

NORTHEASTERN SHRUB AND
SHORT TREE IDENTIFICATION
A GUIDE FOR RIGHT-OF-WAY VEGETATION
MANAGEMENT

~ SECOND EDITION ~

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Viburnum lentago
Cover photo: Upton, Massachusetts



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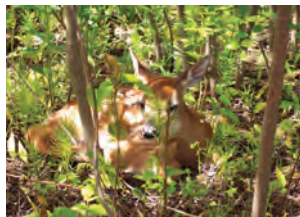




Dryden, New York

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INTRODUCTION

This field guide describes common shrubs, woody vines, and short trees of the northeast, with an emphasis on those species that occur in old-field, early-successional habitats. While its primary application is intended to assist managers in the identification and management of vegetation along utility rights-of-way (ROWs), we have found that it has broad application for anyone with an interest in identifying shrubs and short trees.

Information in this book was compiled from numerous field guides and references. As a field guide it is somewhat unique in that it presents in a single source a detailed compilation of facts on plant characteristics and identification and detailed color photographs important in identifying the species. These descriptions, which include pertinent information regarding management opportunities/considerations, and the original detailed drawings, diagrams, and photographs make this book a useful reference source for naturalists and vegetation managers. While most of the photographs were collected from across New York and Massachusetts, the ranges for most species extend throughout the northeast and into the mid-Atlantic states. The species included are not a complete accounting of shrubs and trees throughout this range, but do represent many common species occurring in old-field, early-successional habitats.

Our book features over 100 species with at least one page devoted to each species or genera. Collectively, there are over 650 original diagrams and photos portrayed on these pages. A series of supporting definitions is presented in diagrammatic and glossary form. A dichotomous key—based on foliage, stems, and when necessary, fruits and flowers—is available to guide identification of species. An appendix is included that outlines typical habitat and plant origin, both of which may be helpful to identification and management.

In this second edition, we have added several important species that were not included previously, corrected some typographical and factual errors, and updated dozens of photos. We have also updated and abridged the section on willows, since a photo-rich companion field guide was recently published (*Willow (Salix) Identification in New York State* by Ballard et al. 2009) dealing specifically with the identification and management challenges of the genus *Salix*.

We look at this book as a “living document” that can be improved with subsequent editions. As such, please consider sending critical comments to the authors so the guide can be improved as a complete source for identification of common shrubs and short trees of the northeast.

—Benjamin D. Ballard, Heather L. Luczak, and Christopher A. Nowak

MANAGING FOR SHRUBS AND SHORT TREES ACROSS POWERLINE RIGHTS-OF-WAY

Plants on rights-of-way (ROWs) have commonly been classified as desirable or undesirable, non-target or target, not capable or capable. In general, short-stature plants are given desirable status, and tall-growing plants undesirable status. Desirable plants are “not targeted” for removal, as they are “not capable” of causing disruptions in the safe and reliable transmission of electricity and are compatible with the ROW. The distinction between the two classes—desirable and undesirable—is defined by the maximum height of the plant. If a plant can grow taller than 20 feet it is typically considered undesirable¹. All other plants are, by default, desirable.

A two class system for vegetation—desirable or undesirable—is an oversimplification. Many tall-growing shrubs and short trees that could occupy the edges of a ROW without jeopardizing safety or reliability are excluded from the list of desirable plants with a 20-foot maximum height limit. Conceptually, it is possible to divide a powerline ROW into two zones: (1) a wire zone, or the area directly under the conductors, where no plant that grows greater than 20 feet tall can persist; and (2) a border zone along the edge of the outside conductor where plants can grow to 30-40 feet tall (see Figure 1). The idea of managing for taller desirable plants along the ROW edge is not new. Over 50 years ago, Niering and Egler (1955) modeled this concept of managing for different vegetation across a ROW. More recently, Bramble, Byrnes and Hutnik (1985) and others have used a “wire zone-border zone” approach to apply the same concept.

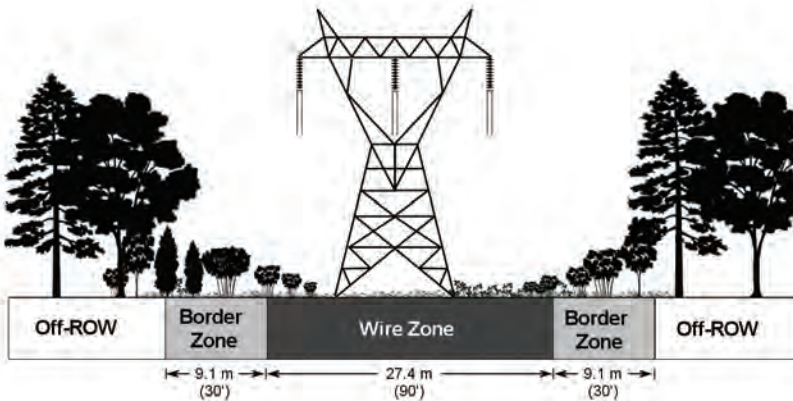


FIGURE 1. A cross-section of a 365 kV ROWs illustrating progressively taller vegetation from centerline to the edges (after Ballard et al. 2007).

1—Plants taller than 20 feet have the capacity to grow into the wire security zone, which is a volume of air space around the wire conductors. As electricity is conducted across these wires, a strong electrostatic force is created that can cause electricity to arc through plants that enter the zone and dissipate into the ground. This causes a ground-fault disruption in electricity service, and makes for potentially lethal ground conditions.

The figures used to depict this concept have recently been updated and the concept of managing multiple zones within the ROW further refined (see Ballard, McLoughlin, and Nowak, 2007).

A more refined classification of shrubs and short trees, as used in this guidebook, will enhance benefits and values associated with ROW vegetation. The “feathered” effect on ROWs associated with progressively taller vegetation from centerline to the edges has certain aesthetic appeal. Cost for managing vegetation will be reduced as the tallest vegetation possible for each zone will more effectively compete with, and reduce the numbers of, undesirable plants. Diversity of vegetation structure and species composition across a ROW will provide diverse elements of habitat for wildlife.

We have classified each of the shrubs and short trees in this guide according to a three-class system based on published mature heights and relative growth rates, using the height class scheme described above. Text descriptions for each species include the range of typical heights for that species, as well as the maximum height (in parentheses) used in the classification, based on the literature or our personal experience. Additionally, each species identification page has a management zone icon located in the upper right hand corner (e.g., Figure 2). The three zones—under the conductors, along the edges of the ROW, and off-ROW—are marked in one of three colors. Red means the species is capable of growing too tall for that zone and should be removed. Yellow means that the plant is borderline in height for that zone; it could be kept, but may need to be removed. Green indicates that the plant can be left untreated in that zone.

Since this book is a guide, our species classifications should be viewed only as recommendations. It is important to adjust maximum heights and the associated management zones based on local knowledge and experience. Note that growth rates of plants, site-specific information on soils, landforms, tower structures, and line voltage must be considered when using and adjusting management zone designations.

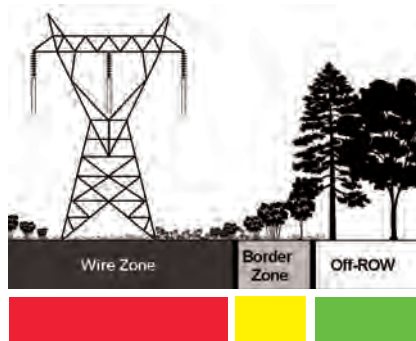
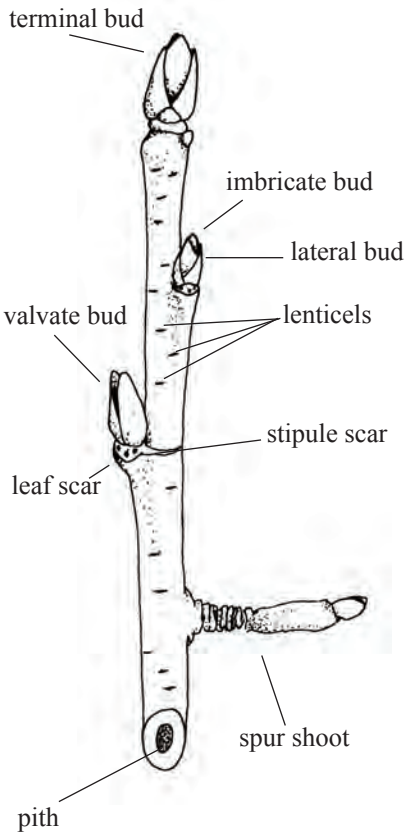
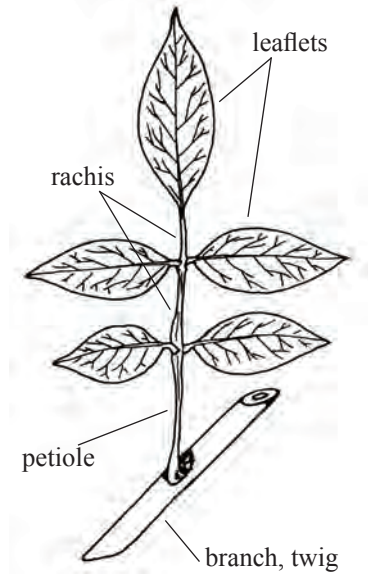


FIGURE 2. An example of the color scheme for management of shrubs and trees on ROWs in three zones – under the conductors (wire zone), along the edges of the ROW (border zone), and off-ROW. Red means the species grows too tall for that zone and should be removed. Yellow means that the plant is borderline in height for that zone; it could be kept, but may need to be removed. Green indicates that the plant can be left untreated in that zone.

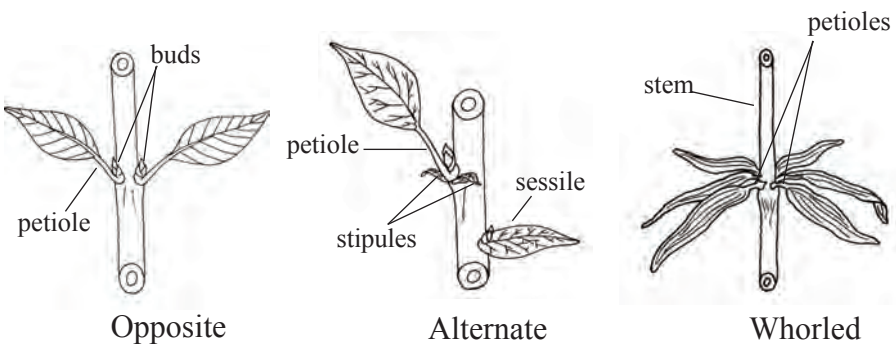
TWIG MORPHOLOGY



COMPOUND LEAF



SIMPLE LEAF ARRANGEMENT



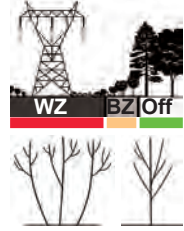
Drawings by J. Magoon

DICHOTOMOUS KEY

1. LEAVES ARE EVERGREEN—2
1. LEAVES ARE DECIDUOUS—14
 2. NEEDLE OR SCALE-LIKE LEAVES (<0.25" WIDE)—3
 2. BROADLEAVES (>0.25" WIDE)—8
3. LEAVES ARE NEEDLE-LIKE—4
3. LEAVES ARE SCALE-LIKE, OR ARE BOTH SCALE-LIKE AND NEEDLE-LIKE—5
 4. LEAVES ARE FLATTENED AND ATTACHED ON STALKS RUNNING PARALLEL ALONG THE STEM—*TAXUS CANADENSIS*, AMERICAN YEW, p. 103
 4. LEAVES ARE AWL-LIKE, ARRANGED IN WHORLS OF THREE—*JUNIPERUS COMMUNIS*, GROUND JUNIPER, p. 55
5. PLANT IS A LOW GROWING SHRUB—*JUNIPERUS HORIZONTALIS*, CREEPING JUNIPER, p. 56
5. PLANT IS A TREE—6
 6. SCALE-LIKE AND NEEDLE-LIKE LEAVES ARE BOTH PRESENT—*JUNIPERUS VIRGINIANA*, EASTERN RED CEDAR, p. 57
 6. ONLY SCALE-LIKE LEAVES ARE PRESENT—7
7. LEAVES ARE IN MUCH FLATTENED SPRAYS, CONES ARE ELLIPTICAL, RANGE IS NORTHERN, INLAND—*THUJA OCCIDENTALIS*, NORTHERN WHITE CEDAR, p. 104
7. LEAVES ARE IN SPRAYS, BUT NOT FLATTENED, CONES ARE GLOBULAR, RANGE IS EASTERN, COASTAL—*CHAMAECEPARIS THYOIDES*, ATLANTIC WHITE-CEDAR, p. 32
 8. LEAVES HAVE A DISTINCTLY MUCRONATE MARGIN (WITH SHARP, POINTED TIPS)—*ILEX OPACA*, AMERICAN HOLLY, p. 53
 8. LEAVES DO NOT HAVE A DISTINCTLY MUCRONATE MARGIN—9
9. MATURE PLANT IS GENERALLY < 1' TALL—10
9. MATURE PLANT IS GENERALLY > 1' TALL—11
 10. LEAVES ARE SMALL: 0.25-0.5" LONG, YOUNG STEMS ARE SMOOTH, BROWN—*VACCINIUM MACROCARPON*, CRANBERRY, p. 109
 10. LEAVES ARE LARGER: 0.5-1.25" LONG, YOUNG STEMS ARE WHITE, VELVETY—*ARCTOSTAPHYLOS UVA-URSI*, BEARBERRY, p. 22
11. LEAVES ARE SLIGHTLY TOOTHED TOWARDS THE TIP, FRUIT IS BLACK—*ILEX GLABRA*, INKBERRY, p. 52
11. LEAVES HAVE AN ENTIRE MARGIN, FRUIT IS NOT BLACK—12
 12. UNDERSIDE OF MATURE LEAVES ARE COVERED WITH RUST-COLORED DOTS—*CHAMAEDAPHNE CALYCVLATA*, LEATHERLEAF, p. 33
 12. UNDERSIDE OF MATURE LEAVES ARE NOT COVERED WITH RUST-COLORED DOTS—13
13. LEAVES ARE MOSTLY ALTERNATE, FLOWER/FRUIT ARE IN CLUSTERS AT THE ENDS OF BRANCHES—*KALMIA LATIFOLIA*, MOUNTAIN LAUREL, p. 59
13. LEAVES ARE OPPOSITE OR IN WHORLS OF 3, FLOWER/FRUIT ARE IN CLUSTERS FROM THE AXILS OF PREVIOUS YEAR'S LEAVES—*KALMIA ANGUSTIFOLIA*, SHEEP LAUREL, p. 58
 14. BRANCHES AND LEAVES ARE OPPOSITE (OR NEARLY SO) OR WHORLED—15
 14. BRANCHES AND LEAVES ARE ALTERNATELY ARRANGED—39
15. LEAVES ARE COMPOUND—16
15. LEAVES ARE SIMPLE—17
 16. STEM IS WARTY AND TWIGS HAVE A LARGE WHITE PITH—*SAMBUCUS CANADENSIS*, BLACK ELDERBERRY, p. 94
 16. STEM IS WARTY AND TWIGS HAVE A LARGE ORANGE/BROWN PITH—*SAMBUCUS RACEMOSA*, RED ELDERBERRY, p. 95
17. PLANT HAS LOBED LEAVES—18
17. PLANT HAS LEAVES WITH NO LOBES—22
 18. PLANT HAS BOTH LEAVES WITH LOBES AND LEAVES WITHOUT—*SYMPHORICARPOS ALBUS*, SNOWBERRY, p. 101
 18. ALL LEAVES ARE PALMATELY LOBED—19
19. BARK IS SMOOTH AND GREEN WITH WHITE LONGITUDINAL STRIPES—*ACER PENNSYLVANICUM*, STRIPED MAPLE, p. 17
19. BARK DOES NOT HAVE CONSPICUOUS WHITE STRIPES—20
 20. PETIOLE HAS 2 CONCAVE GLANDS—*VIBURNUM OPULUS*, Highbush Cranberry, p. 116
 20. PETIOLE DOES NOT HAVE GLANDS—21
21. UNDERSIDE OF LEAVES HAVE TINY BLACK DOTS, FLOWERS ARE WHITE IN FLAT-TOPPED CLUSTERS—*VIBURNUM ACERIFOLIUM*, MAPLE-LEAF VIBURNUM, p. 111
21. UNDERSIDE OF LEAVES LACK BLACK DOTS, FLOWERS ARE GREEN ON UPRIGHT STALKS—*ACER SPICATUM*, MOUNTAIN MAPLE, p. 18
 22. LEAF MARGINS ARE ENTIRE OR WAVY—23
 22. LEAF MARGINS ARE TOOTHED—33
23. LEAVES HAVE ARCUATE VENATION—24
23. LEAVES DO NOT HAVE ARCUATE VENATION—28
 24. STEMS ARE RED OR PURPLISH—25
 24. STEMS ARE NOT RED OR PURPLISH—26
25. TWIGS HAVE AN ORANGE OR BROWN PITH AND ARE PUBESCENT AT TIPS—*CORNUS AMOMUM*, SILKY DOGWOOD, p. 37
25. TWIGS HAVE A WHITE PITH AND BARK HAS WARTY LENTICELS—*CORNUS SERICEA*, RED OSIER DOGWOOD, p. 41
 26. PLANT IS A SMALL TREE, USUALLY WITH ONE MAIN STEM AND BLOCKY BARK—*CORNUS FLORIDA*, FLOWERING DOGWOOD, p. 38
 26. PLANT IS A SHRUB—27
27. TWIGS GREENISH WITH PURPLE BLOTCHES/STREAKS, LEAVES NEARLY ROUND, ROUGH TEXTURED—*CORNUS RUGOSA*, ROUND-LEAF DOGWOOD, p. 40
27. TWIGS REDDISH-BROWN LACKING BLOTCHES/STREAKS, LEAVES ELLIPTIC TO OVATE—*CORNUS RACEMOSA*, GRAY DOGWOOD, p. 39
 28. LEAVES ARE 3-6" LONG, OPPOSITE OR IN WHORLS OF THREE—29
 28. LEAVES ARE 1-3" LONG, OPPOSITE, NOT WHORLED—31
29. LEAVES ARE CORDATE, OR NEARLY SO, WITH LARGE MULTI-SCALED BUDS—*SYRINGA VULGARIS*, COMMON LILAC, p. 102
29. LEAVES ARE NOT CORDATE—30

Alnus incana

speckled alder hoary alder



Etymology: *Alnus* - L. for Alder; *incana* - L. for grayish or hoary; referring to the whitish underside of the leaves.

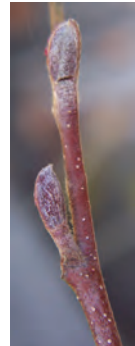
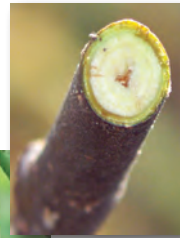
Form: A shrub or small tree reaching heights of 10-15' (35') tall.

Leaves: Alternate, simple, oval to elliptic, sharply double toothed, pointed tips, and distinctly whitish on the underside.

Flowers: Male flowers are reddish-green catkins, 1.5-3" long, that appear in the autumn and open the following spring, before leaf emergence. Female flowers are tight, green, oval clusters, 0.25-0.5" long, that appear in the autumn at the ends of twigs and open the following spring.

Fruit: Small, woody, cone-like fruits, 0.75" long, usually in clusters of three or more at ends of branches. Fruits are green in the summer, mature to brown "cones" in the autumn, and persist on the branches throughout the winter and into the next growing season.

Twig/Bark: Young twigs are smooth, reddish-brown, with horizontal lenticels and a triangular pith. Older bark is smooth, gray with rough orange lenticels.



Arctostaphylos uva-ursi

bearberry
sandberry



Wetland
Indicator:
NI



Etymology: *Arctos* - Gr. for bear; *staphyle* - Gr. for a bunch of grapes; *uva-ursi* - L. for bear's grape.

Form: A low-growing, dense ground cover, with stems trailing along the ground. Usually 2-6" tall.

Leaves: Evergreen, alternate, simple, elliptical to lanceolate, 0.5-1.25" long, entire, often with margins rolled under. Thick and leathery with a prominent midvein, glossy on top and paler on underside.

Flowers: Small, 0.2" nodding, white with pinkish tinge, in drooping clusters of up to 5 blossoms, on bright red stalks. Flowers in April - May.

Fruit: Bright red, berry-like drupe, 0.25-0.33" diameter. Ripe in late July - August and often persist through December.

Twig/Bark: Young stems are white and velvety. Older stems become smooth, reddish-brown, and exfoliating.



Aronia arbutifolia

red chokeberry



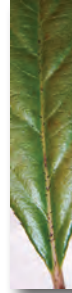
Wetland
Indicator:
FACW



Etymology: *Aronia* - Gr. for medlar tree; *arbutifolia* - resembling the leaves of *Arbutus*.

Form: A small to medium shrub reaching heights of 10-12' (20') tall.

Leaves: Alternate, simple, elliptic to obovate, 2-4" long, finely toothed, densely hairy on underside. The tiny dark glands along the midrib are a key characteristic for identifying both red and black chokeberry.



Flowers: Flat-topped clusters of white flowers, 9-20 flowers per cluster, 5 rounded petals. Flowers in March - May.

Fruit: A bright red to purple berry-like pome, 0.25" diameter, ripens in late summer to early fall and persists on the shrub throughout much of the winter.

Twig/Bark: Young twigs are slender, reddish-brown, and unlike black chokeberry, are densely covered with fine hairs. Older bark is smooth with lenticels.



Celastrus spp.

bittersweet

(American—*C. scandens*, and
oriental—*C. orbiculatus*)

Etymology: *Celastrus* - from the Gr. word kelastros, name for an evergreen tree; *scandens* - for trailing or climbing; *orbiculatus* - means disc-shaped or round.

Form: Rapid-growing, climbing vine, with an open, spiraling pattern, often forming dense thickets.

Leaves: Deciduous, alternate, spiral or 2-ranked by the twisting of the stem, glabrous, 2-5" long; oblong-elliptic to ovate or obovate, finely serrated, somewhat rounded teeth; *C. scandens*: ~2.5 times longer than wide, pointed leaf tip; *C. orbiculatus*: ~1.5 times longer than wide, often with a blunt leaf tip.

Flowers: fragrant, small, greenish-white to greenish-yellow; *C. scandens*: grow in clusters at branch tips, usually 6 or more flowers per cluster. *C. orbiculatus*: ~2-3 in cymes in the leaf axils below the branch tips.

Fruit: Orange to yellow-orange capsules, hang in clusters which split open to reveal bright red seeds.

Twig/Bark: Brown, young stems smooth, becoming corky with diamond-shaped patterns.



Wetland
Indicator:

FACU-/FACU



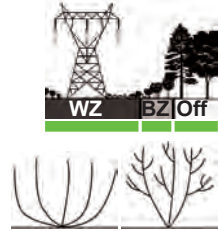
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Cephalanthus occidentalis

buttonbush

Wetland
Indicator:
OBL



Etymology: *Cephalanthos* - from the Gr. word kephalo, meaning 'head' and anthos, meaning 'flower'; referring to the round 'head' of flowers; *occidentalis* - referring to the western hemisphere.

Form: A spreading shrub reaching heights of 6-8' (18') tall. Rarely grows in the form of a small tree up to 30' tall.

Leaves: Opposite or whorled, simple, lanceolate to oblong, entire, pointed tips, up to 7" long, petioles with a pair of pointed stipules, slightly pubescent on underside.

Flowers: Small, creamy-white flowers with long extended styles, occurring in dense, spherical clusters on long stalks that extend from leaf axils. Flowering in July - August.

Fruit: Spherical head of numerous brown nutlets. Mature in September - October.

Twig/Bark: Young twigs are slender, reddish-brown, with light colored lenticels, and a light brown pith. Older bark becomes flaky and scaly.



Cercis canadensis

eastern redbud



Wetland
Indicator:
FACU-



Etymology: *Cercis* - from the Gr. kerkis, its ancient name; *canadensis* - for Canadian, though its range is actually more southern.

Form: A large shrub or small tree reaching heights of 20-30' tall.

Leaves: Alternate, simple, cordate with entire margin, 3-5" long, petioles conspicuously swollen on both ends.

Flowers: Flowers are showy, light to dark magenta in color; appear in clusters on stems before leaves emerge.

Fruit: Fruit are flattened dry, pea-like pods 2-4" long.

Twig/Bark: Twigs are black, spotted with lighter lenticels, slender and zigzag. Older bark is dark and scaly with ridges; sometimes with maroon patches and orange in the cracks.



Cornus rugosa

round-leaf dogwood



Wetland
Indicator:

—



Etymology: *Cornus* - L. name for dogwood; *rugosa* - wrinkled or rough, referring to the rough texture of the leaves. Common name refers to the leaves that are significantly more rounded than other dogwoods.

Form: A medium shrub with spreading branches, reaching heights of 3-10' (12') tall.

Leaves: Opposite, simple, entire, ovate to nearly round, arcuate venation, pointed tip, 2.5-6" long. Stiff hairs on upper and lower leaf surfaces give them a rough texture. Leaves are significantly more rounded than the other dogwoods.

Flowers: Small, creamy-white flowers in dense flat-topped clusters, 2-3" across. Flowers in late June.

Fruit: Light blue, roundish, berry-like drupes, 0.25" diameter, on red stalks, in flat-topped clusters. Ripe in August - September.

Twig/Bark: Young twigs are yellowish-green, streaked with purple or reddish-brown striations or blotches.

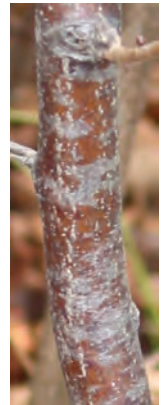
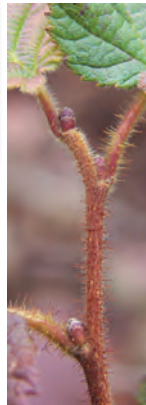


Corylus americana

American hazelnut American filbert



Wetland
Indicator:
FACU-



Etymology: *Corylus* - L. for the hazel; *americana* - referring to the Americas.

Form: A medium shrub that often forms dense thickets, reaching heights of 5-10' (12') tall.

Leaves: Alternate, simple, ovate to broadly elliptic, doubly toothed, 2-4.5" long, rounded or cordate base, pointed tips, and coarse, bristly, gland-tipped hairs on the petiole.

Flowers: Male flowers are light brown catkins, 1-3" long, in clusters at branch tips, opening in early March - April, before leaf emergence. Female flowers are small and short-lived with red stigmas and styles extending from small grayish buds.

Fruit: Groups of 2-6 round, light brown, hard-shelled nuts, 0.5" diameter, enclosed within two green leafy bracts. Mature in August - September.

Twig/Bark: Young twigs are slender, zig-zag, reddish, and covered with numerous gland-tipped hairs. Older bark is gray and smooth.

Hydrangea spp.

hydrangeas



Wetland
Indicator:

FACU/FAC*



There are two common species in our region: *H. arborescens* (native, more common) and *H. paniculata* (pictured; many cultivars).

Etymology: *Hydrangea* - Gr. hydro (water) & aggos (jar), referring to the cup-shaped fruit; *arborescens* - L. for tree-like; *paniculata* - with panicles of flowers.

Form: A low-growing, rounded shrub 3-5' tall (*H. arborescens*); large shrub 10-15' (20') tall (*H. paniculata*).

Leaves: Opposite, or whorled (*H. paniculata*), simple, ovate to elliptical, toothed; 2-8" long, 2-5" wide; cordate or rounded base; dark green color.

Flowers: Large, round flowerheads resembling pompoms, or round, flat flowerheads in umbrella-shaped clusters; composed of small fertile flowers enclosed by showy sterile flowers. Blooming in June through summer.

Fruit: Small dry capsules.

Twig/Bark: New stems, orange-brown in color, older stems are dark gray; older bark exfoliating/peeling, or ridged/furrowed (*H. paniculata*); stems have hollow pith.



Kalmia latifolia

mountain laurel calico-bush



Wetland
Indicator:
FACU



Etymology: *Kalmia* - named after the Swedish botanist Peter Kalm; *latifolia* - L. for broad-leaved.

Form: A medium, mound-forming shrub, reaching heights of 5-15' (32') tall.

Leaves: Evergreen, all or mostly alternate, simple, entire, elliptic to lanceolate, 2-4" long, glossy, often clustered at ends of branches.

Flowers: Large rounded clusters of white or pink, cup-shaped flowers, 4-6" across, at ends of branches. Flowers are star-shaped with 10 stamens that are bent backwards to fit into pockets on the petals. Flowers in June - July.

Fruit: A 5-parted, round, brown capsule that matures in the autumn and persists through the winter.

Twig/Bark: Young twigs are greenish, smooth, and sticky. Older bark is reddish-brown, and shreddy.



Physocarpus opulifolius

ninebark

Wetland
Indicator:
FACW-



Etymology: *Physo* - Gr. for bladder or air sac; *karpos* - Gr. for fruit; *opulifolius* - with leaves like *Viburnum opulus*. Ninebark refers to the many layers of exfoliating bark.

Form: A shrub or small tree with arching branches, reaching heights of 6-10' (12') tall.

Leaves: Alternate, simple, toothed, rounded or ovate, 1-3" long, usually 3-lobed, with terminal lobe being the longest. Dark green above, underside may be pubescent, elongate stipules at leaf base.



Flowers: Flat-topped clusters of small, white to pinkish, 5-parted flowers, unpleasant odor. Flowers in May - June.

Fruit: Dense clusters of small, papery, purple to brown, 5-parted capsules. Fruits are so abundant in the autumn that they often weigh the branches down.



Twig/Bark: Young stems are greenish, smooth or slightly pubescent and angled or ridged. Older bark is gray-brown and separates into long thin strips.



Rhus typhina

staghorn sumac velvet sumac

Etymology: *Rhus* - L. for a bushy shrub; *typhina* - resembling *Typha*, the cattail, referring to the stems that resemble the cattail's velvety flower spikes.

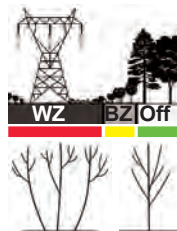
Form: A small tree, with a flat-topped, spreading crown, and usually a single stem, reaching heights of 8-20' (35') tall. Occurs in colonies of many vegetatively reproduced individuals.

Leaves: Alternate, compound with 11-31 toothed, lanceolate leaflets. Entire leaf is 16-24" long and may be hairy on the underside.

Flowers: Small greenish to yellow flowers in dense, upright, conical clusters, 5-8" long. Flowers in May - July.

Fruit: Small, round, dark red, pubescent drupes in dense conical clusters. Mature in late summer and persist on the branches through the winter.

Twig/Bark: Young twigs are stout, gray, have an orange pith, and in contrast to smooth sumac, are densely pubescent.



Wetland
Indicator:

Rubus occidentalis

black raspberry

black-cap



Wetland
Indicator:
FACU-



Etymology: *Rubus* - L. for a bramble, *occidentalis* - referring to the western hemisphere.

Form: Upright, arching stems that grow in dense clusters, reaching heights of 2-6' tall.

Leaves: Alternate, pinnately compound with 3-5 toothed, ovate leaflets, 1- 4.75" long. Light green above and paler on underside, sharp prickles on petiole.



Flowers: Small greenish flowers in clusters at ends of twigs or in leaf axils. Flowers in May - June.



Fruit: Multiple of drupes, dark red, turning black when ripe. Separates from the hard inner receptacle when ripe in June - July.

Twig: Strongly glaucous to purplish-red biennial canes with scattered hooked prickles which are larger on older stems and more stout than those on red raspberry.



Salix spp.

willows

There are 20-30 species of willow (plus hybrids) that are relatively common in our region, but they are difficult to identify. We recommend **Willow (Salix) Identification in New York State** (Ballard et al. 2009) as a photo-rich field guide for willow.

Etymology: *Salix* - L. for willow.

Form: Small to large shrubs, small to large trees.

Leaves/buds: Alternate, simple leaves, with or without stipules. Buds visible almost year-round, except early in growing season after bud break. Buds of all willows are **single-scale** buds.

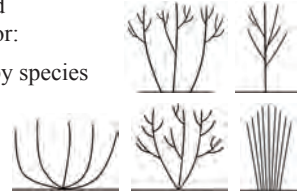
Flowers: Individual plants usually either male or female. Typically small, white to silvery-gray, soft catkins. Flowers usually in April - June.

Fruit: Numerous, oval, capsules. Seeds with white/silvery tufts of hairs.

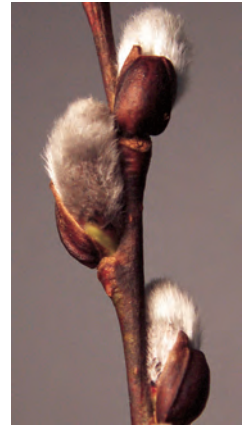
Twig/bark: Often tree form willow species have bark that cracks, blisters or flakes at about 1" diameter (rule of thumb), though smooth stems <1" could be tree or shrub form.



Wetland Indicator:
varies by species



Salix discolor



young catkins



S. discolor - male catkin



S. amygdaloides - female catkin



S. lucida - fruit capsules (opened)



Salix seeds

Salix spp.



Spiraea tomentosa

steeplesbush hardhack



Wetland
Indicator:
FACW



Etymology: *Spiraea* - L. for meadow-sweet; *tomentosa* - L. for dense hair, referring to the dense covering of hair on the underside of the leaves, stems, and fruits.

Form: A small shrub with mostly unbranched, erect stems, forming mounds, reaching heights of 2-4' (6').

Leaves: Alternate, simple, toothed, or doubly toothed, narrowly ovate to elliptic, 1-3" long, dull, wrinkled above, and densely pubescent and white on underside.

Flowers: Small pink to purple flowers in spiked, branching clusters at tops of stems, 4-7" long. Flowers in July - August.

Fruit: Elongated clusters of tiny, dark red to brown, pubescent follicles. Ripe in late summer and persisting through the winter.

Twig/Bark: Twigs are green to brownish, slightly ridged, and densely pubescent. Older stems are smooth and purplish-brown.



Syringa vulgaris

common lilac

Etymology: *Syringa* - Gr. syrinx (pipe), refers to hollow stem (although this plant does not have hollow stems!); *vulgaris* - L. for common.

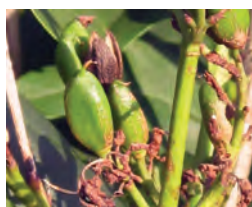
Form: Upright, deciduous shrub; 8-15' tall, 6-12' wide; suckers, forming thickets.

Leaves/buds: Opposite, simple, ovate leaves; 2-5" long; nearly cordate base, entire leaf margin, dark green, almost bluish-green color; large multi-scaled buds.

Flowers: White to dark purple color; fragrant; borne on large terminal panicles 4-8" long.

Fruit: Beaked capsules, usually located at the ends of stems.

Twig/Bark: Smooth, light-gray bark, stout stems; small, raised lenticels; raised, crescent-shaped leaf scars; pith is solid white.



Toxicodendron radicans

poison ivy



Wetland
Indicator:
FAC



☠ All parts of this plant are toxic and contact with the skin should be avoided.

Etymology: *Toxico* - L. - meaning poison and *dendron* - L. meaning tree; *radicans* - with rooting stems.

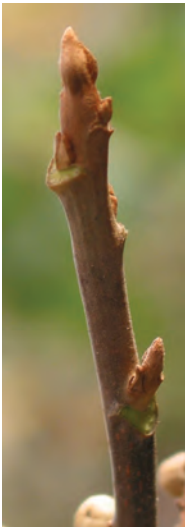
Form: A high-climbing vine up to 50' tall, or a small shrub or low ground cover. Shrub form reaching heights of 1-3'.



Leaves: Alternate, compound, with 3 ovate, entire or notched leaflets. New leaves are usually shiny and reddish-green, turning green later in the season.

Flowers: Tiny, creamy-white to yellowish flowers in elongated clusters extending from leaf axils, and often hidden under the leaves. Flowers in May - June.

Fruit: Small, round, greenish-white fruits in loose clusters. Ripe in late summer and persist into the winter.



Twig/Bark: Young twigs are slender, gray-brown, have lenticels, and often dense aerial roots. Buds are pointy and sulfur-yellow. Older bark is difficult to see through the dense aerial roots—"hairy" vine appearance—that develop as the plant matures.



Viburnum alnifolium

hobblebush,
witch-hobble



Wetland
Indicator:
FAC



Etymology: *Viburnum* - L. for the wayfaring tree; *alnifolium* - with leaves like the Alder.

Form: A straggly, sprawling shrub, reaching heights of 3-6' (10') tall. Mostly an understory shrub in shaded areas along forest edges. Lower branches root at the tip when they come in contact with the soil.



Leaves: Opposite, simple, toothed, round, with a cordate base, 4-8" long, strongly sunken venation. Young leaves and buds are covered with a light brown pubescence.



Flowers: White to pinkish, in large round clusters, 3-5" across. Larger blossoms on the edge of the cluster are sterile and the inner more numerous small flowers are fertile. Flowers in May.

Fruit: Clusters of oval, red drupes, 0.33", turn dark blue to black in August - September.



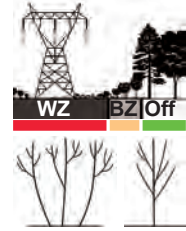
Twig/Bark: Stout greenish-brown branches covered with a light brown velvety pubescence. Winter buds lack bud scales. Older stems are brown and become slightly ridged with lenticels.



Zanthoxylum americanum

prickly ash tooth-ache tree

Wetland
Indicator:
FACU*



Etymology: *Zanthoxylum* - Gr. xantho (yellow) and xylon (wood); *americanum* - of America. Tooth-ache tree refers to the bark, which contains salicylic acid (the active ingredient in aspirin).

Form: Shrub or small tree that forms dense impenetrable thickets, reaching heights of 4-10' (35') tall.

Leaves: Alternate, pinnately compound, 5-11 elliptic to ovate leaflets, entire or finely toothed, 2.5" long, pubescent on underside, prickly rachis, citrus aroma when crushed.

Flowers: Small yellow to greenish flowers in axillary clusters. Flowers early in the spring before leaf emergence.

Fruit: Round, reddish-brown capsules in loose hanging clusters. Ripe in August - September.

Twig/Bark: Young twigs are stout, dark-brown, with paired broad-based thorns, red buds, and fragrant when bruised. Older bark is reddish-purple turning gray-brown with age, slightly ridged, with bright yellow wood.



GLOSSARY

- Arcuate** - Curved or arching; as in the venation on dogwoods.
- Aril** - A fleshy covering around some seeds, as on yews.
- Awl-like** - Shaped like an awl, a slender cylindrical tool that tapers to a sharp point.
- Axil** - The position between two organs, such as a leaf and the stem.
- Berry** - A fleshy, many seeded fruit.
- Biennial** - A plant that lives only two years, flowering and fruiting the second year.
- Bract** - A specialized or modified leaf that is associated with a flower or inflorescence.
- Bristle** - A stiff, prickly hair on the surface of leaves or stems.
- Bud** - An undeveloped stem, leaf, or flower.
- Capsule** - A dry fruit that splits open when mature to release its seeds, usually contains two or more seeds.
- Catkin** - A dense, elongated cluster of inconspicuous flowers, as on alders.
- Ciliate** - Having small hairs, as on some leaf margins.
- Compound leaf** - A leaf consisting of two or more leaflets (compare to simple leaf).
- Cordate** - Heart-shaped.
- Corymb** - A flat-topped inflorescence, with the outer flowers usually opening before the inner flowers.
- Deciduous** - Not evergreen, foliage falls off at the end of the growing season.
- Divided leaf** - A simple leaf in which the leaf blade is divided by lobes that extend almost to the midrib.
- Doubly toothed** - Possessing smaller teeth on each large tooth along the leaf margin.
- Drupe** - A fleshy fruit with a single seed or multiple seeds, each enclosed separately in a hard stony covering, as in the cherries.

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APPENDIX: NOMENCLATURE, TYPICAL HABITAT, AND PLANT ORIGIN

SCIENTIFIC NAME	COMMON NAME	FAMILY	TYPICAL HABITAT	ORIGIN
<i>ACER PENNSYLVANICUM</i> L.	STRIPED MAPLE, MOOSEWOOD	ACERACEAE	MOIST WOODS	N. AMERICA
<i>ACER SPICATUM</i> LAM.	MOUNTAIN MAPLE	ACERACEAE	MOIST WOODS	N. AMERICA
<i>ALNUS INCANA</i> (L.) MOENCH.	SPECKLED ALDER, HOARY ALDER	BETULACEAE	WET SOIL	N. AMERICA
<i>ALNUS SERRULATA</i> (AITON) WILLD.	SMOOTH ALDER, COM- MON ALDER	BETULACEAE	WET SOIL	N. AMERICA
<i>AMELANCHIER</i> SPP. MEDIK.	SERVICEBERRIES	ROSACEAE	DRY TO WET SOILS	N. AMERICA
<i>ARCTOSTAPHYLOS UVA-URSI</i> (L.) SPRENG.	BEARBERRY, SAND- BERRY	ERICACEAE	SANDY OR ROCKY SOILS	N. AMERICA
<i>ARONIA ARBUTIFOLIA</i> (L.) ELLIOT.	RED CHOKEBERRY	ROSACEAE	BOGS, SWAMPS	N. AMERICA
<i>ARONIA MELANOCARPA</i> (MICHX.) ELL.	BLACK CHOKEBERRY	ROSACEAE	BOGS, OR ROCKY SOILS	N. AMERICA
<i>BERBERIS THUNBERGHII</i> DC.	JAPANESE BARBERRY	BERBERIDACEAE	POOR SOILS, ROADSIDES	JAPAN
<i>BERBERIS VULGARIS</i> L.	COMMON BARBERRY, EUROPEAN BARBERRY	BERBERIDACEAE	POOR, ROCKY SOILS, ROADSIDES	EUROPE
<i>CARPINUS CAROLINIANA</i> WALT.	AMERICAN HORNBEAM, BLUE BEECH, MUSCLE- WOOD, IRONWOOD	BETULACEAE	MOIST WOODS	N. AMERICA
<i>CEANOTHUS AMERICANUS</i> L.	NEW JERSEY TEA, REDROOT	RHAMNACEAE	UPLAND WOODS AND OLD FIELDS	N. AMERICA
<i>CELASTRUS ORBICULATUS</i> THUNB.	ORIENTAL BITTERSWEET	CELASTRACEAE	ESCAPE FROM CUL- TIVATION IN OPEN WOODS, THICKETS, ROADSIDES	EAST ASIA
<i>CELASTRUS SCANDENS</i> L.	AMERICAN BITTER- SWEET	CELASTRACEAE	ROADSIDES AND THICKETS, RICH SOIL	N. AMERICA
<i>CEPHALANTHUS OCCIDENTALIS</i> L.	BUTTONBUSH	RUBIACEAE	SWAMPS AND STREAMSIDES	N. AMERICA
<i>CERCIS CANADENSIS</i> L.	REDBUD	FABACEAE	MOIST WOODS, ORNAMENTAL PLANTINGS	N. AMERICA
<i>CHAMAECYPARIS THYOIDES</i> (L.) BSP†.	ATLANTIC WHITE- CEDAR, SWAMP-CEDAR	CUPRESSACEAE	SWAMPS AND BOGS, MOSTLY ON THE COASTAL PLAIN	N. AMERICA
<i>CHAMAEDAPHNE CALYCOLATA</i> (L.) MOENCH.	LEATHERLEAF	ERICACEAE	BOGS	N. AMERICA
<i>CLETHRA ALNIFOLIA</i> L.	WHITE ALDER, SWEET PEPPERBUSH	CLETHRACEAE	SWAMPS AND MOIST WOODS, MOSTLY COASTAL	N. AMERICA
<i>COMPTONIA PEREGRINA</i> (L.) J.M. COULT.	SWEET-FERN	MYRICACEAE	DRY, SANDY SOILS	N. AMERICA
<i>CORNUS ALTERNIFOLIA</i> L. F.	ALTERNATE-LEAF DOGWOOD, PAGODA DOGWOOD	CORNACEAE	RICH SOILS	N. AMERICA
<i>CORNUS AMOMUM</i> MILL.	SILKY DOGWOOD	CORNACEAE	MOIST, WET SOILS, STREAMBANKS	N. AMERICA

† — Species is listed as rare in New York State.

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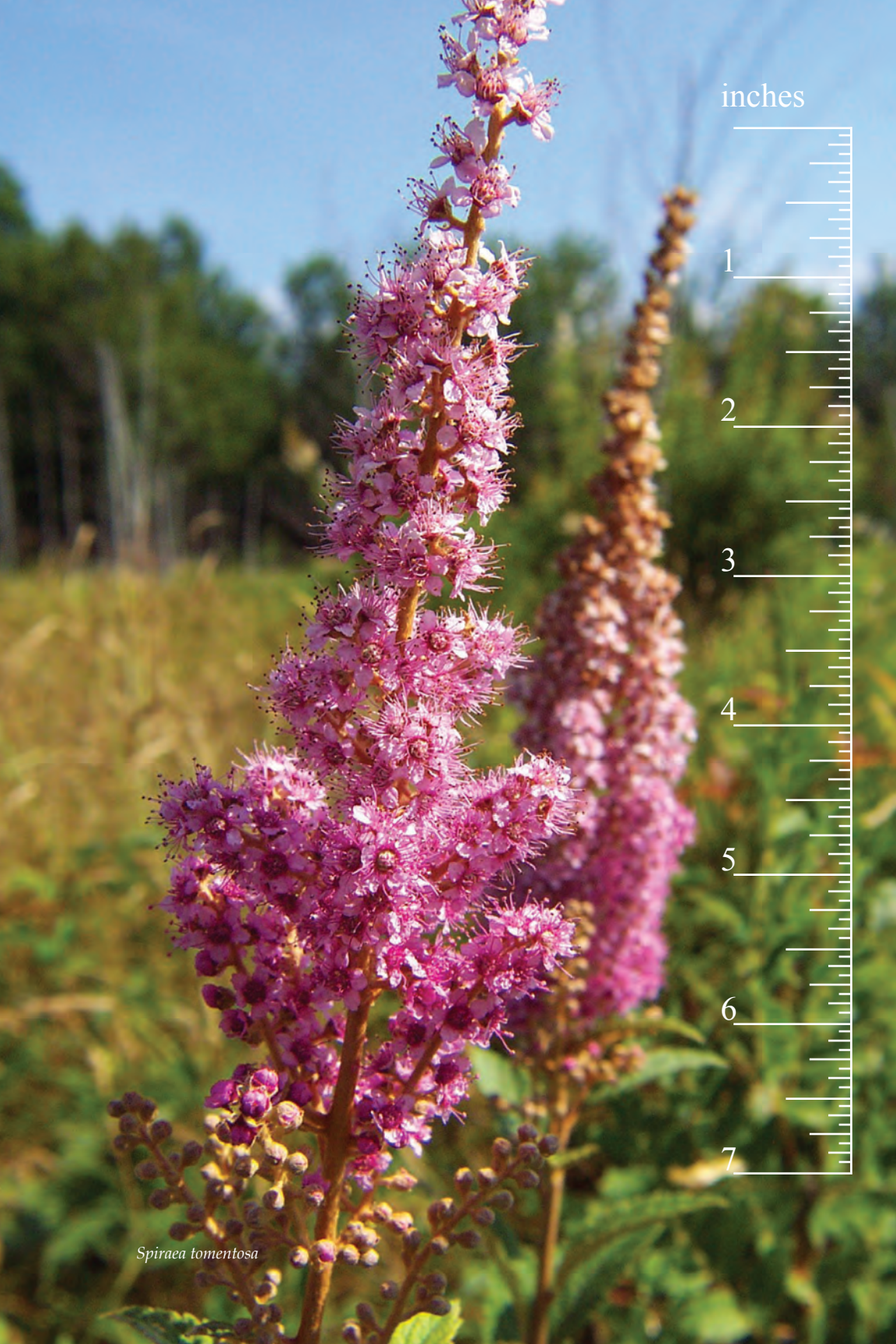
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Spiraea tomentosa

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