

OPPOSITE BUDS	<p>SUGAR MAPLE, <i>Acer saccharum</i></p> <p>long, sharp, conical brown twigs and buds</p> <p>Common, woods, thickets, hedgerows, fields, roadsides.</p>	<p>RED MAPLE, <i>Acer rubrum</i></p> <p>ball-shaped buds shiny red twigs</p> <p>Common, woods, thickets, swamps, shores. Silver maple, <i>Acer saccharinum</i>, is browner but not safely distinguishable.</p>	<p>WHITE ASH, <i>Fraxinus americana</i></p> <p>side bud in v-notch olive gray</p> <p>Common in upland woods. Twigs are never hairy.</p>	ALTERNATE BUDS, DISTINCTIVE SHAPES	<p>BEECH, <i>Fagus grandifolia</i></p> <p>long sharp slender</p> <p>Common, especially in primary hardwood forests, low to moderate elevations.</p>	<p>WITCH HAZEL, <i>Hamamelis virginiana</i></p> <p>furry, flattened stalked</p> <p>Common shrub or small tree of deciduous forests, swamps, and river shores at low elevations.</p>	<p>BASSWOOD, <i>Tilia americana</i></p> <p>fat red or green buds side buds oblique</p> <p>Common in moist, fertile upland and rivershore forests.</p>	<p>CHESTNUT, <i>Castanea dentata</i></p> <p>rounded triangular side buds oblique oval scars</p> <p>Formerly common in oak woods; reduced by the chestnut blight and rare or occasional from N.Y. east.</p>	<p>HAWTHORNS, <i>Crataegus spp.</i></p> <p>rounded dark-red buds long sharp spines</p> <p>Common in fields, hedgerows and young woods; species not distinguishable in winter.</p>
	<p>Chambered pith</p> <p>Large scars</p>	<p>Bud scales in two rows</p>							
ALTERNATE BUDS, WALNUT FAMILY	<p>BITTERNUT HICKORY, <i>Carya cordiformis</i></p> <p>surface minutely scaly lemon smell when rubbed</p> <p>Common in fertile hardwood forests, especially with red oak and maple, in southern parts of the NFR.</p>	<p>SHAGBARK HICKORY, <i>Carya ovata</i></p> <p>persistent outer scales inner scales velvety dark twigs</p> <p>Common in hardwood forests with red and white oaks, often on fertile sites, in southern parts of the NFR.</p>	<p>PIGNUT HICKORY, <i>Carya glabra</i></p> <p>outer scales gone buds smaller than shagbark</p> <p>Occasional in dry sandy or rocky oak forests, near the southern edge of the NFR.</p>	<p>BUTTERNUT, <i>Juglans cinerea</i></p> <p>elongate, velvety buds two buds fur monkey-face scar</p> <p>Formerly common in fertile hardwoods, now much reduced by a fungus disease.</p>	ALTERNATE BUDS, ELM GROUP	<p>AMERICAN ELM, <i>Ulmus americana</i></p> <p>white hairs white layers in bark half-round scars</p> <p>Common, river shores, floodplain swamps, fertile upland woods, successional habitats.</p>	<p>SLIPPERY ELM, <i>Ulmus rubra</i></p> <p>red hairs mixed with white bark foams when chewed</p> <p>Occasional, rich woods, river shores, rocky calcareous hills, mostly in southern half of the NFR.</p>	<p>HACKBERRY, <i>Celtis laevigata</i></p> <p>raised lenticels, bumpy twigs false end-bud buds flat against twigs shelves under buds pith chambered</p> <p>Frequent in southern parts of NFR, river banks, limy talus slopes, fertile rocky woods.</p>	<p>RED MULBERRY, <i>Morus rubra</i></p> <p>round scars bark flakes off</p> <p>Shrub or small tree, rare on fertile rocky slopes and in floodplain forests near the southern edge of the NFR.</p>
	<p>clustered buds</p> <p>lots of bundles</p>								
ALTERNATE BUDS, OAKS	<p>RED OAK, <i>Quercus rubra</i></p> <p>dark, sharp-pointed buds smooth or sparsely hairy, esp. near tip</p> <p>Common in hardwood forests on moderately fertile soils, dropping out where soils are cold, wet, or acid.</p>	<p>BLACK OAK, <i>Quercus velutina</i></p> <p>large buds gray-hairy all over buds angled</p> <p>Common on dry sandy or rocky soils at the southern edge of the NFR.</p>	<p>CHESTNUT OAK, <i>Quercus montana</i></p> <p>conical, pointed buds tan twigs</p> <p>An Appalachian species, frequent on dry rocky hills in the southern parts of the NFR from N.Y. east.</p>	<p>YELLOW OAK, <i>Quercus muehlenbergii</i></p> <p>blunt points smooth or minutely hairy</p> <p>Uncommon species of dry calcareous ledges and fertile soils; southern edge of NFR only.</p>	ALTERNATE BUDS, ASPENS	<p>WHITE OAK, <i>Quercus alba</i></p> <p>short, rounded buds twigs often purple or whitened</p> <p>Common in dry hardwood forests on both sandy and rocky soils, southern half of the NFR.</p>	<p>QUAKING ASPEN, <i>Populus tremuloides</i></p> <p>sharp, slender dark glossy buds lowest scale directly over leaf scar</p> <p>Common, esp. northward, in many settings: young woods, forest gaps, barrens, wetlands, mountain slopes.</p>	<p>BIG-TOOTHED ASPEN, <i>Populus grandidentata</i></p> <p>buds frosted with tiny white hairs</p> <p>Common, fields, fertile woods, sand plains, savannahs; less common in the boreal than quaking aspen.</p>	
	<p>triangular or oval leaf scars</p> <p>aborted tip</p>								
ALTERNATE BUDS, BIRCH	<p>GRAY BIRCH, <i>Betula populifolia</i></p> <p>buds gummy twigs bumpy raised lenticel resin gland mostly hairless</p> <p>Common, old fields, wetlands, young woods, mostly at low elevations, Appalachians and N.Y. east.</p>	<p>PAPER BIRCH, <i>Betula papyrifera</i></p> <p>resin often hairy</p> <p>Common, cold upland and mountain woods, often mixed with conifers, also krumholz, alpine areas.</p>	<p>YELLOW BIRCH, <i>Betula alleghaniensis</i></p> <p>sharp buds, wintergreen smell light tan silky hairs</p> <p>Common, upland woods, often mixed with conifers; cold swamps, boreal forest.</p>	<p>BLACK BIRCH, <i>Betula lenta</i></p> <p>no hairs glossy brown</p> <p>Common, successional valley woods in oak zone, rocky ridges; Appalachians and N.Y. east.</p>	ALTERNATE BUDS, ROSE FAMILY	<p>MUSCLEWOOD, <i>Carpinus caroliniana</i></p> <p>dark scales light edges lots of scales, no resin, no wintergreen smell not grooved on back</p> <p>Common, with hardwoods on stream banks and moist successional woods; not in boreal forest.</p>	<p>HOP HORNBEAM, <i>Ostrya virginiana</i></p> <p>tan scales scales grooved on back</p> <p>Common, fertile hardwood stands, rocky ridges with oak and pine, low and moderate elevations.</p>	<p>BLACK CHERRY, <i>Prunus serotina</i></p> <p>rounded scale edges dark strong cherry smell dark, shiny twigs</p> <p>Common in hedgerows and young woods, and with older hardwoods on moist fertile soils.</p>	<p>SHADBUSHES, <i>Amelanchier arborea, canadensis, & laevis</i></p> <p>slender buds scale edges often hairy 1st scale short narrowed slender scar</p> <p>Common in fertile or sandy woods at low elevations; species not distinguishable in winter.</p>

NORTHERN FOREST WINTER CHARTS: DECIDUOUS SHRUBS & VINES OF DRY ROCKY HILLS Species in red are widely distributed in the Northern Forest Region (NFR), and common in the proper habitats in at least part of the region.

OPPOSITE: OR SUBOPPOSITE	Viny, spiny, or scaly		Duckbill buds with two long scales		V-shaped or u-shaped scars, 2 or 3 pairs of scales		Center bud often missing					
	<p>PURPLE CLEMATIS <i>Clematis occidentalis</i></p> <p>flower bud persistent leafstalk leaf bud</p> <p>Occasional in rocky, fertile woods, with a somewhat scattered distribution: E and W parts of NFR.</p>	<p>COMMON BUCKTHORN* <i>Rhamnus cathartica</i></p> <p>thorn buds not really paired</p> <p>Common alien species, abundant in alluvial and post-agricultural ground.</p>	<p>BUFFALO BERRY <i>Shepherdia canadensis</i></p> <p>flattened buds covered with white frilly scales with brown centers</p> <p>A common shrub of western prairies, rare eastward on shores and in rocky glades.</p>	<p>STRIPED MAPLE <i>Acer pennsylvanicum</i></p> <p>smooth, shiny red or green</p> <p>A common, tall, few-branched shrub of woods and gaps, on both dry and wet soils.</p>	<p>GRAY DOGWOOD <i>Cornus foemina</i></p> <p>dark buds tan twigs tan pith</p> <p>Common in old fields, frequent in second-growth woods and thickets and in rocky glades.</p>	<p>ROUND-LEAVED DOGWOOD <i>Cornus rugosa</i></p> <p>pink or green dark blotches</p> <p>Frequent in rocky, fertile soil, on ledges and in thickets, throughout the NFR.</p>	<p>MAPLE-LEAVED VIBURNUM <i>Viburnum acerifolium</i></p> <p>side buds curve in twigs hairy</p> <p>Common, understory shrub of deciduous woods, often with oaks, much of the NFR.</p>	<p>RAFINESQUE'S VIBURNUM <i>Viburnum rafinesquianum</i></p> <p>buds angled out twigs smooth scale edges hairy</p> <p>Common colonial shrub of dry woods in the W NFR, uncommon in the E on fertile rocky hills.</p>	<p>BLADDERNUT <i>Staphylea trifolia</i></p> <p>shiny, brown, round stipule scar rounded leaf scar</p> <p>Tall colonial shrub, occasional in fertile rocky woods and on river shores in the S NFR.</p>			
OPPOSITE: HONEYSUCKLE FAMILY	Three bundle scars often obscured by shriveled leaf bases		SNOWBERRY, <i>Symphoricarpos albus</i>		BUSH HONEYSUCKLE <i>Diervilla lonicera</i>		LEATHERWOOD <i>Dirca palustris</i>		FRAGRANT SUMAC <i>Rhus aromatica</i>		NEW JERSEY TEA <i>Ceanothus americanus</i>	
	<p>LIMBER HONEYSUCKLE <i>Lonicera dioica</i></p> <p>stiff needle points no hairs twigs hollow</p> <p>Uncommon viny shrub of fertile rocky woods and swamps, most of NFR except far E.</p>	<p>HAIRY HONEYSUCKLE <i>Lonicera hirsuta</i></p> <p>stiff needle points scattered long hairs twigs hollow</p> <p>Uncommon in rocky or sandy woods and glades, most of NFR from W to westward.</p>	<p>MORROW'S HONEYSUCKLE* <i>Lonicera morrowii</i></p> <p>extra buds stubby buds, papery scales twigs hollow</p> <p>Abundant and aggressive alien of thickets and post-agricultural woods; most of NFR.</p>	<p>CANADA HONEYSUCKLE <i>Lonicera canadensis</i></p> <p>blunt, mottled, fleshy scales dark twigs buds angled out</p> <p>Our commonest native honeysuckle, in moist or dry, hardwood or conifer woods, throughout the NFR.</p>	<p>SNOWBERRY, <i>Symphoricarpos albus</i></p> <p>pointed scales long shelves twigs hollow</p> <p>Low delicate shrub, common in western glades and prairies, rare on dry fertile ledges E to Vt.</p>	<p>BUSH HONEYSUCKLE <i>Diervilla lonicera</i></p> <p>buds pressed against twig ridge descending from scar</p> <p>Arching shrub, common on ledges and in open, dry, rocky woods throughout the NFR.</p>	<p>LEATHERWOOD <i>Dirca palustris</i></p> <p>knobby twigs scar circles bud</p> <p>Occasional or locally frequent in fertile, often rocky woods and on floodplains most of NFR.</p>	<p>FRAGRANT SUMAC <i>Rhus aromatica</i></p> <p>bud behind scar furry twigs male catkin round scar varnish smell</p> <p>Common on the western prairies, occasional on dry rocky fertile hills in the NFR.</p>	<p>NEW JERSEY TEA <i>Ceanothus americanus</i></p> <p>hairy tip narrow, dark scales minute stalk</p> <p>Frequent on sandy plains and dry rocky hills in the southern half of the NFR.</p>			
ALTERNATE: THORNS, SPINES OR BRISTLES	Ridged twigs		Petiole bases persist		Slender leaf scars		Petiole bases persist		ALTERNATE: ODBALL			
	<p>JAPANESE BARBERRY* <i>Berberis thunbergii</i></p> <p>shiny brown single spines pointed scales petiole bases</p> <p>Low, bushy and very aggressive alien, common in woods in the southern NFR.</p>	<p>COMMON BARBERRY* <i>Berberis vulgaris</i></p> <p>gray-tan scales petiole bases 3-branched spine</p> <p>Tall, arching, aggressive alien, common in dry fertile woods and glades in the eastern NFR.</p>	<p>GOOSEBERRIES <i>Ribes cynosbati, etc.</i></p> <p>short shoot loose, papery, translucent scales scales</p> <p>Common low arching shrub of rocky fertile woods, most of NFR.</p>	<p>PRICKLY ASH <i>Zanthoxylon americanum</i></p> <p>furry, red, domed broad spines bark numbs the mouth</p> <p>Tall, thicket-former of fertile woods and glades, common in the southern and western NFR.</p>	<p>MULTIFLORA ROSE,* <i>Rosa rugosa</i></p> <p>long, arching canes lines of dots red or green</p> <p>Tall, sprawling, alien, forming thickets in fields and woods, mostly S NFR.</p>	<p>CAROLINA ROSE <i>Rosa caroliniana</i></p> <p>slender, straight, thorns fruits with glands sepal fall</p> <p>Low colonial shrub of rocky or sandy woods, most of the NFR except the NW.</p>	<p>BRISTLY ROSE <i>Rosa acicularis</i></p> <p>many slender, prickles tight scales flowering branch</p> <p>Low, bristly colonial shrub, common on western prairies, rare on rocky hills in the E NFR.</p>	<p>RED RASPBERRY <i>Rubus idaeus</i></p> <p>slender bristles whitened stipule petiole base</p> <p>Common arching shrub of glades and open ground, throughout the NFR.</p>	<p>BLACK RASPBERRY <i>Rubus occidentalis</i></p> <p>short, thick prickles whitened petiole base</p> <p>Locally common in woods and openings on fertile soils, most of NFR.</p>	<p>ALLEGHENY BLACKBERRY <i>Rubus allegheniensis</i></p> <p>large prickles loose scales angled twigs red or green</p> <p>The commonest tall blackberry of fields, glades, and disturbed forests in the NFR.</p>		
ALTERNATE: VINES	RIDGED TWIGS		ALTERNATE: SHRUBS		SHADBUSHERS		LOWBUSH BLUEBERRIES		BLACK HUCKLEBERRY			
	<p>GRAPES <i>Vitis aestivalis</i> & <i>riparia</i></p> <p>ridged twigs tendril missing tendril stubby bud</p> <p>High-climbing vines of forest and thickets, one or both common throughout the NFR.</p>	<p>WOODBINE <i>Parthenocissus inserta</i> & <i>quinquefolia</i></p> <p>quin. inserta small, conic bud large, raised, round scar</p> <p>Scrambling or high-climbing vines, one or both common throughout the NFR.</p>	<p>POISON IVY <i>Toxicodendron radicans</i> & <i>rydbergii</i></p> <p>red, furry buds big scars knobby twigs</p> <p>Running, climbing, or shrubby vines, one species or the other frequent throughout the NFR.</p>	<p>DWARF CHESTNUT OAK <i>Quercus prinoides</i></p> <p>light edged scales short, rounded gray-tan</p> <p>Low, colonial shrub of sandplains and fertile rocky hills in the S parts of the NFR.</p>	<p>SMOOTH ROSE <i>Rosa blanda</i></p> <p>no thorns on flowering twigs slender crescentic scars sepals persist</p> <p>Low shrub, frequent on dry rocky hills, shores, dunes, and in glades; much of the NFR, esp. in the west.</p>	<p>CHOKE CHERRY <i>Prunus virginiana</i></p> <p>sharp scale edges light gray, dull twigs</p> <p>Tall shrub of open habitats and thickets, common throughout the NFR and far beyond.</p>	<p>SHADBUSHERS <i>Amelanchier spicata</i> etc.</p> <p>slender, curved buds scale edges often hairy often red or pink slender scar</p> <p>Low or tall, often colonial shrubs of dry sandy and rocky habitats, throughout the NFR.</p>	<p>LOWBUSH BLUEBERRIES <i>Vaccinium angustifolium</i> & <i>pallidum</i></p> <p>red or green, with tiny bumps outer scales with needle tips</p> <p>Low slender shrubs, one or both common in open woods and glades throughout the NFR.</p>	<p>BLACK HUCKLEBERRY <i>Gaylussacia baccata</i></p> <p>rounded tip yellow resin dots inside reddish fine hairs</p> <p>Colonial shrub, common dry sandy or rocky woods and glades throughout the NFR.</p>			



DISTINCTIVE BUD SHAPES

OPPOSITE BUDS

Sugar maple
Acer saccharum

Red maple
Acer rubrum

White ash
Fraxinus americana

ALTERNATE BUDS

Beech
Fagus grandifolia

Witch hazel
Hamamelis virginiana

Basswood
Tilia americana

Chestnut
Castanea dentata

Hwthorn
Crataegus spp.

LARGE SHIELD-SHAPED SCARS, BIG END BUDS

Bitternut hickory
Carya cordiformis

Shagbark hickory
Carya ovata

Pignut hickory
Carya glabra

Butternut
Juglans cinerea

CLUSTERED BUDS AT TIP: OAKS

ALTERNATE BUDS

Red oak
Quercus rubra

Black oak
Quercus velutina

Chestnut oak
Quercus montana

Yellow oak
Quercus muehlenbergia

White oak
Quercus alba

SCALES IN TWO ROWS

American elm
Ulmus americana

Slippery elm
Ulmus rubra

Hackberry
Celtis laevigata

Red mulberry
Morus rubra

OVAL, WITH BROAD BASE

Quaking aspen
Populus tremuloides

Big-toothed aspen
Populus grandidentata

GUMMY BUDS OR TWIGS

ALTERNATE BUDS

Gray birch
Betula populifolia

Paper birch
Betula papyrifera

Shadbushes,
Amelanchier spp.

SHARP BUDS, ZIG-ZAG TWIGS

Yellow birch
Betula alleghaniensis

Black birch
Betula lenta

Black cherry
Prunus serotina

CHERRY SMELL

Hop hornbeam
Ostrya virginiana

Musclewood
Carpinus caroliniana

Deciduous trees and, verso, shrubs and vines, of open dry rocky woods and glades in the Northern Forest region. A few species that barely enter the NFR were omitted deliberately and a few others because I ran out of room. Most are winter identifiable, the shadbushes, hawthorns, lowbush blueberries, and grapes being obvious exceptions. But not always identifiable by buds alone. Look at the whole plant, use bark and branch pattern as well as buds, and dig in the snow for old leaves if you have too. And be patient and don't think too much. Nature's language is visual, and she yields her secrets on her own terms.



Jerry Jenkins, 2014
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OPPOSITE BUDS	VINY	SPINY	DUCKBILL BUDS		BUDS FLAT AGAINST TWIG	DARK, MOTTLED BUDS	HOLLOW TWIGS						
	Purple clematis <i>Clematis occidentalis</i>	Common buckthorn* <i>Rhamnus cathartica</i>	Striped maple <i>Acer pensylvanicum</i>	Gray dogwood <i>Cornus foemina</i>	Round-leaved dogwood <i>Cornus rugosa</i>	Bush honeysuckle <i>Diervilla lonicera</i>	Canada honeysuckle <i>Lonicera canadensis</i>	Hairy honeysuckle <i>Lonicera hirsuta</i>	Limber honeysuckle <i>Lonicera dioica</i>	Morrow's honeysuckle <i>Lonicera morrowii</i>	Snowberry <i>Symphoricarpos albus</i>		
	OPPOSITE BUDS	TWO OR THREE PAIRS OF SCALES		STALKED & FLATTENED	RIDGED TWIGS	LONG BUDS	LOW FURRY BUDS	SHRIVELED LEAF BASES PERSIST: BRAMBLES		SLENDER CRESCENT-SHAPED LEAF SCARS: ROSES			
		Maple-leaved viburnum <i>Viburnum acerifolium</i>	Rafinesque's viburnum <i>Viburnum rafinesquianum</i>	Bladdernut <i>Staphylea trifolia</i>	Buffalo berry <i>Shepherdia canadensis</i>	Common barberry* <i>Berberis vulgaris</i>	Japanese barberry* <i>Berberis thunbergii</i>	Gooseberries <i>Ribes spp.</i>	Prickly ash <i>Zanthoxylon americanum</i>	Red raspberry <i>Rubus idaeus</i>	Black raspberry <i>Rubus occidentalis</i>	Allegheny blackberry <i>Rubus allegheniensis</i>	
		ALTERNATE BUDS, MORE ROSES	SLENDER CRESCENT-SHAPED LEAF SCARS		SHREDDY BARK	BIG ROUND LEAF SCARS	RED FURRY BUDS	SCARS CIRCLE BUDS	MALE CATKINS	CLUSTERED BUDS	TINY FURRY BUDS	BIG POINTED BUDS	SMALL POINTED BUDS
			Multiflora rose* <i>Rosa caroliniana</i>	Smooth rose <i>Rosa blanda</i>	Grapes <i>Vitis aestivalis & riparia</i>	Woodbine <i>Parthenocissus inserta & quinquefolia</i>	Poison ivy <i>Toxicodendron radicans & rydberguu</i>	Leatherwood <i>Dirca palustris</i>	Fragrant sumac <i>Rhus aromatica</i>	Scrub oak <i>Quercus ilicifolia</i>	New Jersey tea <i>Ceanothus americanus</i>	Choke cherry <i>Prunus virginiana</i>	Shadbushes <i>Amelanchier spp.</i>