hummock holly
- *Lyonia ferruginea*; rusty lyonia, stagger-bush (with a note on *L. fruticosa*)
- *Lyonia lucida*; fetterbush, stagger-bush, shiny lyonia
- *Palafoxia feayi*; palafoxia, Feay's palafox
- *Persea borbonia* var. *humilis*; silk bay
- *Vaccinium myrsinites*; shiny blueberry (with a note on *V. darowii*)

Scrub Vegetation

Pine

PINUS CLAUSA; SAND PINE, SCRUB PINE

Form

Evergreen tree up to 25 m tall but usually 8–14 m (Figure 3). Diameter at breast height (DBH) up to 51 cm. Branches are dense, commonly droop, and are often not self-pruned (lower branches persistent). Cones are persistent.



Figure 3. *Pinus clausa*.
Credits: Lynn Proenza

Stem

Grayish and scaly or smooth (towards top of trunk or new growth) turning plate-like and reddish brown (lower portion of trunk) with age.

Leaves

Simple, alternate, spiral. Needle-like, 5–10 cm long with 2 needles per fascicle. Needles are green to yellowish-green and may be straight or slightly twisted (Figure 4).



Figure 4. Close-up of *Pinus clausa* showing the short and twisted characteristic of its needles.
Credits: Lynn Proenza

Reproduction

Pollen cones appear in early spring. Monoecious, inconspicuous. Males: yellow, long, and slender. Females: purple to yellow. Seed cones usually clustered, 2–10 cm long, brown; spines are short and stout; serotinous (*Pinus clausa* var. *clausa*) or non-serotinous (*Pinus clausa* var. *immuginata*) depending on variety; typically persistent on branches (Figure 5).



Figure 5. The cones of *Pinus clausa* are typically persistent on the branches.

Credits: Lynn Proenza

Oaks

QUERCUS CHAPMANII; CHAPMAN'S OAK

Form

Semi-evergreen shrub to small tree to 14 m tall but commonly to 3 m tall. Forms thickets by spreading via subterranean runners.

Stem

Scaly, brown to grayish-brown. New twigs tan to yellowish, densely pubescent becoming gray with age. Buds reddish-brown.

Leaves

Simple, alternate. Size and shape of leaves vary, obovate to oblanceolate, **leaf broadest at apex** from 4–10 cm long and 1–8 cm wide. Upper surface shiny to dull dark green, occasionally with some pubescence. Lower surface dull green, yellowish to grayish with tan to yellow pubescence usually along midrib shedding with age (Figure 6). **Some leaves becoming yellow to red in the fall and winter**, shedding by spring. **Margins vary from shallowly lobed, sparsely lobed (3–5 lobes), wavy, or entire.** Lobes usually rounded. Apex rounded. Base attenuate, cuneate, or rounded.



Figure 6. *Quercus chapmanii* leaves showing the shiny upper surface and grayish-dull lower surface.

Credits: Lynn Proenza

Flowers

Late winter to early spring.

Fruit

Acorn up to 1.5 cm long. Annually produces either 1 or 2 on a peduncle. Cup encompasses approximately half of the nut, scales gray, pubescent. Nut brown to light brown oval. Apex round, occasionally with pubescence.

QUERCUS GEMINATA; SAND LIVE OAK

Form

Tardily deciduous small shrub to large tree up to 29 m tall but commonly only reaches 15 m tall. Forms thickets by spreading via subterranean runners.

Stem

Scaly, dark brown to black. Smooth when young, becoming deeply furrowed with age and size. Twigs dark brown, yellowish, to light gray.

Leaves

Simple, alternate. Leathery and stiff. Elliptic to narrowly lanceolate 2–12 cm long, 0.5–4 cm wide. Upper surface dark to light green, shiny, glabrous. **Lateral veins and midrib commonly impressed. Lower surface grayish to tan with dense stellate pubescence. Margins strongly revolute**, so that the leaf resembles a boat (Figure 7). Petiole densely pubescent, 2–10 mm long.

Flowers

Spring. Produced annually, usually in clusters of 2 to 6.



Figure 7. *Quercus geminata* leaves showing the shiny upper surface, tan pubescent lower surface, and strongly revolute margins.
Credits: Lynn Proenza

Fruit

Acorns up to 2 cm long, produced annually usually in clusters of 2 to 6. Cups with pubescent to smooth gray scales that cover approximately one-third of the nut; nut dark brown to black.

QUERCUS INOPINA; SCRUB OAK, SANDHILL OAK, FLORIDA SCRUB OAK

Form

Evergreen shrub to 5 m, but usually 1–1.5 m tall. Forms thickets by spreading via subterranean runners. Leaves commonly held “vertically” on plant due to twisted petioles.

Stem

Light gray to brown.

Leaves

Simple, alternate. Usually elliptical, 2–12.5 cm long, 1.3–7.5 cm wide. Upper leaf surface is smooth or has impressed veins and is usually covered in ascocarps (a fungus that appears as small black dots). **Lower surface is glabrous to sparsely pubescent**, mostly at the base and along the midrib. The pubescence is yellow and scurfy. **Margins heavily revolute**; apex rounded to obtuse; base rounded, obtuse, or acute. **Leaves held “vertically” on plant due to twisted petioles** (Figure 8).

Flowers

Spring. Occurs after *Q. myrtifolia* has flowered.



Figure 8. *Quercus inopina* leaves are held vertically on the plant. The leaves are heavily revolute and twice as long as they are wide.
Credits: Lynn Proenza

Fruit

Acorn, matures in 2 years. Oval to elliptical, up to 2 cm long and 1.5 cm wide. Cup covers up to half of the nut. Scales on outer cup are pubescent.

Distinguishing characteristics: When comparing this species to *Q. myrtifolia*, the leaf of *Q. inopina* is twice as long as it is wide and is usually elliptical, whereas *Q. myrtifolia* is less than twice as long as it is wide and is usually obovate.

QUERCUS MYRTIFOLIA; MYRTLE OAK

Form

Tardily deciduous shrub to 11 m. Typically forms thickets. Branches are usually crooked. Forms thickets by spreading via subterranean runners.

Stem

Smooth and gray turning dark gray and furrowed with age. Twigs reddish-brown and pubescent. Terminal buds are ovoid, up to 5.5 mm long, purplish to reddish-brown to brown, and occasionally with tan pubescent tufts. New growth with dense stellate pubescence.

Leaves

Simple, alternate. Leathery and stiff. Elliptic, oval, or, **more commonly, obovate**. Size variable, 2–8 cm long and 1–5 cm wide. **Upper surface shiny**, dark green, sparsely pubescent usually becoming glabrous with age. **Lower surface dull to somewhat shiny**, green to yellow-green, mostly glabrous with **some pubescence occurring within axils of midrib and lateral veins** (Figure 9). **Margins slightly revolute**, sometimes wavy. Bristle tips rare. Apex commonly rounded but sometimes obtuse. Base rounded to cuneate.



Figure 9. *Quercus myrtifolia* is less than twice as long as it is wide. The shiny upper and lower surface of the leaves are apparent. The lower surface will become shinier as hairs shed.
Credits: Lynn Proenza

Flowers

Spring. Occurs before *Q. inopina*.

Fruit

Acorn, matures in 2 years. Grayish-brown, round, ovoid to globose, up to 1.6 cm long and 1.2 cm wide. Cup covers approximately one-fourth to one-third of nut. Tan, sparsely pubescent on outer surface, densely pubescent on inner surface.

Distinguishing characteristics

When comparing this species to *Q. inopina*, the leaf of *Q. myrtifolia* is less than twice as long as it is wide and is usually obovate, whereas the leaf of *Q. inopina* is twice as long as it is wide and is usually elliptical.

Palms

SABAL ETONIA; SCRUB PALMETTO

Form

Perennial. Height commonly 1 m. **Contorted or “S”-shaped subterranean stems.** Bud is generally below ground (Figure 10).

Leaves

Costapalmate, approximately 1 m long (Figure 11). Usually 3–5 leaves present at a time. Petioles 25–40 cm long, up to 2 cm wide, **margins smooth (without prickles)** and arch upwards. The **triangular hastula extends past the base of the leaf giving the leaf a “folded” appearance.** The hastula is 1.2–4 cm long and triangular. **Fibers occur between leaf blade segments**, green to yellowish-green.



Figure 10. The stems occur underground on *Sabal etonia*.
Credits: © 2000 by Shirley Denton



Figure 11. Leaves of the *Sabal etonia* showing the costapalmate characteristic.
Credits: © 2000 by Shirley Denton

Flowers

Spring to summer. White, 5–6 mm flowers occur in an inflorescence that can reach the length of the leaf.

Fruit

Black to brownish-black ovoid drupe to 15 mm long when mature.

SERENOA REPENS; SAW-PALMETTO

Form

Perennial, capable of reaching 7 m in height, but **commonly grows horizontally along the ground or just below the ground.** Stems can lean, creep, or grow erect (Figure 12 to Figure 14). Can form large thickets.



Figure 12. *Serenoa repens* in scrub ecosystems.
Credits: Lynn Proenza



Figure 13. *Serenoa repens* commonly grows horizontally along the ground as shown here in this recently burned area.
Credits: Lynn Proenza



Figure 14. *Serenoa repens* can grow vertically up to 7 meters in height if fire is suppressed as shown here.
Credits: Lynn Proenza

Stems

Stems covered by old leaf bases or leaf scars and thick brown fibers.

Leaves

Palmate (fan-like) with no midrib, up to 1 m wide. Petioles 5–10 decimeters (dm) long and up to 1.5 cm wide. Light to dark green, occasionally blue-green. **Margins of petioles have recurved saw-like prickles.** Hastula approximately 10 mm, **rounded to deltoid** (Figure 15).



Figure 15. The hastula of *Serenoa repens* is slightly rounded, unlike that of *Sabal etonia*. In addition, the leaf is palmate, unlike the costapalmate characteristic of *Sabal etonia*.
Credits: Lynn Proenza

Flowers

Up to 5–6 mm long borne on an inflorescence that is shorter than the leaf length.

Fruit

Black drupe, ellipsoid to 25 mm long, 15 mm wide.

Woody Shrubs

BEJARIA RACEMOSA; TARFLOWER, FLY-CATCHER

Form

Evergreen shrub with few erect branches, to 2.5 m tall.

Stem

Stems powdery-pubescent **with long hairs** (Figure 16).

Leaves

Simple, alternate, sessile. Elliptic to ovate 2–6 cm long, to 2 cm wide. Upper surface has powdery pubescence. **Lower surface lighter (whitish) in color with some long hairs at the midrib.** Margin entire, apex rounded to acute, base cuneate.



Figure 16. Close up of the leaves and hairy stems of *Bejaria racemosa*.
Credits: Lynn Proenza

Flowers

White to pinkish with seven separated petals to 2–3 cm long (Figure 17). **Sticky**, aromatic.



Figure 17. *Bejaria racemosa* has 7 separated petals and a persistent pistil on the capsule as shown here.
Credits: Lynn Proenza

Fruit

Capsule 6–8 mm in diameter, **sticky**. The pistil persists on the mature fruit.

CARYA FLORIDANA; SCRUB HICKORY, FLORIDA HICKORY

Form

Deciduous, commonly a shrub to 5 m tall, but can reach up to 25 m tall. Multi-trunked.

Stem

Smooth when young then with interlacing fissures as it ages. Light gray to brown-gray. Twigs rusty to brown with gray flecks, sometimes with pubescence.

Leaves

Alternate, odd-pinnately compound (Figure 18). Petioles pubescent and scaly in spring. 3–7 leaflets, most commonly 5 or 7, elliptic, ovate, obovate to lanceolate. The terminal leaflet is typically the largest up to 8–20 cm. Upper surface rusty, turning green and glabrous with age. Lower surface rusty-scaly with pubescence in axils of midrib and lateral veins. Margins serrate. Apex acuminate to acute. Terminal leaflet cuneate. Lateral leaflet bases rounded to obtuse and sometimes inequilateral. Leaf scars crescent-shaped to circular.

Flowers

Spring. Catkins 2–2.5 mm with rusty pubescence on some parts (Figure 18).



Figure 18. Leaves and flowers of *Carya floridana*.
Credits: © 2000 by Shirley Denton

Fruit

Dark brown to rusty-scaly nut, obovoid to oblong, 2.5–4 cm long (Figure 19). Husks rough, hard, and thin, approximately 2–3 mm thick.



Figure 19. *Carya floridana* fruit.
Credits: © 2000 by Shirley Denton

CERATIOLA ERICOIDES; FLORIDA ROSEMARY, ROSEMARY, SAND HEATH

Form

Evergreen shrub, erect, bushy-branched, **mound-like or round**, to 3 m tall (Figure 20).



Figure 20. *Ceratiola ericoides* grows in a bushy, mound-like, or round form.

Credits: Lynn Proenza

Stem

Dense gray pubescence along young twigs. Leaf scars are raised, producing a roughened look and feel. Gray bark showing inner brown color, which also turns gray with age.

Leaves

Simple, **appear whorled but are opposite**. Needle-like, commonly 8–12 mm long, 1 mm wide (Figure 21). Aromatic.



Figure 21. The leaves of *Ceratiola ericoides* appear whorled, but are in fact opposite. The flowers seen here are borne in the axils of the leaves.

Credits: Lynn Proenza

Flowers

Fall. Yellow to red, 1.5 mm long, borne in axils of leaves.

Fruit

Drupe, greenish-yellow, 2–3 mm in diameter, 2 seeds per fruit, juicy.

HYPERICUM TENUIFOLIUM; ATLANTIC ST. JOHN'S WORT

Form

Small, evergreen shrub, commonly 10–20 cm tall but can reach 50 cm.

Stem

Tight, thin bark flakes off in strips or plates.

Leaves

Needle-like to 5–10 mm long, strongly revolute with margins commonly touching the lower surface. Margins are punctate and the upper surface of the leaf is sparsely punctate. Aromatic.

Flowers

Yellow, up to 8 mm long, 5 petals, borne singly in axil of leaf (Figure 22).



Figure 22. The leaves of the *Hypericum tenuifolium* are small and needle-like. The flowers are yellow with 5 petals.

Credits: Lynn Proenza

Fruit

Capsule, up to 10 mm long, commonly between 4–5 mm, conical.

ILEX OPACA VAR. ARENICOLA; SCRUB HOLLY, AMERICAN HOLLY, HUMMOCK HOLLY

Form

Evergreen shrub or tree up to 5 m tall. Branches and twigs ascending and crooked. Dioecious, fruit appears on female plants only.

Stem

Smooth, light gray.

Leaves

Simple, alternate, thick, leathery, up to 5 cm long, 2.5 cm wide. Yellowish-green upper surface and olive green lower surface. Margins revolute with sharp, **spiny dentations** (teeth; Figure 23).

Flowers

Cream to white, 4-lobed (Figure 23).



Figure 23. The flowers of *Ilex opaca* var. *arenicola* are cream to white and 4-lobed.

Credits: © 2005 by Shirley Denton

Fruit

Drupe, appearing on female plants only (dioecious). Yellow to orange-red with age, showy, up to 10 mm in diameter (Figure 24).

LYONIA FERRUGINEA; RUSTY LYONIA, RUSTY STAGGER-BUSH

Form

Evergreen, commonly up to 6 m tall but can reach up to 12 m. Stems and trunks crooked. Rhizomatous.

Stem

Stems and branches crooked. Grayish to brown twigs with rusty to gray pubescence and scales, sloughing with age.



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Figure 24. The fruits of *Ilex opaca* var. *arenicola* are yellow to red, and are shown here on this female plant.

Credits: © 2005 by Shirley Denton

Leaves

Simple, alternate, elliptic, obovate, to ovate, 1–9 cm long, 0.5–4 cm wide. **When young, leaf surfaces are covered in rusty pubescence sloughing with age** (Figure 25). Upper surface dark green with some pubescence along midrib commonly with impressed lateral veins. **Lower surface pubescent with gray- and rusty-colored scales of two different sizes. Margins of young leaves entire, becoming revolute with age. Apex acute to obtuse, base cuneate.**



Figure 25. Rusty scales and pubescence can be seen covering the surfaces of *Lyonia ferruginea*, especially on new growth. Older vegetation does not have as many scales or hairs as they slough with age, and leaf margins are revolute at maturity.

Credits: Lynn Proenza

Flowers

Spring. White clusters borne in axils of branches and twigs of previous season. Urceolate (Figure 26).



Figure 26. The flowers of *Lyonia ferruginea* and *Lyonia fruticosa* are urceolate.

Credits: Lynn Proenza

Fruit

Capsule. Ellipsoid to ovoid. Pubescent. Five-angled.

Distinguishing characteristics

Lyonia fruticosa is very similar to *L. ferruginea* and both species are often found growing together. *L. fruticosa*, however, has scales on the lower leaf surface in just one size, whereas *L. ferruginea* has scales in two sizes. The surfaces of the leaves on *L. fruticosa* turn dull gray with age, leaf edges curve slightly upwards (Figure 27), and veins are not impressed on the upper surface.

LYONIA LUCIDA; FETTERBUSH, STAGGER-BUSH, SHINY LYONIA

Form

Evergreen shrub up to 4 m tall although commonly less than 1 m (Figure 28). Multi-trunked or branched.

Stem

Stems, branches, and twigs are erect or arching, typically 3-angled or keeled, green to reddish-brown with age.

Leaves

Simple, alternate, leathery. Commonly broadly elliptic, otherwise oval to obovate. 2–8 cm long, 1–4 cm wide.

Upper surface glossy, glabrous, dark green, sparsely punctate dotted. Lower surface paler with a greater number of purple to brown punctate dots. Margins entire to slightly revolute with a yellow to yellow-green vein running closely alongside the margins (Figure 29). Apex acute to minutely acuminate. Base cuneate.



Figure 27. *Lyonia fruticosa* leaves are curved upwards at maturity, whereas *Lyonia ferruginea* are revolute.

Credits: Lynn Proenza



Figure 28. *Lyonia lucida*.

Credits: Lynn Proenza

Flowers

Reddish to pink or white, cylindric, up to 1 cm long (Figure 30).



Figure 29. This figure shows the yellow to yellowish-green intramarginal vein that runs parallel to the leaf margin in *Lyonia lucida*. This is a key characteristic for this species.
Credits: Lynn Proenza



Figure 30. The flowers of *Lyonia lucida* are reddish to white and are urceolate in shape.
Credits: Lynn Proenza

Fruit

Capsule. Round to urceolate, up to 5 mm long.

PALAFXIA FEAYI; PALAFXIA, FEAY'S PALAFX

Form

Evergreen shrub, subshrub, to shrubby herb up to 3 m tall.

Bark

Straight, stiff pubescence to almost glabrous.

Leaves

Oblong, ovate, lanceolate, to narrowly elliptic, 2–7 cm long. Margins entire, apex acute to obtuse, base rounded (Figure 31). **Texture rough to the touch.**



Figure 31. *Palafoxia feayi* leaves.
Credits: Lynn Proenza

Flowers

Late summer to fall; 15–30 per **corymb**, **pink, lavender, and/or white** (Figure 32).



Figure 32. The flower on *Palafoxia feayi* is very distinctive.
Credits: Lynn Proenza

Fruit

Achene, 5–6 mm long.

PERSEA BORBONIA VAR. HUMILIS; SILK BAY

Form

Evergreen, shrub to small tree to 10 m.

Bark

Wood blackish to dark brown. Pubescence on twigs brown to gray with age.

Leaves

Simple, alternate. Elliptic, lanceolate, commonly narrow, 3–10 cm long, 1–3 cm wide. Upper surface glabrous, shiny green. **Lower surface with dense brown pubescence that feels smooth and silky** turning dull gray with age and eventually sloughing (Figure 33). Apex tapered, blunt. Base also tapered, but acutely. **Leaves aromatic.**



Figure 33. A silky, brown pubescence is evident on newer growth of *Persea borbonia* var. *humilis*.

Credits: Michael Andreu

Flowers

Spring to summer. Silky smooth pubescence.

Fruit

Drupe, 1–1.5 cm diameter.

VACCINIUM MYRSINITES; SHINY BLUEBERRY

Form

Small shrub to 60 cm tall. Forms thickets by spreading via subterranean runners.

Bark

Pubescent to glabrous with age.

Leaves

Simple, alternate, sessile, very small, elliptic, 5–15 mm long, 2–10 mm wide. Upper surface glabrous and shiny green. Lower surface with red glands and sparsely pubescent. Margins with crenate or scalloped gland-tipped, ascending teeth sloughing with age (Figure 34).



Figure 34. The upper surface of the leaves of *Vaccinium myrsinites* are shiny, with minute, gland-tipped, ascending teeth that give the margins a somewhat crenate or scalloped appearance.

Credits: Lynn Proenza

Flowers

Pink to white, urceolate, 5–8 mm long.

Fruit

Black to bluish-black shiny berry, 5–8 mm in diameter.

Distinguishing characteristics

Vaccinium darowii is very similar to *V. myrsinites*; however, the leaf surface on *V. darowii* is glaucous. Unlike the lower leaf surface, the upper leaf surface will typically lose its glaucous appearance. Both species occur in similar sites and ranges.

Glossary

Achene, a small, dry fruit containing one seed (e.g., sunflower seed)

Acuminate, a long, tapering point at the apex of a leaf

Acute, margins that form an angle less than 90° at the base or apex of a leaf

Angled, not round; three or more flat sides adjoining at angles (e.g., triangular or squared in shape)

Attenuate, gradually tapering to a point at the base or apex of a leaf

Capsule, a dry fruit with more than one carpel

Catkin, a spike-like inflorescence with flowers typically compacted together

Corymb, a flat-topped to slightly convex inflorescence

Costapalmate, a palmate palm-like leaf that forms a “V” (as if somewhat folded) due to an elongated hastula extending from the petiole

Crenate, margins with rounded teeth

Cuneate, tapering of the leaf blade at the base of a leaf

Deltoid, triangular in shape

Dioecious, male and female flowers occurring on separate plants

Drupe, a fleshy fruit covering seed(s) in a stony endocarp (e.g., cherry)

Entire, margins smooth, not notched or lobed

Fascicle, a bundle

Glabrous, without hairs

Glaucous, grayish-blue or whitish waxy substance covering a surface

Globose, spherical

Hastula, additional tissue occurring at the tip of the petiole and extending beyond the base of some palm leaves

Husk, the hard outer covering of a seed

Inequilateral, leaf blades at the base of the leaf are not symmetrical

Inflorescence, a flower cluster or group; part of the plant that flowers

Interlacing fissures, bark with fissures that are diamond-shaped (like a chain-link fence)

Impressed, pressed downwards; depressions

Keeled, with protruding longitudinal ridges

Lanceolate, in the shape of a lance with the narrow end occurring at the apex of the leaf

Monoecious, male and female flowers occurring on the same plant

Ob lanceolate, in the shape of a lance with the narrow end occurring at the base of the leaf

Oblong, the shape of a leaf in which the leaf blades are equally broad from apex to base and is two or more times longer than broad

Obovate, shape of a leaf in which the broadest point occurs at the apex of the leaf

Obtuse, margins that form an angle greater than 90° at the base or apex of a leaf

Odd-pinnately compound, a compound leaf containing an odd number of leaflets

Ovate, the shape of the leaf in which the broadest point occurs towards the base of the leaf

Ovoid, egg shaped

Peduncle, the stalk of an inflorescence

Persistent, does not fall off; remains attached

Petiole, the stem of a leaf that attaches the leaf blade to the twig

Pistil, the female reproductive organ on a flower

Pubescent, with hairs

Punctate, glands (or other material) appearing as dots on a surface

Recurved, curved backwards

Revolute, margins that curl downwards

Rhizomatous, a plant that has underground stems (subterranean runners) in which new shoots are produced at the nodes. Aboveground, a plant may appear to be separate from others adjacent to it; however, these plants may actually belong to a single specimen

Scurfy, with small scales giving a surface a rough feel and/or crusty appearance

Semi-evergreen, partly evergreen; keeps some foliage year-round

Serotinous, opens via solar heat or fire

Serrate, margins with appressed, serrated (saw-like) teeth

Sessile, leaf attaches directly to a twig, without a petiole

Stellate, star-shaped

Subterranean runners/stems, stems occurring below the surface of the ground

Tardily deciduous, leaves falling off of a plant while new leaves are emerging, usually after wintertime

Terminal leaflet, the leaflet occurring at the tip or end of an odd-pinnately compound leaf

Unarmed, without prickles, thorns, or spines

Urceolate, urn-shaped

Whorled, arrangement of leaves on a twig in which three or more leaves occurring at the same point encircle a twig

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