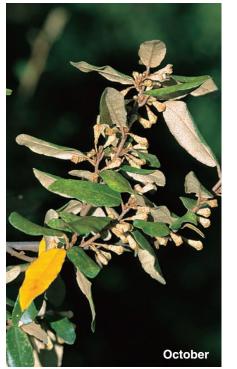
Silverthorn, Thorny Olive









Elaeagnus pungens Thunb. ELPU2

Plant. Evergreen, densely bushy shrub 3 to 25 feet (1 to 8 m) in height, with long limber projecting shoots, scattered thorny branches. Thick leaves, silver-brown scaly beneath. Often found as escaped single plants from animal-dispersed seeds.

Stem. Multiple stems and densely branched. Twigs brown and dense with brown scales and hairy when young. Short shoots with small leaves becoming sharp-branched or unbranched thorns 0.4 to 1.6 inches (1 to 4 cm) long, and in second year producing leafy lateral branches, followed by flowers in fall. Lateral branches distinctly long, limber, and in late summer to spring extending beyond bushy crown and ascending into trees. Bark dark drab and rough with projecting thorns.

Leaves. Alternate, oval to elliptic and thick, 0.4 to 4 inches (1 to 10 cm) long and 0.2 to 2 inches (0.6 to 5 cm) wide. Irregular and wavy margins. Blade surfaces silver scaly in spring becoming dark green or brownish green above and densely silver scaly with scattered brown scales beneath. Petioles 0.1 to 0.2 inch (4 to 5 mm) long, grooved above.

Flowers. October to December. Axillary clusters, each with one to three flowers, 0.4 inch (1 cm) long, silvery white to brown. Tubular with four lobes. Fragrant.

Fruit and seeds. March to June. Oblong, juicy drupe, 0.3 to 0.6 inch (1 to 1.5 cm) long, containing one nutlet. Whitish ripening to red and finely dotted with brown scales. Persistent shriveled calvx tube at tip.

Ecology. Fast-growing, weedy ornamental. Tolerant to shade, drought, and salt. Spreads by animal-dispersed seeds and occurs as scattered individuals, both in the open and under forest shade. Increases in size by prolific stem sprouts. Can climb into trees.

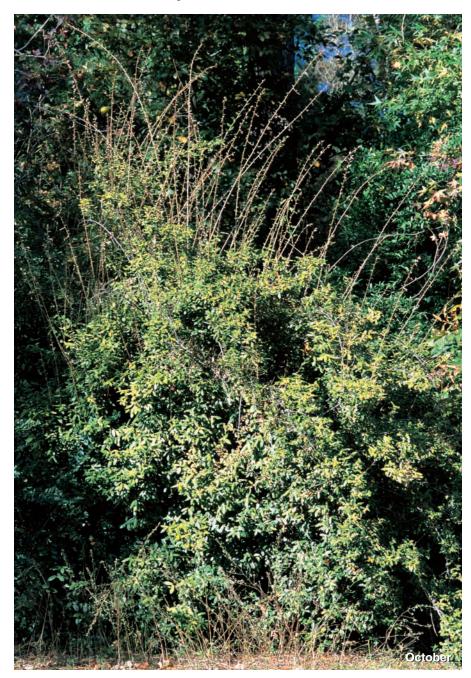
Resembles autumn olive, *E. umbellata* Thunb., and Russian olive, *E. angustifolia* L., both of which are deciduous and are further described in this book. Autumn olive has thin leaves with silver scales (not silver brown) and abundant reddish rounded berries in fall and early winter. Russian olive has silver scaly twigs and leaf surfaces, and many yellow olives in fall and winter.

History and use. Introduced as an ornamental from China and Japan in 1830. Frequently planted for hedgerows and on highway right-of-ways and still used for landscaping.

States with suspected infestations are shown in gray.

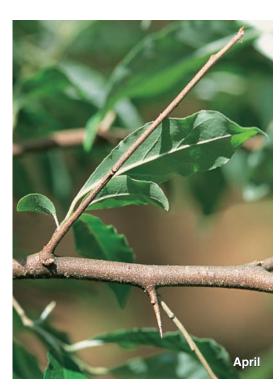


Silverthorn, Thorny Olive



Autumn Olive















Elaeagnus umbellata Thunb. ELUM

Plant. Tardily deciduous bushy leafy shrub, 3 to 20 feet (1 to 6 m) in height, with scattered thorny branches. Leaves silvery scaly beneath, with many red berries in fall.

Stem. Twigs slender and silver scaly, spur twigs common, with some lateral twigs becoming pointed like thorns. Branches and main stems glossy olive drab with scattered thorns and many whitish dots (lenticels), becoming light gray to gray brown with age and eventually fissuring to expose light-brown inner bark.

Leaves. Alternate, elliptic 2 to 3 inches (5 to 8 cm) long and 0.8 to 1.2 inches (2 to 3 cm) wide. Margins entire and wavy. Bright green to gray green above with silver scaly midvein and densely silver scaly beneath. Petioles short and silvery.

Flowers. February to June. Axillary clusters, each with 5 to 10 tubular flowers with 4 lobes. Silvery white to yellow. Fragrant.

Fruit and seeds. August to November. Round, juicy drupe 0.3 to 0.4 inch (7 to 10 mm) containing one nutlet. Red and finely doted with silvery to silvery-brown scales.

Ecology. Prefers drier sites. Shade tolerant. Spreads by animal-dispersed seeds and found as scattered plants in forest openings and open forests, eventually forming dense stands. A nonleguminous nitrogen fixer.

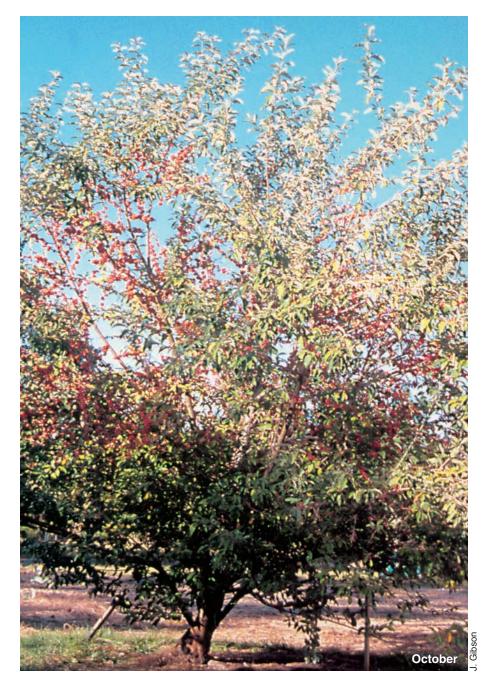
Resembles silverthorn or thorny olive, *E. pungens* Thunb., and Russian olive, *E. angustifolia* L. Silverthorn is an evergreen that has brown scaly and hairy twigs, flowers in late fall, and few reddish-silver scaly drupes in spring. Russian olive has silver scaly twigs and leaves, flowers in early summer, and many yellow olives in fall and winter. **Also resembles** minniebush, *Menziesia pilosa* (Michx. ex Lam.) Juss. ex Pers., a Southern Appalachian native at high elevations, which is distinguished by glands, not scales, on the midvein and leaves with finely serrate margins.

History and use. Introduced from China and Japan in 1830. Widely planted for wildlife habitat, strip mine reclamation, and shelterbelts.

States with suspected infestations are shown in gray.



Autumn Olive 2038



Winged Burning Bush













Euonymus alatus (Thunb.) Sieb. EUAL8

Synonyms: wahoo, winged euonymus, burning bush

Plant. Deciduous, wing-stemmed, bushy shrub to 12 feet (4 m) in height, multiple stemmed and much branched. Canopy broad and leafy. Small and obovate leaves green and turning bright scarlet to purplish red in fall. Paired purple fruit in fall.

Stem. Four corky wings or ridges appearing along young lime-green squarish twigs and becoming wider with age. Numerous opposite branches, with bases encircled by corky rings. Larger branches and bark becoming light gray.

Leaves. Opposite, obovate, and thin, only 1 to 2 inches (2.5 to 5 cm) long and 0.4 to 0.8 inch (1 to 2 cm) wide. Tips tapering to an acute point. Margins finely crenate. Both surfaces smooth and hairless. Dark green with whitish midvein above and light green beneath turning bright crimson to purplish red in fall. Petioles 0.04 to 0.16 inches (1 to 4 mm) long.

Flowers. April to May. Axillary pairs of small flowers at the ends of a Y-shaped 1-inch (2.5-cm) stem. Flowers inconspicuous, 0.2 to 0.3 inch (6 to 8 mm) across, greenish-yellow, five-lobed, pistil elongating as fruit forms.

Fruit and seeds. August to January. Dangling paired (or single) reddish capsules in leaf axils turning purple and splitting in fall to reveal an orange fleshy-covered seed.

Ecology. Shade tolerant. Colonizes by root suckers and spreads by animal-dispersed seeds.

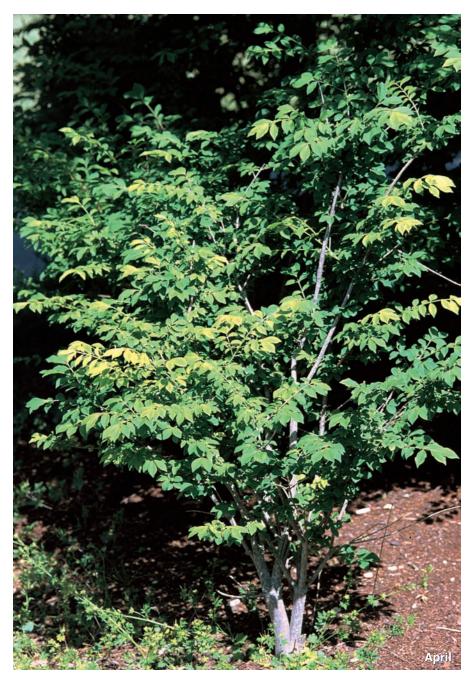
Resembles the larger leaved species of blueberry, *Vaccinium* spp., but their leaves are alternate. **Possibly resembles** rusty blackhaw, *Viburnum rufidulum* Raf., which also has opposite leaves, but distinguished by their larger size and leathery texture. Dormant twigs **may resemble** winged elm, *Ulmus alata* Michx., and sweetgum, *Liquidambar styraciflua* L., which are usually two-winged instead of four-winged.

History and use. Introduced from northeast Asia in the 1860s. Widely planted as an ornamental and for highway beautification.

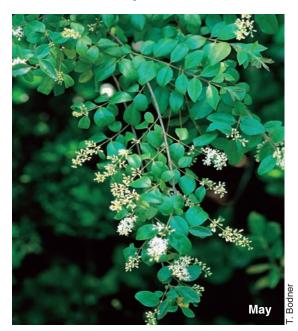
States with suspected infestations are shown in gray.



Winged Burning Bush

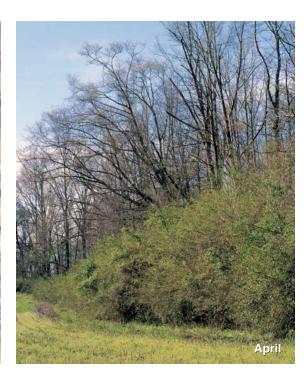


Chinese/European Privet

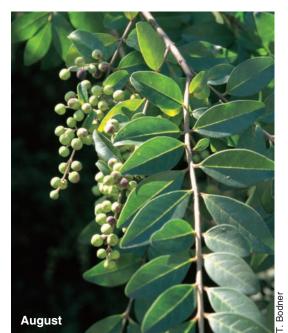








Chinese privet shown in all images









Ligustrum sinense Lour./L. vulgare L. LISI/LIVU

Plant. Semievergreen to evergreen, thicket-forming shrubs to 30 feet (9 m) in height that are multiple stemmed and leaning-to-arching with long leafy branches. Essentially indistinguishable except at flowering. Chinese privet is the most widely occurring.

Stem. Opposite or whorled, long slender branching that increases upward with twigs projecting outward at near right angles. Brownish gray turning gray green and short hairy (rusty or grayish) with light dots (lenticels). Leaf scars semicircular with one bundle scar. Bark brownish gray to gray and slightly rough (not fissured).

Leaves. Opposite in two rows at near right angle to stem, thin, ovate to elliptic with rounded tip (often minutely indented), 0.8 to 1.6 inches (2 to 4 cm) long and 0.4 to 1.2 inches (1 to 3 cm) wide. Margins entire. Lustrous green above and pale green with hairy midvein beneath (European privet not hairy beneath). Petioles 0.04 to 0.2 inch (1 to 5 mm) long, rusty hairy. Leaves usually persistent during winter.

Flowers. April to June. Abundant, terminal and upper axillary clusters on short branches forming panicles of white flowers. Corolla four-lobed, tube 0.06 to 0.1 inch (1.5 to 2 mm) long and equal or shorter than the lobes, with stamens extending from the corolla on Chinese privet and within the corolla on European privet. Fragrant.

Fruit and seeds. July to March. Dense ovoid drupes hanging or projecting outward, 0.2 to 0.3 inch (6 to 8 mm) long and 0.16 inch (4 mm) wide, containing one to four seeds. Pale green in summer ripening to dark purple and appearing almost black in late fall to winter.

Ecology. Aggressive and troublesome invasives, often forming dense thickets, particularly in bottom-land forests and along fencerows, thus gaining access to forests, fields, and right-of-ways. Shade tolerant. Colonize by root sprouts and spread widely by abundant bird- and other animal-dispersed seeds.

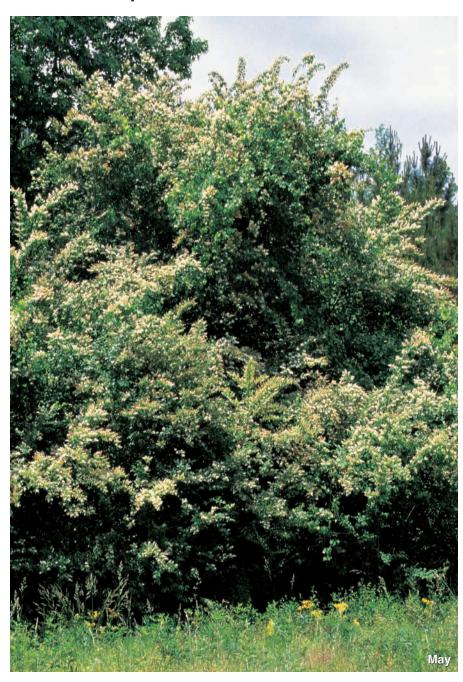
Resemble Japanese privet, *L. japonicum* Thunb., which has larger leaves and is further described in this book. **Also resemble** upland swampprivet, *Forestiera ligustrina* (Michx.) Poir., which occurs mainly on rocky sites and has short twigs and sparse flowers and fruit.

History and use. Introduced from China and Europe in the early to mid-1800s. Traditional southern ornamentals. Deer browse Chinese privet sprouts.

States with suspected infestations are shown in gray.



Chinese/European Privet



Japanese / Glossy Privet











Ligustrum japonicum Thunb./L. lucidum Ait. f. LIJA/LILU2

Plant. Evergreen to 20 feet (6 m) in height for Japanese privet and 35 feet (10 m) in height for glossy privet, with spreading crowns, thick opposite leaves, conical clusters of white flowers in spring, and green to purple-black fruit in summer and winter.

Stem. Twigs hairless and pale green becoming brownish to reddish tinged. Branches opposite and brownish gray with many raised corky dots (lenticels). Bark light gray and smooth except for scattered horizontal, discontinuous ridges.

Leaves. Opposite, leathery, ovate to oblong, bases rounded and tips blunt or tapering often with a tiny sharp tip. Two to four inches (5 to 10 cm) long and 1 to 2 inches (2.5 to 5 cm) wide. Margins entire and often yellowish rimmed and turned upward with glossy privet and slightly rolled under with Japanese privet. Upper blades lustrous dark green with 6 to 8 pairs of light-green veins with glossy privet and 4 to 6 pairs of indistinct veins with Japanese privet that protrude slightly from light green lower surfaces. Petioles 0.4 to 0.8 inch (1 to 2 cm) long for glossy privet and 0.2 to 0.4 inch (6 to 12 mm) long for Japanese privet, light green and glossy privet sometimes reddish tinged.

Flowers. April to June. Loosely branching, terminal- and upper-axillary, conical clusters of many small white four-petaled flowers. Fragrant.

Fruit and seeds. July to February. Conical-shaped, branched terminal clusters of ovoid drupes, each 0.2 to 0.5 inch (5 to 12 mm) long and 0.2 inch (5 mm) wide. Pale green in summer ripening to blue black in winter.

Ecology. Single plants or thicket-forming, occurring in the same habitats as Chinese privet, but generally not as abundant, depending upon location. Invade both lowland and upland habitats, but usually more prevalent in lowlands. Shade tolerant. Colonize by root sprouts and spread by abundant bird- and other animal-dispersed seeds.

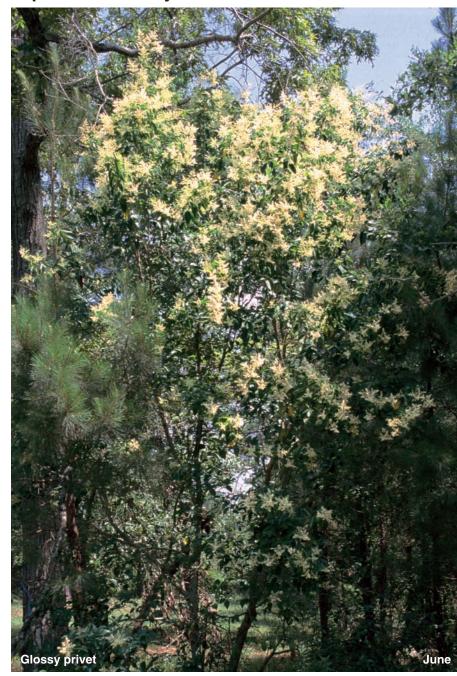
Resembles Chinese privet, *L. sinense* Lour., which has smaller and thinner leaves, is further described in this book. **Also resembles** redtip, also named photinia, *Photinia* x *fraseri* Dress, an ornamental shrub that has similar but alternate leaves.

History and use. Introduced from Japan and Korea in 1845 and 1794, respectively. Widely planted as ornamentals and escaped.

States with suspected infestations are shown in gray.



Japanese / Glossy Privet



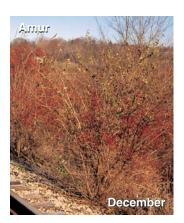
Bush Honeysuckles

















Amur honeysuckle, *Lonicera maackii* (Rupr.) Herder LOMA6 Morrow's honeysuckle, *L. morrowii* Gray LOMO2 Tatarian honeysuckle, *L. tatarica* L. LOTA Sweet-breath-of-spring, *L. fragrantissima* Lindl. & Paxton LOFR Bell's honeysuckle, *L. xbella* Zabel LOBE

(hybrid Morrows and Tatarian)

Plant. Tardily deciduous, upright, arching-branched shrubs to small trees. Amur to 30 feet (9 m) in height and spindly in forests, Morrow's to 6.5 feet (2 m) in height, Tatarian and sweet-breath-of-spring to 10 feet (3 m) in height, and Bell's to 20 feet (6 m) in height. Much branched and arching in openings, multiple stemmed, darkgreen opposite leaves, showy white to pink or yellow flowers, and abundant orange to red berries.

Stem. Opposite branched, light tan with braided-strand appearance. Bark often flaking. Older branches hollow.

Leaves. Opposite in two rows, ovate to oblong with rounded to subcordate bases, 1.2 to 4 inches (3 to 10 cm) long. Persistent into winter. Margins entire. Amur tapering to a long slender tip; Bell's to a medium tapering tip; and others with short pointed tips. Morrow's with wrinkled upper surface and both Amur and Bell's soft-hairy lower surface, others with hairless leaves. Petioles 0.1 to 0.4 inch (2.5 to 10 mm) long.

Flowers. February to June. Axillary, bracted short-stemmed clusters, each with one to several white to yellow (some pink to red) flowers. Petals tubular flaring to five lobes in two lips (upper lip four-lobed, lower lip single-lobed). Five extended stamen. Fragrant.

Fruit and seeds. June to February. Abundant spherical, glossy berries paired in leaf axils, each 0.2 to 0.5 inch (6 to 12 mm). Green becoming pink and ripening to red (sometimes yellow or orange). Usually persistent into winter.

Ecology. Often forms dense thickets in open forests, forest edges, abandoned fields, pastures, roadsides, and other open upland habitats. Relatively shade tolerant. Colonize by root sprouts and spread by abundant bird- and other animal-dispersed seeds. Seeds long-lived in the soil.

Resemble the woody vine, Japanese honeysuckle, *L. japonica* Thunb, as far as leaves and flowers. Also resemble the native shrub American fly honeysuckle, *L. canadensis* Bartr. ex Marsh., which has hairy margined leaves, blue fruit, and found at high elevations in mountains. Also resemble the native bush honeysuckles, *Diervilla* spp., which have similar leaves but terminal flowers in cymes and capsules for fruit.

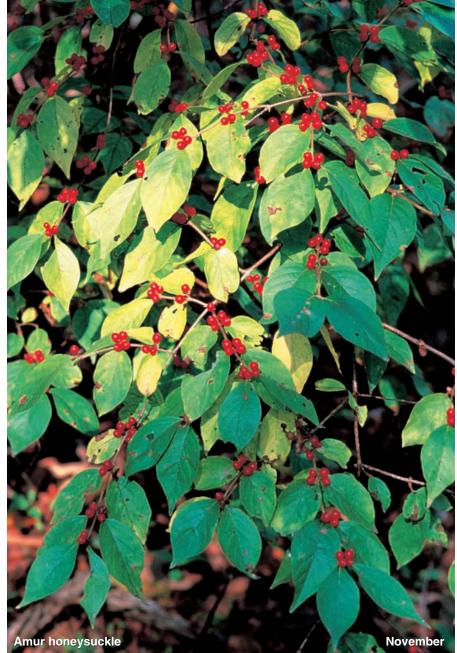
History and use. All introduced from Asia in the 1700s and 1800s. Mistakenly used as ornamentals and wildlife plants.

States with suspected infestations are shown in gray.



Bush Honeysuckles

2105



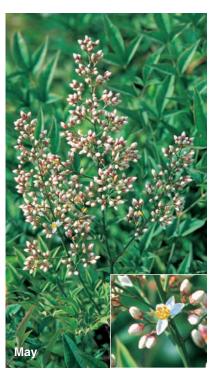
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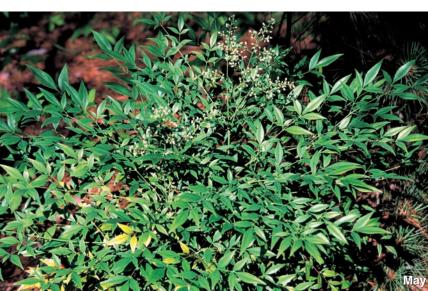
Sacred Bamboo, Nandina















Nandina domestica Thunb. NADO

Plant. Evergreen erect shrub to 8 feet (2.5 m) in height, with multiple bushy stems that resemble bamboo, glossy bipinnately compound green (or reddish) leaves, white to pinkish flowers in terminal clusters, and bright red berries in fall and winter.

Stem. Large compound leaves resembling leafy branches, woody leafstalk bases persisting as stubby branches, and overlapping sheaths encasing the main stem. Stubby branches whorled alternately up the stem and tightly stacked near terminals for a given year's growth. The overlapping sheaths on the main stem give the appearance of bamboo, thus, the common name. Stem fleshy and greenish gray near terminal, becoming woody barked and tan to brown with fissures towards the base. Wood bright yellow.

Leaves. Alternately whorled, bipinnately compound on 1.5 to 3 feet (0.5 to 1 m) slender leafstalks, often reddish tinged with joints distinctly segmented. Leafstalk bases clasping stems with a V-notch on the opposite side of attachment. Nine to eighty-one nearly sessile leaflets, lanceolate to diamond-shaped, 0.5 to 4 inches (1.2 to 10 cm) long and 0.4 to 1.2 inches (1 to 3 cm) wide. Glossy light green to dark green sometimes red tinged or burgundy.

Flowers. May to July. Terminal (or axillary) panicles of several hundred flowers, 4 to 10 inches (10 to 25 cm) long. Pink in bud, opening to three (two to four) lanceolate deciduous petals, white to cream, with yellow anthers 0.2 to 0.3 inch (6 to 8 mm) long. Fragrant.

Fruit and seeds. September to April. Dense terminal and axillary clusters of fleshy, spherical berries 0.2 to 0.3 inch (6 to 8 mm). Light green ripening to bright red. Two hemispherical seeds.

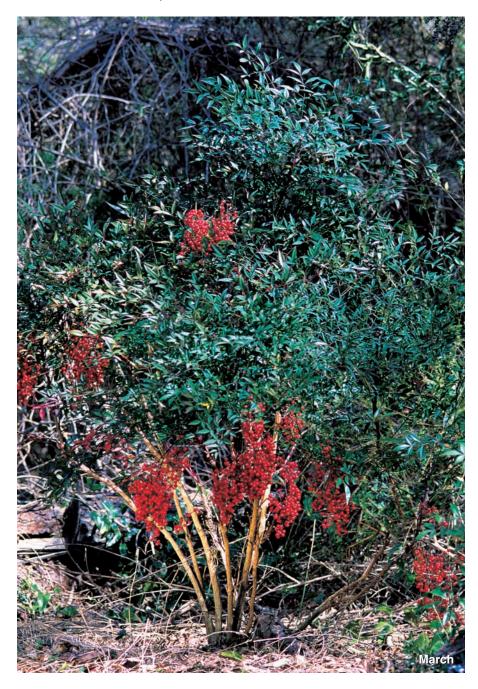
Ecology. Occurs under forest canopies and near forest edges. Shade tolerant. Seedlings frequent in vicinity of old plantings. Varying leaf colors in the various cultivars, some of which do not produce viable seeds. Colonizes by root sprouts and spreads by animal-dispersed seeds.

History and use. Introduced from eastern Asia and India in the early 1800s. Widely planted as an ornamental, now escaped and spreading from around old homes and recent landscape plantings. Sterile seeded reddish cultivars available.

States with suspected infestations are shown in gray.



Sacred Bamboo, Nandina



Nonnative Roses





Multiflora rose shown in all images















Multiflora rose, *Rosa multiflora* Thunb. ex Murr. ROMU Macartney rose, *R. bracteata* J.C. Wendl. ROBR Cherokee rose, *R. laevigata* Michx. ROLA

Plant. Evergreen except multiflora. Erect climbing, arching, or trailing shrubs to 10 feet (3 m) in height or length. Clump forming. Pinnately compound leaves, frequent recurved and straight thorns, clustered or single white flowers in early summer, and red rose hips in fall to winter.

Stem. Long arching or climbing by clinging using recurved or straight thorns. Green with leaf and branch scars linear and spaced like nodes. Flower buds of multiflora often red in winter. Bark dark brown with streaks of light brown or green.

Leaves. Alternate, odd-pinnately compound with three to nine elliptic to lanceolate leaflets, each 1 to 3 inches (2.5 to 8 cm) long. Margins finely and sharply serrate. Leafstalk bases clasping, channeled, and often bristled on margins with toothed hairs.

Flowers. April to June. Terminal or axillary branched clusters or single flowers. Five white petals. Many yellow anthers in center.

Fruit and seeds. July to December. Rose hip, spherical, and fleshy, 0.25 to 0.4 inch (0.6 to 1 cm). Green to yellow and ripening to glossy red.

Ecology. Form small-to-large infestations often climbing up into trees. Multiflora widely planted and often spreading along right-of-ways and invading new forests and forest margins. Colonize by prolific sprouting and stems that root, and spread by animal-dispersed seeds.

Resemble native Carolina rose, *R. carolina* L., swamp rose, *R. palustris* Marsh., and climbing rose, *R. setigera* Michx., all of which have pink flowers in spring and nonbristled leafstalk bases, but none forming extensive infestations except swamp rose in wet habitat.

History and use. Introduced from Asia. Traditionally planted as ornamentals, live-stock containment, and wildlife habitat. Multiflora widely planted for "living fences" or screening.

States with suspected infestations are shown in gray.



Nonnative Roses

