

Winter Shrub Identification Workshop  
Fox Forest, Hillsborough, NH  
January 17 & 18<sup>th</sup> 2006

Helpful Characteristics for Identifying Shrubs (and a few trees) in Winter

**alternate-leaf dogwood** (*Cornus alternifolia*) – Cornaceae

- Other names: pagoda dogwood  
Habit: shrub or sometimes small tree (up to 20' tall)  
Twigs: alternate, greenish to dark purple, pith white, buds 2-scaled  
Bark: younger growth often reddish, most specimens have yellow-orange dead wood  
Habitat: upland woods: UPL



**American beech** (*Fagus grandifolia*) – Fagaceae

- Habit: large tree with broad crown (50-75')  
Twigs: zigzag, slender; buds long, very sharp pointed, buds scales tan and papery  
Fruit: soft, prickly burr enclosing 2-3 triangular nuts  
Bark: smooth, blue-gray  
Habitat: dry, upland sites: FACU



**American elm** (*Ulmus americana*) - Ulmaceae

- Other names: white elm  
Habit: rarely grows larger than small sapling ( $\pm 30'$  tall)  
Twigs: alternate, brown, slightly hairy especially near terminal bud; buds brown, pseudoterminal bud at 45° angle to the stem.  
Bark: grayish-brown, diamond-shaped furrows, alternate layers of dark and lighter colored cork in cross section of bark ridges  
Habitat: mostly bottomlands: FACW-



**beaked hazel-nut** (*Corylus cornuta*) - Betulaceae

- Habit: low shrub  
Twigs: alternate, tips slightly hairy (with hand lens); buds round, 2 pairs of bud scales – pair covering lower 1/3 of bud are dark, pair covering upper portion of bud are light-colored and often fuzzy (2-toned buds).  
Habitat: forest edges and thickets: FACU-  
Similar species:

American hazel-nut (*C. americana*): twig tips have erect, gland-tipped hairs; buds have 4 uniformly reddish scales. encountered infrequently.



**bittersweet** (*Celastrus orbiculatus*) – Celastraceae

- Habit: Vigorous twining vine or vine-like shrub  
 Twigs: brown to tan, lenticels barely noticeable, bark not peeling; buds rounded, small, brownish; pith solid, white  
 Fruits: Bright orange-red, borne on axillary cymes (clusters originating near lateral buds)  
 Habitat: open woods and thickets: UPL  
 Similar species:  
 American bittersweet (*C. scandens*): fruits borne on terminal clusters, less common

*C. orbiculatus***black ash** (*Fraxinus nigra*) - Oleaceae

- Habit: tree  
 Twigs: first pair of lateral buds usually set back from terminal bud, bud scar not deeply notched at top; buds dark.  
 Bark: grayish, irregularly scaly or corky, may be powdered by rubbing  
 Habitat: wet sites: FACW  
 Similar species: see *white ash*

**black birch** (*Betula lenta*) – Betulaceae

- Other names: sweet birch, cherry birch  
 Habit: tree (up to 75' tall)  
 Twigs: alternate, slender, reddish-brown, twig tips hairless, strong wintergreen scent; buds two-toned.  
 Bark: reddish-brown to black  
 Habitat: drier woodlands: FACU  
 Similar species:  
 yellow birch (*B. alleghaniensis*): twig tips hairy, subtle wintergreen scent

**black cherry** (*Prunus serotina*) - Rosaceae

- Habit: tree ( up to 60' tall)  
 Twigs: alternate, strong cherry odor, slender; buds not clustered at twig tips; bud scales pointed, reddish-brown and greenish yellow.  
 Bark: young stems: smooth, horizontal lenticels. Older trees: small plated scales, cracking irregularly  
 Habitat: woods and thickets: FACU

**black raspberry** (*Rubus occidentalis*) – Rosaceae

- Habit: arching shrub  
 Canes: reddish-brown, round; thorns small and recurved, glaucous (whitish powder)  
 Habitat: early successional, upland sites: UPL  
 Similar species:  
 red raspberry (*R. idaeus*): thorns are bristly



**blackberry** (*Rubus allegheniensis*) - Rosaceae

- Habit: upright or arching shrub  
 Canes: stout, lower portion angled(not round in cross section);  
thorns large and recurved,  
 Habitat: early successional, upland sites: FACU

**choke cherry** (*Prunus virginiana* var. *virginiana*) – Rosaceae

- Habit: shrub or small tree  
 Twigs: alternate, cherry scent, upper stems stout; buds large and pointed, may be crowded toward twig tip – but not clustered around terminal bud, bud scales rounded.  
 Bark: gray-brown and smooth  
 Habitat: young woods and thickets: FACU  
 Similar species:  
 black cherry (*P. serotina*): buds smaller and have pointed scales

**common spicebush** (*Lindera benzoin*) – Lauraceae

- Habit: erect shrub  
 Twigs: alternate, spicy-scented; buds round, usually clustered; leaf buds 2- to 3-scaled. End buds pseudoterminal.  
 Habitat: wooded bottomlands: FACW-

**eastern hemlock** (*Tsuga canadensis*) – Pinaceae

- Habit: tree, (up to 80')  
 Leaves: flat needles and sprays, slender stalks; whitened beneath, 2 lines  
 Twigs: rough when leaves removed  
 Cones: small (5/8 to 1"), rounded, pendant, few scales  
 Bark: dark and rough, ridged and scaly; bright purple inner bark  
 Habitat: cool, moist sites

**eastern white pine** (*Pinus strobus*) - Pinaceae

- Habit: tree (up to 90'+)  
 Leaves: needles in bundles of 5, soft, flexible, bluish-green, 2-4" long  
 Cones: long –not round, 3" to 10" long, thornless  
 Bark: not scaly as in other pines; young trees – smooth, green; older trees – dark with deep furrows  
 Habitat: uplands: FACU



**grape** (*Vitis* spp.) - Vitaceae

- Habit: climbing or trailing vine  
 Twigs: brown to green, hairy or not hairy, shreddy brown bark that shreds parallel to the stem; pith brown, discontinuous  
 Habitat: wetland edges, field edges and hedgerows, abandoned fields.

Notes: Four species in NH: silverleaf grape (*V. aestivalis* var. *argentifolia*), fox grape (*V. labrusca*), New England grape (*V. novae-angliae*), river grape (*V. riparia*).

**gray birch** (*Betula populifolia*) – Betulaceae

- Habit: small tree (less than 30' tall)  
 Twigs: alternate, slender, hairless, twig tips have obvious warty, whitish dots; buds two-toned (green and brown).  
 Bark: dark brown in young trees; older trees grayish white, not peeling, triangular black patches on trunk below branches  
 Habitat: early-successional, typically well drained sites, wetland edges, abandoned gravel pits: FAC

Similar species:

paper birch (*B. papyrifera*): present year's growth somewhat hairy

**hobble-bush** (*Viburnum alnifolium*) - Caprifoliaceae

- Habit: straggling shrub, often forming dense thickets  
 Twigs: opposite, fine hairy; buds naked and hairy, yellow-orange in color  
 Habitat: cool moist woods and shores of ponds and streams: FAC

**honeysuckle** (*Lonicera* spp.) – Caprifoliaceae

- Habit: climbing vines or erect shrubs, most in NH are erect shrubs.  
 Twigs: opposite, grayish-whitish, often shiny, papery; have scales at the bases of twigs; opposing leaf scars are connected by lines. Erect shrubs with hollow pith are of Eurasian origin. Erect shrubs with solid pith are native in origin.

**tartarian honeysuckle** (*L. tatarica*)

- Habit: erect shrub  
 Twigs: hollow pith; buds small and blunt  
 Habitat: forest edges and thickets: FACU

Similar species: 3 additional shrub honeysuckles have hollow pith:

European fly-honeysuckle (*L. xylosteum*): buds long and sharp

morrow honeysuckle (*L. morrowi*): buds short and conical

pretty honeysuckle (*L. × bella*): hybrid having characteristics between tartarian and morrow honeysuckles



*L. tatarica*

**Canada honeysuckle** (*L. canadensis*)

- Other names: fly-honeysuckle  
 Habit: erect shrub  
 Twigs: solid white pith; long greenish-purplish buds; twigs two-lined; lower bud scales shorter than buds  
 Habitat: woods: FACU



*L. canadensis*

**hop-hornbeam** (*Ostrya virginiana*) – Betulaceae

Other names: ironwood

Habit: small tree (typically less than 30' tall)

Twigs: alternate, buds two-toned (green-brown), round in cross-section, buds egg-shaped, vertical striations on scales (like the lines on your thumbnail).

Bark: brownish, grooved, shreddy

Habitat: fertile woods: FACU-

Similar species:

musclewood (*Carpinus caroliniana*): buds rusty brown, buds rectangular in cross-section, no vertical striations on scales; bark of older trees gray and muscular in appearance.

American elm (*Ulmus americana*): 45° terminal bud, twig tips often slightly hairy.



*O. virginiana*

**Japanese barberry** (*Berberis thunbergii*) – Berberidaceae

Habit: low, upright shrub

Twigs: alternate, brown, grooved; inner bark yellow; spines primarily single; buds small and brown

Fruit: bright red oval berries, borne singly or on small racemes, persistent

Habitat: typical in old-field sites, uplands and moist woodlands, wetland edges: FACU

Similar species:

European barberry (*B. vulgaris*): taller than *B. thunbergii* (up to 10' tall), spines usually in sets of three, fruits usually borne clustered on drooping racemes.



*B. thunbergii*

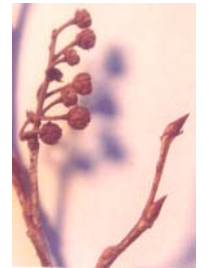
**maleberry** (*Lyonia ligustrina*) - Ericaceae

Habit: shrub

Twigs: alternate, twig tips often hairy; buds bright red, pointed, 2 bud scales

Fruit: 5-parted brown "nutlets", persistent

Habitat: swampy thickets and sandy soils: FACW

**mapleleaf viburnum** (*Viburnum acerifolium*) - Caprifoliaceae

Other names: dockmackie, flowering maple

Habit: shrub

Twigs: opposite, slender, velvety; buds long-pointed, greenish and purplish

Fruit: round bluish black drupes, borne on flat top clusters, occasionally present into early winter.

Habitat: forest understory: UPL



**mountain-holly** (*Nemopanthus mucronatus*) - Aquifoliaceae

- Habit: shrub  
 Twigs: alternate, twig tips purplish, lower portion of branches gray; buds pointed, somewhat pyramidal shaped and purplish, 2-3 scales  
 Habitat: damp thickets and swamps: OBL

**mountain maple** (*Acer spicatum*) – Aceraceae

- Habit: small tree  
 Twigs: opposite, greenish/reddish, twig tips velvety-hairy; buds stalked and have 2 scales.  
 Bark: lower portion of stem brownish, fading in to reddish, not white-striped.  
 Habitat: woodlands: FACU-

**multiflora rose** (*Rosa multiflora*) - Rosaceae

- Habit: large arcing shrub, often forming impenetrable tangles  
 Stems: rounded, reddish-green; thorns stout, recurved, often paired.  
 Fruit: ¼" globular, red hip, hips clustered, persistent  
 Habitat: prefers dry sites: FACU  
 Similar species:  
 Many varieties of Rosa spp. occur in NH. NH Natural Heritage Inventory lists 12 Rosa species as occurring in NH.

*R. multiflora***nannyberry** (*Viburnum lentago*) - Caprifoliaceae

- Other names: sheeberry  
 Habit: shrub or small tree (up to 25' tall)  
 Twigs: opposite; buds reddish brown; flower buds swollen at base, completely covered by two leaf scales  
 Habitat: wetlands, moist woodlands: FAC  
 Similar species:  
 northern wild-raisin (*V. cassinoides*): buds yellowish brown, 2 scales on flower bud do not meet in center, but rather, expose center of bud

*V. lentago***northern arrow-wood** (*Viburnum dentatum* var. *lucidum*) - Caprifoliaceae

- Habit: tall shrub, very branchy, often with long, straight arrow-like stems among older branches.  
 Twigs: opposite; older branches grayish, present years growth light-brown and 4-angled; buds reddish-brown, pointed  
 Habitat: wet sites: FACW-

*V. recognitum*

**northern wild-raisin** (*Viburnum nudum* var. *cassinoides*) - Caprifoliaceae

Other names: witherod

Habit: erect shrub (up to 15' tall)

Twigs: opposite, brownish-gray; flower buds only partly covered by the two scales – center of bud is exposed, buds yellowish-brownish and bumpy.

Habitat: wet areas: FACW

Similar species:

nannyberry (*V. lentago*): scales of flower bud meet in center, buds brownish



*V. nudum* var. *cassinoides*

**paper birch** (*Betula papyrifera*) – Betulaceae

Other names: white birch

Habit: tree (up to 75' tall)

Twigs: alternate; reddish-brown with slightly raised whitish spots, present year's growth somewhat hairy; buds two-toned (green and brown).

Bark: dark brown on young trees; older trees chalky or creamy white, peeling

Habitat: typically on well-drained sites: FACU

**pin cherry** (*Prunus pensylvanica*) – Rosaceae

Other names: fire cherry

Habit: shrub or small tree (up to 30' tall)

Twigs: alternate, reddish-brown, cherry odor subtle; buds small, blunt, clustered at twig tips and spur branches, reddish brown

Bark: shiny, reddish with large horizontal lenticels

Habitat: pioneer species, young woods, thickets: FACU-

**poison ivy** (*Toxicodendron radicans* var. *radicans*) - Anacardiaceae

Habit: erect shrub, trailing vine, or climbing vine

Twigs: alternate; buds tan/yellowish, naked, elongated, often stalked.

Fruit: yellow-white berry in compact panicles, occasionally persistent

Habitat: moist woods, growing on field edges, forests, wetlands: FAC

Notes: all parts of the plant can cause irritation all any time during the year.

**red-berried elder** (*Sambucus racemosa* ssp. *pubens*) – Caprifoliaceae

Habit: upright shrub

Twigs: opposite, stout with warty lenticels, pith brownish; buds large, round, green and purple, often twin terminal buds.

Habitat: moist, rich sites, roadsides and ditches: FACU

Similar species:

common elderberry (*S. canadensis*): small buds; white pith.



*S. Racemosa* ssp. *pubens*

**red maple** (*Acer rubrum*) - Aceraceae

Other names: Swamp maple, soft maple

Habit: tree (40-60')

Twigs: red, slender; buds red, blunt, single or clustered

Fruits: samaras, wings slightly divergent (1/2 to 1" long), mature in spring

Bark: on young trees, smooth, silver gray; long narrow, scaly dark plates on older trees, often with "target" pattern

Habitat: found in moist situations, but also on dry soils: FAC

**red pine** (*Pinus resinosa*) - Pinaceae

Other names: Norway pine

Habit: tree (up to 80 feet)

Leaves: needles in bundles of two; 3-8" long, slender, soft and flexible

Twigs: bud scales brown with white-fringed margins

Cones: round-conical, 1 1/2"-2 1/2", right angle to branches, scales thornless

Bark: reddish-brown, flaky, shallow fissures

Habitat: dry uplands: FACU

Similar species:

pitch pine (*P. rigida*): needles in bundles of three; needles clusters often growing along trunk, cones have scales with short, rigid thorn; bark plate-like with deep, irregular fissures.

Scotch pine (*P. sylvestris*): needles in bundles of two, bent stiff and twisted; cones with yellow-brown scales thickened at tip, point backwards along branches; bark along upper trunk bright orange-red and flaky.

**red spruce** (*Picea rubens*) – Pinaceae

Habit: tree (up to 70')

Leaves: needles dark or yellow-green(not powdery), 1/2 - 5/8", square in cross-section

Twigs: branches spread horizontally, twigs and buds hairy (w/ hand lens)

Fruit: cones ovoid-oblong, 1 1/4 and 1 5/8'; cones fall off once ripe; scales rigid, edges smooth

Habitat: well-drained sites: FACU

Similar species:

black spruce (*P. mariana*): branches drooping; needles blue-green and powdery, twigs with hairs (w/ hand lens); cones persistent for years; boggy or high elevation sites

white spruce (*P. glauca*): needles blue-green; twigs without hairs; branches mostly horizontal, moist upland sites

**serviceberry** (*Amelanchier* spp.)

Other names: juneberry, shadbush, shadblow

Habitat: usually small shrub, sometimes small tree (up to 40' tall)

Twigs: alternate, slender; buds pinkish, long, tapering; bud scales overlapping and twisted at the tip

Bark: smooth, gray or brown, often with longitudinal stripes.

Habitat: uplands to wetlands depending on species

Notes: NH Natural Heritage Inventory lists 6 species in NH. Leaves are important for identifying to species level.





**silky dogwood** (*Cornus amomum*) – Cornaceae

- Habit: upright shrub  
 Twigs: opposite, dull purple/reddish with silky hairs on new growth, older branches blotchy and less red, brown/tan pith.  
 Fruit: in flat-topped clusters  
 Habitat: usually wet sites: FACW  
 Similar species:  
     red-osier dogwood (*C. sericea*): twigs very red all the way to ground, white pith.  
     gray dogwood (*C. racemosa*): twigs light gray; pith of present year's growth white, pith of older branchlets light brown

*C. amomum***speckled alder** (*Alnus incana* ssp. *rugosa*) - Betulaceae

- Habit: shrub or small tree (up to 18' tall), usually growing in clumps  
 Twigs: alternate, olive-brown; pith greenish, triangular; buds large, reddish-brown, football shaped, stalked, coated in grayish/tawny down. Pseudoterminal bud.  
 Fruit: small, persistent drooping cones  
 Bark: smooth, dark brown or gray black; prominent, horizontal white lenticels.  
 Habitat: wetlands, wet meadows, abandoned gravel pits: FACW+  
 Similar species:  
     smooth alder (*A. serrulata*): cones do not drupe, bark is relatively unspckled

**sugar maple** (*Acer saccharum*) - Aceraceae

- Other names: (rock maple, hard maple)  
 Habit: large tree (60 to 90'), with broad crown  
 Twigs: reddish-brown, slender, smooth, glossy; buds reddish-brown, sharp pointed, slender, occur singly  
 Fruit: small, horse-shoe shaped samaras; ripen in fall.  
 Bark: extremely variable, gray to black, smooth on young trees, becoming thick, deeply furrowed, often with long, irregular, scaly plates

**sweet pepperbush** (*Clethra alnifolia*) – Clethraceae

- Other names: white alder  
 Habit: erect shrub  
 Twigs: alternate, hairy; outer bark red-brown, separating into loose strips; large end buds with loose or shedding hairy outer scales  
 Habitat: swamps and sandy soils: FAC+



**Sweet gale** (*Myrica gale*) – Myricaceae

- Habit: erect shrub  
 Twigs: alternate, brownish, covered in aromatic resin-dots (use hand lens); buds whitish and oval  
 Habitat: swamps, pond edges: OBL

**staghorn-sumac** (*Rhus typhina*) - Anacardiaceae

- Habit: shrub or small tree (up to 25' tall)  
 Twigs: alternate, round, stout, very hairy, large pith; buds woolly; leaf scars U-shaped, enclosing buds.  
 Fruit: red drupes in dense, hairy heads, persistent.  
 Bark: dark, numerous raised cross streaks  
 Habitat: upland, early successional, grows in clumps or patches in old pastures, open areas: UPL

## Similar species:

- smooth sumac (*R. glabra*): twigs are not hairy; fruits heads less dense  
 poison-sumac (*Toxicodendron vernix*): growing in wetlands, typically with red maple, high-bush blueberry; twigs not hairy; leaf scars crescent shaped, not enclosing buds; fruits white berries in loose clusters, often present in early winter.

*R. typhina***striped maple** (*Acer pensylvanicum*) – Aceraceae

- Other names: moosewood, moose maple  
 Habit: tall shrub or slender tree (up to 40' tall)  
 Twigs: opposite, green, hairless; buds bright red, smooth, stalked, two bud scales  
 Bark: green with whitish stripes  
 Habitat: cool, moist shaded sites: FACU

## Similar species:

- Mountain-maple (*A. spicatum*): twig tips and buds velvety, bark and lower portion of branches light brown, not white-striped

**white ash** (*Fraxinus Americana*) – Oleaceae

- Other names: American ash  
 Habit: tree (50-70 feet)  
 Twigs: opposite, stout; terminal bud pyramidal shaped, brownish, rather blunt and wider or as wide as it is high, first set of lateral buds touch lateral bud; lateral buds usually set in a deep U or V-shaped notch in the upper edge of leaf scars.  
 Fruit: narrow samara, pointed at both ends; borne in drooping panicles  
 Bark: gray; diamond-shaped pattern of shallow ridges and furrows  
 Habitat: occurs on fertile, moist (not wet) soils: FACU

## Similar species:

- green ash (*F. pennsylvanica*): terminal buds generally higher than they are wide; lateral buds set in shallow notch or on top of leaf scar; grows in moist or wet soils: FACW  
 black ash (*F. nigra*): see *black ash*



White ash



green ash

**willow** (*Salix* spp.) – Salicaceae

Habit: shrub or tree

Twigs: alternate, long and slender; inner bark yellow; terminal bud absent; lateral buds pressed tightly against stem, covered by single cap-like bud scale, buds covered in white hairs when bud scale is removed

Habitat: wet sites

Notes: NH Natural Heritage Inventory currently lists 26 species and hybrids of willow in NH

**winterberry holly** (*Ilex verticillata*) – Aquifoliaceae

Other names: winterberry, black alder

Habit: shrub, often growing in dense clusters

Twigs: alternate, light gray-silvery, dotted with small lenticels; buds are small and round, small black stipules on edges of leaf scars.Fruit: bright red drupe, persistent.

Habitat: wet sites: FACW+

**witch-hazel** (*Hamamelis virginiana*) - Hamamelidaceae

Habit: shrub or small, irregular tree (up to 15' tall); often with several trunks in a group

Twigs: alternate; buds stalked, naked and hairy, shaped like a colt's hoof

Bark: smooth, brownish with lighter blotches

Fruit: urn-shaped woody capsule, persistent yellow flower petals, blooms in autumn.

Habitat: woodlands: FAC-

**yellow birch** (*Betula alleghaniensis*) – Betulaceae

Habit: tree (up to 75' tall)

Twigs: alternate, slender, yellowish to brown, twig tips hairy on young trees, subtle wintergreen scent, buds two-toned (green and brown), obviously hairy on scale edges.

Bark: shiny, yellowish, often peeling slightly on young trees

Habitat: moist woodlands: FAC

Similar species:

black birch (*B. Lenta*): strong wintergreen scent, twigs hairless

**Wetland Indicator Status:**

US Fish and Wildlife Service. 1988. National list of vascular plant species that occur in wetlands. US Fish & Wildlife Service Biological Report 88 24pp.

OBL	Obligate Wetland	Occurs almost always (99%) under natural conditions in wetlands
FACW	Facultative Wetland	Usually occurs in wetlands (67%-99%), but sometimes occasionally found in non-wetlands
FAC	Facultative	Equally likely to occur in wetlands or non-wetlands (34%-66%)
FACU	Facultative Upland	Usually occurs in non-wetlands (67-99%), but occasionally found in wetlands (1%-33%)
UPL	Upland Obligate	Occurs almost always (99%) under natural conditions in non-wetlands

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