

## Index (Inside Cover): Trees & Shrubs of the Maritimes by Todd Boland

**alder:** speckled 118; smooth alder 119; American green alder 120; smooth arrowwood 55 (deep veined);  
**ash:** white ash 173 (leaflets stemmed, samara wings attached to seed); European 174; black ash 175 (leaflets no stalks, wings full length of seed and twisted); red ash 176 (leaflets no stalks, samara wings long mid seed attachment)  
**aspen:** See poplar; balsam fir 21; barberry: common barberry 130; Japanese barberry 144;  
**basswood, linden** 141 (asymmetrical leaf, flowers with papery bract.);  
**bayberry** 104; beaked hazelnut 127 (rugose); bearberry 147;  
**beech:** American beech 89 (long pointed buds, coarsely-toothed, twigs zigzag, bark sometimes has cankers);  
**birch** yellow 121 (gradually tapered, bark: reddish to yellowish > shredded); heart-leaved 122 (cordate, bark: > thin strips);  
paper 123 (ovate to oblong tapering point, bark: > large sheets); weeping 124 (triangular coarsely toothed, bark smooth white > diamond > rough dark areas); grey 125 (triangular, bark: reddish brown > chalky white, not peeled);  
bog 126 (round toothed edges);  
**blackberry** 184; lowbush blueberry 102; buckthorn (all invasive): European 53 (5-8, opp. or sub opp., finely toothed);  
alder-leaved 140 (alt., finely toothed); glossy 145 (5-10, red > black, alt., shiny undulating leaves, smooth); broom,  
Scotch 182; cedar 39; butternut 186;  
**cherry:** pin cherry (flat clusters) 79; sand cherry (loose clusters) 80; sweet or sour cherry (clusters) 96; black cherry 97 (arching chains); choke cherry 136 (spikes);  
**chokeberry:** black 93 (elliptical to spoon-shaped); purple 94 (dark green);  
**clematis:** purple 170; Virginia (virgins' bower) 171; crowberry: broom 35; pink 36; black 37;  
**currant:** wild black 159 (3-5 lobed with resin dots); skunk 160 (shallow 5 lobes); swamp gooseberry 161 (3-7 lobes);  
bristly black 162 (3-5 deep lobes buttercup-like); swamp red currant 163 (shallow 3-5 lobes);  
**diapensia** (lapland) 43; dogwood: bunchberry 57; round-leaved 58; red-osier 59;  
**elderberry:** common 177 (5-11 leaflets, bloom July -Aug.); red 178 (5 leaflets, bloom May - June);  
**elm** (double toothed): white elm 128 (round samaras hairy edged); English elm 129 (round samaras not hairy);  
**hawthorn:** 132 (6 or 8 lobes with large teeth); English hawthorn 134 (3-7 deep lobes); heather: woolly 40 (yellow);  
Scottish 41; pine barren golden 34;  
**hemlock** 32; hobblebush 56 (heavily veined bark: green-brown lenticels > warty and furrowed);  
**honeysuckle:** Northern bush 44; fly honeysuckle 49 (paired pale yellow bell-shaped); European (pink to yellow elongate tubes) 50; Tartarian (pink paired) 51; mountain fly 52 (yellow pair slightly bell-shaped);  
**hop-hornbeam, / ironwood** 88 (bark shredded); huckleberry: black 108; dwarf 109; ironwood 88; juniper (ground, dwarf, low) 33; Labrador tea: 111; larch (tamarack, hackmatack) 23;  
**laurel:** pale bog 42; sheep 168 (flowers below new leaves) lilac 60; linden 141; locust: black locust 202; clammy locust 203  
**maple:** striped 63 (tri-lobed and large, samaras wide); mountain 64 (wrinkled, samaras narrow); Norway 67 (a few sharply pointed teeth, samaras wide); sycamore 68 (dark green, rough texture); red 69 (irregularly toothed); silver 70 (deeply cut sinuses, samaras narrow); sugar 71 (U-shaped sinuses, samaras parallel); Manitoba 172 (pinnately compound, samaras v-shaped); vine maple (not in book);  
**mayflower** 148; meadow sweet 137 (white or pale pink spikes) [See steeplebush];  
**mountain ash:** American 195; European 196; showy 197;  
**mountain holly** 105 (twigs: purplish brown > grey); [bittersweet] nightshade 156; [eastern] ninebark 157; northern wild raisin 45 (dark green);  
**oak:** northern red 153 (pointy leaves > red or brown); burr oak 154 (rounded lobes > yellow-brown); English oak 155 (round lobed 10 - 15 cm > little change); oriental bittersweet 139;  
**pine:** jack 28 (paired TWISTED olive green needles SHORT 2-5 cm, cones curl); red 29 (dark green paired needles LONG 8 -15 cm); eastern white 30 (bluish green 5-bundled needles 5-12 cm); Scotch 31 (bluish green paired needles SHORT 3-7 cm, cones taper, rounded at base);  
**pipsissewa** 167;  
**poplar:** large toothed aspen 115 (bark: pale green smooth > grey-brown furrowed); trembling aspen 116 (bark: pale green > silver grey to white); balsam poplar 114 (balsamic odor, bark: reddish brown ridges > deep furrows); jack's hybrid poplar 114; white poplar 158 (bark: greenish white smooth > furrowed and cracked)  
**rhodora** 110; rose 188-194 serviceberry: 91, 92, Bartram's serviceberry 90  
**spruce:** Norway 24; white 25 (pale gr. needles often arch upward); black 26 (often more densely pack); red 27 (needle short soft);  
**squashberry** 65 (3 lobed, rugose); steeplebush 138 (rugose, spikes deep pink or white) See meadowsweet  
**sweet fern** 78; sweet gale: 87; tamarack / larch: European larch 22; tamarack, larch, hackmatack 23; twinflower 54;  
**vaccinium:** small cranberry 150; alpine bilberry 151; mountain cranberry 152  
**viburnum:** northern wild raisin 45 (dark green); smooth arrowwood 55 (deep veined); hobblebush 56 (heavily veined bark: green-brown lenticels > warty and furrowed); squashberry 65 (3 lobed, rugose); highbush cranberry 66 (tri-lobed); Virginia creeper 183 (large palmately compound); wild raisin 45 (dark green);  
**willow** LANCE: basket willow 82 (very thin, silvery > dark green); meadow willow 76 (narrow, leaves overlap, undersides waxy, purple tinted stems); purple willow 77 (narrow, prominent light vein, reddish-purple stems); black willow 74 (with rounded stipules, softly hairy); THICK LANCE-SHAPED: cottony willow 72 (broad, large rounded stipules, often waxy); laurel willow 75 (lance-shaped glossy dark green - introduced); shining willow 73 (lance to elliptical, elongate tail-like tip); pussy willow 86 (lance to elliptical, silvery catkins); sage willow 81 (lance to oblong, silver grey leaves, undersides felted); ELLIPTICAL: Bebb's willow 85 (elliptical to oblong, wrinkled, distinctly net-veined); OVAL balsam willow 117 (elliptical to oval, tips end abruptly);  
**witch-hazel** 131; yew (ground hemlock) 20;

**Keys: LEAF or NEEDLES**

**NEEDLES:** ROUND pine: jack 28 (short 2-5 cm, **twisted**, yellow-green, paired); Scotch 31 (short 3-7 cm, **bluish green**, paired); red 29 (**long** 8 -15 cm, dark green, paired); eastern white 30 (5-12 cm, bluish green, **5-bundled**); pine barren golden heather 34 (tiny, ground);

FOUR SIDED: white spruce 25 (pale gr., blue-tinted, often arch upward); black spruce 26 (dark green, blue tint, often more densely pack); red spruce 27 (dark green or yellow green, short soft, often arch upward); Norway spruce 24 (shiny dark green);

FLAT: eastern hemlock 32 (short 0.8 – 1.3 cm, shiny gr. above, two white lines below); yew / ground hemlock 20 (1-2 cm, dark green); balsam fir 21 (1-3.8 cm, blunt tip); REVOLUTE (turned under): pink crowberry 36 (0.25 -0.4 cm, green); broom crowberry 35 (0.3-0.6 cm, dark green, upward angled); black crowberry 37 (0.3-0.7 cm, dark green);

SCALE-LIKE: creeping juniper 38; eastern white cedar 39; wooly heather 40 (hair covered); Scottish heather 41;

**LEAF EDGE MOTION:** SPOON SHAPED: Lapland diapensia 43; sweet gale 87; inkberry 98; black chokeberry 93; coastal sweet pepperbush 100; Japanese barberry 144 (1.5-3.5); pipsissewa 167;

REVOLUTE (TURNED UNDER): bog laurel 42; soapberry 47; rhodora 110; Labrador tea 111; large cranberry 112; sheep laurel 168;

UNDULATE: Bebb's willow 85; northern bayberry 104; glossy buckthorn 145 (smooth); American witch-hazel 131;

**LEAF SHAPE**

ASYMMETRICAL UNEVEN BASE: basswood / linden 141 (**heart-shaped**, 12-20); white elm 128 (**oval**, 7-15, soft underside); English elm 129 (oval 4-10); witch-hazel 131 (oval, **undulate**); beaked hazelnut 127 (ovate, **rugose**);

ROUND: winflower 54; round-leaved dogwood 58; TRIANGULAR: grey birch 125 (**with tail**); ALMOST CORDATE: white birch 123 (with irregular teeth); HEART SHAPED – CORDATE: hobble bush 56; lilac 60; balsam poplar 114; swamp cottonwood Ptd134; heart-leaved birch 122; greenbrier 143; ROUNDED STIPULES: cottony willow 72; black willow 74; NOTCHED: sweet-fern 78; TREE SILOETTES: hawthorn 132 134; MITTEN SHAPE: (lower leaflet) Manitoba Maple 172;

LANCE: bog laurel 42; basket willow (very thin, yellowish-brown stem) 82; meadow willow 76 (narrow, **leaves overlap**, waxy undersides, **purple tinted stems**); purple willow 77 (narrow, **prominent light vein**, reddish-purple stems); black willow 74 (with rounded stipules, softly hairy); THICK LANCE-SHAPED: cottony willow 72 (broad, large rounded stipules, **finely toothed, start red tint** > green, often waxy); silky willow (similar but no stipules) 72; laurel willow 75 (lance-shaped, finely toothed, **glossy dark green, prominent vein**); shining willow 73 (lance to elliptical, **elongate tail-like tip**); pussy willow 86 (lance to elliptical, silvery catkins); sage willow 81 (lance to oblong, **silver grey leaves**, undersides felted); OVAL balsam willow 117 (elliptical to oval, tips end abruptly);

3 LOBED [tri-lobed, bumps in a leaf]: striped maple 63 (smooth, big); mountain maple 64 (rugose); red maple 69; squashberry 65; highbush cranberry 66 (pointed); bittersweet nightshade 156 (like rounded arrowhead); Eastern ninebark 157;

3 or 5 LOBED [PALMATE like hand's palm]: red maple 69 (pointed sinuses, red stalks); Norway maple 67 (**rounded u shaped sinuses, 4-5 large points each lobe**); sugar maple 71 (**rounded u shaped sinuses, mostly smooth with 3 large points each lobe**); white poplar 158 (**felt like**); wild black currant 159; swamp gooseberry 161; bristly black currant 162; swamp red currant 163;

5 LOBED - PALMATE: sycamore maple 68 (dark green, leathery); silver maple 70 (deep sinuses, lobes serrated); vine maple (star like); skunk currant 160 (**lobes coarsely toothed**); swamp gooseberry 161; cloudberry 164; purple flowering raspberry 165;

SINUSES, DEEP: silver maple 70; U-SHAPE: sugar maple 71 (3 points per lobe, smooth otherwise); Norway maple 67 (4, 5 points per lobe); POINTED red maple 69 (red stalks);

5-7 LOBED hawthorn 132-134 (**like little tree shapes**);

+ LOBED – MANY FINGERS: northern red oak 153 (**pointed tips**); burr oak 154 (15-30 cm, many **rounded lobes**); English oak 155 (10-15 cm, 3-7 rounded lobe pairs, **very short stalks**);

**COMPOUND** (has leaflets)

TRIFOLIATE (3 leaflets): purple clematis 170; Virginia clematis 171; bristly dewberry 180; poison ivy 181;

PALMATELY COMPOUND (5 leaflets, like a hand): riverbank grape 166; dewberry 179; Virginia creeper 183; blackberry 184;

PINNATELY COMPOUND: (7 or more) Manitoba maple 172; white ash 173; European ash 174; black ash (leaflet - no stem) 175; red ash 176; elderberry 177; red elderberry 178; butternut 186; smooth rose (few) 188; roses 189-194; American mountain ash 195; showy mountain ash 197; false spiraea 198; staghorn sumac 199; shrubby cinquefoil 201; black locust 202; clammy locust 203;

**LEAF TIPS** BLUNT TIP: fly honeysuckle 49; black chokeberry 93 (spoon-shaped); barberry 130 (toothed); eastern leatherwood 146; locust 202; TAIL-LIKE: shining willow 73; grey birch 125; POINTED: northern bush honeysuckle 44; pin cherry 79; dwarf huckleberry 109; trembling aspen 116; paper birch 123 (oblong); Canada plum 135; chokecherry 136; POINTED LOBES: round-leaved dogwood 58; striped maple 63; highbush cranberry 66; Norway maple 67; northern red oak 153;

**TOOTHED** TOP PART: inkberry 98; NOTCHED: sweet fern 78; ROUNDED: winflower 54; FINELY: big-leaved marsh-elder 46; pin cherry 79; sand cherry 80; serviceberry 90-92; trembling asp. 116; IRREGULAR: squashberry 65; white birch 123 (with irregular teeth); COARSELY: smooth arrowwood 55; mountain maple 64; beech 89; speckled alder 118; weeping birch 124; meadow sweet 137; steeple bush 138; DOUBLED: red maple 69; Eastern hop hornbeam / ironwood 88; gray birch 125; beaked hazelnut 127; white elm 128; dewberry 179; CRABLIKE: squashberry 65; (occasionally) beaked hazelnut 127; Virginia creeper (individual leaflet) 183; white elm 128;

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**LEAF SURFACE HAIRY / FUZZY:** wooly heather 40; hobblebush 56, black willow 74, sage willow 81, velvet-leaved blueberry 113; (sometimes) cottony willow 72; white poplar 158; **STICKY:** laurel willow 75; black huckleberry 108; dwarf huckleberry 109; butternut 186; clammy locust 203; **SHINY / GLOSSY:** wild raisin 45; partridgeberry 61; laurel willow 75; black chokeberry 93; purple chokeberry 94; sweet cherry 96; black cherry 97; winterberry 99; balsam poplar 114; glossy buckthorn 145; **WRINKLED (RUGOSE):** n. bush honeysuckle 44; mountain maple 64; squashberry 65; Bebb's willow 85; winterberry 99; speckled alder 118; steplebush 138; cloudberry 164; butternut 186, wild red raspberry 187; **ROUGH:** apple 95; elm 128 **DOTS:** soapberry 47; **PLEATED:** eastern hop-hornbeam / ironwood 88 (elliptical to oval, double toothed); American beech 89 (elliptical to oval, coarse toothed); butternut 186 (elliptical, finely toothed);

**LEAF VEIN NET:** Bebb's willow 85; mayflower 148; **HEAVILY:** hobblebush 56; **PROMINENT (CONTRAST):** wild raisin 45; smooth arrowwood 55; partridgeberry 61; laurel willow 75 (yellow vein); purple willow 77 (white vein, narrow leaves); speckled alder 118, alder-leaved buckthorn 140;

**FLOWER ARRANGEMENT FLAT CLUSTERS** (5 petals mostly): **LOOSE CLUSTERS:** bittersweet nightshade ; **ROUNDED CLUSTERS:** **SPHERICAL CLUSTERS:** **SPHERICAL HEADS:** common buttonbush 48; sweet fern 78; **CONICAL:** ; **RACEMES:** pepperbush 100; **SPIKES:** ; **LONG ARCHING SPRAY:** false spiraea 198; **ELONGATED SPRAY:** bristly dewberry ; **DROOPING / HANGING CLUSTERS:** black cherry 97; bristly black currants 163;

#### **FLOWER TYPE**

**PEA-LIKE:** black locust 202; clammy locust 203; Scotch broom 182;

**PETAL 0** white ash 173; black ash 175; broom crowberry 35 (m); pink crowberry 36 (minute); **SEPALS-FUSED:** eastern leatherwood 146; **5-TUBULAR:** black currant 159;

**PETAL 3:** arrowhead Pet8; trillium 10;

**SEPAL 4:** virgin's bower 171;

**PETAL 4:** **SCRAWNY PETALS:** American witch-hazel 131; soapberry (yellowish) 47; round-leaved dogwood 58; red-osier dogwood 59; alternate leaved dogwood 106; lilac 60; partridgeberry 61; witch-hazel 131 (yellow); **CLUSTERS:** European buckthorn 53; **SWEPT BACK:** large cranberry 112; small cranberry 150 (8 fused stamens downward); **PEA SHAPE:** black locust 202, clammy locust 203; **BELL-SHAPED:** creeping snowberry 149; mountain cranberry / foxberry 152; **URN:** dwarf bilberry 103 (pink); bilberry 151 (pink or white);

**SEPAL 5:** bristly black currant 162; swamp red currant 163;

**PETAL 5** (see also 5 petal clusters): **SCRAWNY PETALS:** serviceberry 92 (white); beaked hazelnut 127 (red); **PETAL 5:** alder-leaved buckthorn (greenish yellow) 140; highbush blackberry 184; trailing blackberry 180; red raspberry 187; **SWEPT BACK:** bitter nightshade 56; pipsissewa 167; **PETALS 4 UP AND 1 DOWN:** Tartarian honeysuckle 51; **FUSED ENDS:** dwarf raspberry 179; **FUSED PETALS:** rhodora (pink) 110; **SAUCER-SHAPED:** pale bog laurel (5 lobes) 42; sheep laurel (5 lobes) 168; **FUNNEL-SHAPED:** Canada fly honeysuckle 49; Mountain fly honeysuckle 52; **TUBULAR:** northern bush-honeysuckle 44; mayflower / trailing arbutus 148 (lobes, white or pink); **SLIGHTLY BELL-SHAPED:** mountain fly honeysuckle 52; twinflower 54; **BELL-SHAPED:** Scottish heather 41 (pink); Lapland diapensia 43 (white, open at top); Canadian fly honeysuckle 49 (pale yellow); mountain fly honeysuckle 52 (pale yellow); striped maple 63 (yellow-green); lowbush blueberry 102 (white or pink tinted); velvet-leaf blueberry 113 ; glossy buckthorn 145; swamp gooseberry (actually 5 sepals) 161; **URN SHAPED:** teaberry 101 (white); leather-leaf 107 (white); dwarf huckleberry (5 lobes, white – pink); bog rosemary 84 (pale pink or white); snowberry 62 (pink); bearberry 147 (dark pink tipped); huckleberry 108 (5 lobes totally red);

**PETALS 6:** Japanese barberry 144 (with six sepals);

**TEPAL 6** (petals and sepals look identical): common greenbrier 143;

**CATKINS** (usually male longer hanging, females shorter erect):

**CATKINS SOFT:** **WILLOWS:** **BEFORE LEAVES:** basket willow 82 (2.5-3, yellow (m) greenish yellow (f), **on hairy gray stems**, before leaves); cottony willow 72 (2-4 cm, on **yellow-brown or red-brown waxy branches**, before stipuled red-tinted leaves.); silky willow 72 (2-4 cm, before leaves, rare NS); pussy willow 86 (2-7, **silvery**, before leaves); **AS LEAVES UNFURL:** shining willow 73 (2-5 cm, as tailed leaves unfurl, cottony seeds, near water); Bebb's willow 85 (2.5-5, **very upright, chubby, silvery** > **yellow** (m) or green (f), as unfurl); balsam willow 117 (2-6 cm., as oval finely toothed red stemmed leaves unfurl); black willow 74 (2.5-7, as stipuled leaves unfurl); sage willow 81 (3-7 cm, pinkish red stigmas, as gray leaves unfurl. hbt limestone); **AFTER LEAVES UNFURL:** meadow willow 76 (**very small** 1-2 cm, as **densely arranged leaves** expand); laurel willow 75 (2-4 cm, after **yellow-high-lighted dark green** leaves); purple willow 77 (2-5 **opposite pairs**, purple-red stems, as blue-green leaves unfurl);

**CATKINS BUMPY / BEADY:** **ASPEN, BIRCH, POPLAR, ALDER, ETC.:** beaked hazelnut 127 (2.5 cm yellowish green, before leaves); Eastern hop-hornbeam / ironwood 88 (1.5-5 cm, as leaves unfurl); trembling aspen 116 (3-6 cm gray and hairy, before leaves); silver poplar 158 (4-7.5 cm pinkish gray to pale yellow, before leaves); large-tooth aspen 115 (5-7.5 cm., grey brown hairy, before leaves); yellow birch 121 (3-5 cm); heart-leaf birch 122 (3-9 cm, **hairless twigs**); white birch 123 (3-9 cm slender br. gr. or br yellow, **haired twigs**); gray birch 125 (5-8 cm); speckled alder 118 (6-8 cm yellow brown, before leaves, **on reddish brown smooth twigs with lenticels**); downy alder 120 (6-8 cm, before leaves, **on reddish brown fuzzy twigs**); balsam poplar 114 (6-10 fluffy, before leaves);

**CATKINS LOOSE:** red oak 153 (loose catkin, yellow-green); burr oak 154 (loose catkin, yellow-green); English oak 155 (loose catkin, yellow-green);

**CATKINS:** bayberry 104 (small); sweet gale 87 (cm brown with reddish brown scales > yellow); sweet fern 78 (> 5 cm green-brown arching start in fall);

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**SEED:**

ACORNS: northern red oak 153 (flat beret); burr oak 154 (rounded, hairy-fringed cap); English oak 155 (skinny, cup-like cap);

POMES [fleshy with seeds in center]: ORANGE-RED: mountain ash 195 (dense clusters); European mountain-ash 196; Showy mountain ash 197; RED: apple 95, hawthorn 132; English hawthorn 134; Sorbaronia hybrids 200; BLACK: black chokeberry 93; purple chokeberry 94;

HIP (berry-like orange to red): smooth rose 188 (**prickle nearly absent**); shining rose 190 (bristle-covered hips, **stem covered in bristles**); swamp rose 191 (**sticky stiff bristle** covered hip); rugosa rose 193 (**largest** hips - 3 cm, rugose (veiny) leaves); multiflora rose 193 (**smallest** hips - 0.5 cm); glaucous rose 192 (**reddish purple leaves**); cinnamon rose 193 (**double flowered**); briar rose 192; dog rose 192; French rose 192; roses 188-194 (red);

BERRIES WHITE: snowberry 62 (egg-shaped); RED: partridgeberry 61; teaberry (crowned & tipped) 101; bearberry 147; small cranberry 150 (**purple brown > bright red, egg-shaped**); bittersweet nightshade 156 (shiny, egg-shaped); skunk currant 160 (bristly, small beak); swamp red currant 163 (beaked, small loose clusters); barberry 130 (chains, elliptical) Japanese barberry 144 (**small clusters, elliptical**); REDDISH-PURPLE: swamp gooseberry 161 (beaked); mountain cranberry 152 (crowned); PURPLE: serviceberry tree 92 (crowned, red > purple); Bartram's serviceberry 90 (crowned); BLUE: dwarf bilberry 103 (tiny crown); alpine bilberry (crowned & billed); BLUE-BLACK: lowbush blueberry 102 (crowned); common greenbrier 143 (clusters); Alpine bilberry 151 (beaked); riverbank grape 166 (clusters); Virginia creeper 183; BLACK: wild black currant 159 (beaked, **hanging clusters**); bristly black currant 162 (**bristled**);

DRUPES [fleshy with stony seed seen in center]: WHITE: red-osier dogwood 59; GREEN-WHITE: poison ivy 181; YELLOW to ORANGE: eastern leatherwood 146; ORANGE RED: bunchberry 57; winterberry 99; Canada plum 135; RED: hobblebush 56 (becoming black); squashberry 65; highbush cranberry 66; pin cherry 79; daphne 83; mountain holly 105 (long stalked); PALE BLUE: round-leaved dogwood 58 (flat cluster); DARK BLUE / BLUE-BLACK: northern wild raisin 45; arrowwood 55; alternate-leaved dogwood 106; PURPLE BK: black cherry 97 (shiny hanging); chokecherry 136; common elderberry 177 (**flat clusters**), red elderberry 178 (**conical clusters**); DARK / BLACK: inkberry 98; black huckleberry 108 (shiny); dwarf huckleberry 109 (**sticky-haired**); alder-leaved buckthorn 140 (alternate, **finely toothed leaves**); European buckthorn 53 (5-8, **opposite** or sub opposite, **finely toothed**); glossy buckthorn 145 (5-10, red > black, alternate, **cluster in axils, shiny undulating leaves, smooth**);

RASPBERRY-LIKE / (ATTACHED DRUPES): ORANGE: cloudberry 164; RED: purple-flowering raspberry 165 (flattened berry); dwarf raspberry / dewberry 179; bristly dewberry 180 (to purple black); red raspberries 187; FUZZY RED DRUPES: staghorn sumac 199; BLACK: blackberries 184-185;

CAPSULES: leatherleaf 107 (tipped); American witch-hazel 131 (brown, hairy); Oriental bitter-sweet 139 (**yellow** and later split with **red center**); sheep laurel 168 (**rounded**); STAR-LIKE broad-leaved meadowsweet 137; steeplebush 138; eastern ninebark 157; false spiraea 198; GLOBULAR: basswood / linden 141 (**woody**); little-leaved linden 141 (**ribbed**); pipsissewa 167 (**pink**); swamp loosestrife 169 (tiny pink tinted);

HUSK: American beech 89 (**woody, spines**); beaked hazelnut 127 (**hairy, beaked shape**); butternut 186 (**fuzzy**); horsechestnut Ptd#6a. Many more shrubs with capsules.

HAIRY: eastern baccharis tree 142 (like dandelions); SEEDS WITH FEATHERY TAILS: purple clematis 170; Virginia clematis 171;

BRACT SINGLE: basswood / linden 141 (large, above seed); BRACT CLUSTERS: hophornbean / ironwood 88 (overlapping);

CONE-LIKE (female seed cones): creeping juniper 38 (**minute**); speckled alder 118 (0.5 cm **small**, upright); sweet gale 87 (1 cm in nutlets); white birch 123 (2-4 cm drooping light brown); gray birch 125 (cone-like); hemlock 32 (1.5 -2 blue green > light brown); black spruce 26 (2-3 cm, dark purple, **egg sh. curved down**, old cones remain on tree); white spruce 25 (3-5 purple red, upright at first > greenish red, pendant > brown); balsam fir 21 (5-8 cm, sticky, upright, top most, pale green > purplish grey > brown); jack pine 28 (3-5 cm, **often curl in, taper**); Scotch pine 31 (cluster, f 4-7 **taper, don't curl**); red pine 29 (cluster, 4-6, **new middle growth comes out of it**); eastern white pine 30 (7-15 cm, **long**);

GLOBULAR (see capsule) HUSK (see capsule); NUTLETS: bayberry 104 (round blue-grey);

PEAPODS: black locust 202 (5-10 brown); clammy locust 203 (5-10 **sticky** brown); Scotch broom 182 (fuzzy edged);

SAMARAS SINGLE: ROUND: white elm 128 (**hairy edged**); English elm 129 (**not hairy**);

SAMARAS SINGLE: WINGED: white ash 173 (**wings attached to top of seed**); red ash 176 (**wings long mid seed attachment**); black ash 175 (**wings full length of seed and maybe twisted**); European 174 (**paddle-shaped twisted**);

SAMARAS PAIRED: Manitoba maple 172 (narrow v shaped, still on tree winter); mountain maple 64 (tight); silver maple 70 (somewhat tight); sycamore maple 68 (somewhat tight, loose chain); red maple 69 (somewhat tight **pinkish green** > brown); sugar maple 71 (**u-shaped sinuses**); striped maple 63 (**wide**); Norway maple 67 (**very wide**);

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**FRAGRANCE:** balsam fir 21; bush honeysuckle 44 (flowers); twin flower 54; hobblebush 56; lilac 60; sweet fern 78 (bayberry); sweet gale 87 (sweet); apple 95; northern bayberry 104 (bayberry, sweet); balsam poplar 114; balsam willow 117; yellow birch 121 (wintergreen); Canada plum 135 (light); choke cherry 136; black cherry 97 (twigs: bitter almond scent); basswood / linden 141; eastern leatherwood 146; mayflower / trailing arbutus 148 (spicy); twinflower 150; riverbank grape 166; virgin's bower 171; American ash 173; elderberry 177; rose 188-192; black locust 202; ramshorn lady slipper np; cow parsnip np; shinleaf pyrola np; sweet scented bedstraw np; orchids np;  
**Smelly / Rank:** skunk currant 160; European ash 174; skunk cabbage np; poison hemlock np; water hemlock np;  
**SAP** (leaf or twigs): WHITE: Norway Maple 67; CLEAR sugar maple 71; yellow birch [many more];

#### Leaf Regular Color

**GRAY GREEN:** sage willow 81; Bebb's willow 85; **TAN GREEN:** hobblebush 56;  
**LIGHT GREEN:** mountain holly 105; **YELLOW GREEN:** mountain maple 64;  
**BRIGHT GREEN:** Canadian fly honeysuckle 49; black huckleberry 108;  
**DARK GREEN:** dark green: northern wild raisin 45; mountain fly honeysuckle 52; European buckthorn 53; red-osier dogwood 59; partridgeberry 6.; purple chokeberry 94;  
**GRAYISH BROWN:** mountain maple 64;  
**RED-PURPLE:** teaberry 101; glaucous rose species 192;  
**Tints** **BRONZE:** serviceberry / shadbush 90 – 92; lowbush blueberry 102; beaked hazelnut 127; sheep laurel 168; Virginia clematis 171; **RED:** cottony willow 72; pussy willow 86; large cranberry 112; balsam willow (young) 117; sheep laurel 168; swamp loosestrife 169; **PURPLE** bearberry 147;

#### Leaf Fall Colors:

**EVERGREEN** bog laurel 42; bunchberry 57; blackberry 184;  
**YELLOW:** Canadian fly honeysuckle 49; mountain fly honeysuckle 52; European buckthorn 53; striped maple 63; Norway maple (some orange) 67; Manitoba maple 172; black willow 74; **POPLAR / BIRCH:** balsam poplar 114; large-toothed aspen 115; trembling aspen 116; yellow birch 121; heart-leaved birch 122; paper birch 123; grey birch 125; beaked hazelnut 127; white elm 128; English elm 129; hawthorn 132; chokecherry 136; meadowsweet 137; steepbush 138; bittersweet 139; basswood / linden 141; riverbank grape 166; white ash 173; black ash 175; red ash 176; scotch broom 182; false spiraea 198; clammy locust 203;  
**YELLOW TO ORANGE:** black cherry 97; **YELLOW, ORANGE, RED:** northern bush-honeysuckle 44; red-osier dogwood 59; striped maple 63; mountain maple 64; red maple 69; silver maple 70; sugar maple 71; willow 73 -74; pin cherry 79; serviceberry 90-92; barberry 130; poison ivy 181; American mountain ash 195; showy mountain ash 197;  
**GOLD:** American witch-hazel 131;  
**ORANGE TO PURPLE RED:** black chokeberry 93; Staghorn sumac 199;  
**PINK-RED:** swamp loosestrife 169; **RED:** wild raisin 45; round-leaved dogwood 58; mountain maple 64; highbush cranberry 66; red maple 69 (also yellow and orange to dark burgundy); apple 95; blueberry 102; northern red oak (or brown) 153; skunk currant 160; swamp gooseberry 161; swamp loosestrife 169; Virginia creeper 183; smooth rose (few) 188;  
**PURPLE-RED** Lapland diapensia 43; bristly black currant 162; swamp red currant 163; blackberry 184, 185;  
**BURGUNDY RED:** red maple 69; velvet-leaved blueberry 113; **BRONZY PURPLE:** cloudberry 164;  
**YELLOW > BROWN:** beech 89; burr oak 154; **RED-BROWN:** Labrador tea 111; northern red oak (or brown) 153;  
**BLACK:** bearberry 147;

#### Bark and Twigs

Tree Codes: Y = Young, M = Mature; O = Old; > = becomes (next stage); bk = bark np = no picture  
**TWIG / TRUNK ATTACHMENTS:** **BRISTLES:** bristly dewberry 180; red raspberry 187; **SPINES:** barberry 130 (berries chained); Japanese barberry 144 (berries small clusters); black locust 202; **PRICKLES:** greenbrier 143; bristly black currant 162; blackberry 184; red raspberry 187; roses 188-194; **THORNS:** hawthorn 132; **GLANDULAR HAIRS:** clammy locust 203; **AERIAL ROOTS:** poison ivy 181; **TENDRILS:** Virginia creeper 183; riverbank grape 166;  
**TWIG OR TRUNK MOTION:** **ZIGZAG:** beech 89 (twigs); basswood / linden 141 (twigs); black locust 202; **TWINING:** European honeysuckle 58; **CLIMBING / VINING:** grapes 166; greenbrier 143; bittersweet nightshade 156; purple clematis 170; Virginia clematis 171; **ROPE-LIKE:** black locust 202; clammy locust 203; **SINEWY** (muscle-like) American hornbeam Woll16;  
**BARK COLOR:** **WHITE:** paper birch Y M 123 (**peels horizontally**, with orange or pink tinge > white or creamy white); gray birch 125 (or grayish white, chalky, **no peeling and has black chevrons**); **GREENISH GRAY:** large-toothed aspen Y M 115 (or yellowish gray > brown to gray); trembling aspen 116 (light green, creamy yellow, often **powdery** > grayish brown); **GRAY-BROWN:** balsam poplar Y M 114 (with diamond lenticels > darker, grayer); **GOLDEN BROWN:** yellow birch 121 (or reddish brown); trembling aspen Y 116; white poplar Y 156; **GREEN:** striped maple 63; **GREENISH-BROWN:** balsam poplar Y M 114 (> darker grayer); **GREEN / PURPLE TINTED:** meadow willow 76; **REDDISH BROWN:** pin cherry 79 (Int warty orange); black cherry (to grayish brown Int gray > reddish brown); European buckthorn 53; squashberry 65; highbush cranberry 66; lowbush blueberry 102; speckled alder 118; yellow birch 121; paper birch (young) 123; **RED PURPLE:** mountain maple 64; purple willow 77; balsam willow 117;  
**PURPLE BLOTCHES:** round-leaved dogwood 58; **RED:** red-osier dogwood 59; red maple (first year) 69;

**Bark of Shrubs or Twigs of Trees - Texture or Condition:** FUZZY: mountain fly honeysuckle Y 52; HAIRY: mountain maple Y 64; dwarf huckleberry Y 109 (rusty hairs); Labrador tea Y 111 (white to rusty red); velvet-leaved blueberry Y 113 (white down); red ash Y 176; SMOOTH: mountain fly honeysuckle M 52 (or flaky); mountain maple M 64; beech Y M O 89; dwarf huckleberry M 109; WAXY COATING: European buckthorn Y 53 (exfoliating); silver maple Y 70; cottony willow 72; Bartram's serviceberry 90; black cherry Y 97; English hawthorn Y 134; English oak 155 (exfoliating); Manitoba maple Y 172; FLAKY: mountain fly honeysuckle 52; silver maple M 70; inkberry 98; black huckleberry 108; Labrador tea M 111 (reddish brown); large cranberry 112; FINELY SCALY: European buckthorn M 53; smooth arrowwood 55; oriental bittersweet 139; red elderberry 178; Staghorn sumac 199; shrubby cinquefoil 201; black ash 175; ROUGH: red maple O 69; leatherleaf Y 107; beaked hazelnut 127; common elderberry 177; WARTY: velvet-leaved blueberry M 113; VERTICAL STRIPED: serviceberry 92 (dark); barberry 130 (dark); VERTICAL NARROW STRIPS: Eastern hop hornbeam 88; Canada fly honeysuckle 49; common snowberry 62; heart-leaved birch 122; ninebark 157; purple-flowering raspberry 165; riverbank grape 166; FISSURES: purple willow 77; English oak 155; scotch broom 182; FURROWED: hobblebush 56; willow 73-75; basket willow 82; pussy willow 86; RIDGED: meadowsweet 137; ninebark 157; clematis 170-171; red ash 176; LENTICELS [lenticels exchange gases between the trunk and the air]: WHITE or PALE LENTICELS: paper birch 123; wild raisin 45 (pale); hobblebush 56 (pale); red-osier dogwood 59 (white); squashberry 65 (pale); sugar maple 71 (pale); Bebb's willow 85 (pale); Eastern hop-hornbeam / ironwood 88 (pale); sweet cherry 96 (pale); mountain holly 105 (white); speckled alder 118 (pale); green alder 120 (pale); BROWN: chokecherry 136; RAISED: balsam fir 21; white pine 30; grey birch 125; buckthorn 145; American mountain ash 195; showy mountain ash 197; WARTY LENTICELS: common elderberry 177; red elderberry 178; HORIZONTAL: pin cherry 79; sweet cherry 96;

### Tree Trunks

HORIZONTAL PEELING SHEETS: paper birch / white birch Y M O 123 (**thin wide peels** > curly strips or sheets > irregular at base; white bark); yellow birch Y M O 121 (**frilly** > more abundant frills > irregular plates); pin cherry M 79 (narrow peels); SMOOTH: beech Y M 89 (smooth > smooth sometimes with wrinkles, may blister, crack, or dimple); SMOOTH WITH DIAMOND SHAPE LENTICELS: balsam poplar Y M 114 (lenticels form vertical cracks > narrow furrows; on **greenish brown bark**); big toothed aspen Y M O 115 (lenticels form vertical cracks > narrow furrows > deeper furrows; on **greenish gray bark**); white poplar Y 158 (smooth > furrowed; on greenish white bark); SMOOTH WITH WIDE LENTICELS: gray birch Y M 125 (on white or grayish bark, not peeling, **fungus chevrons**); quaking aspen Y M 116 (light and dotted > darkish black furrows with flat intersecting ridges; on powdery bark > grayish brown); black cherry Y M 97 (lenticels gray, bitter almond smell > scales sides curl downward flake > scales upturn; on reddish brown bark); FINELY CRACKED: sugar maple Y M 63 (from vert. cracks); VERTICAL STRIPED: striped maple Y M O 63 (**white lines on green bark** > black lines on reddish brown bark); downy serviceberry Y M 212 (dark lines > dark cracks); alternate-leaved dogwood 106 (**white**); English hawthorn 134 (**orange** > cracks); various hickory Y M np (**orange** > cracks); VERTICAL CRACKS: sugar maple Y M O (with **fine horizontal cracks** > **vertical strips that angle curl > begin to detach**); red maple Y M 69 (**random cracks** > vertical plate-like strips); silver maple Y 70 (random cracks O > vertical plate-like strips; on silvery gray bk); northern red oak Y M O 153 (reddish cracks > long black furrows > rougher ridges, broken); Norway maple Y M O 67 (**cracks with orange tint** > diamond furrows, intersecting ridges > ridges wider); basswood / linden Y M O 141 (cracks with hairline cracks between > furrows > intersecting ridges); butternut Y 186; VERTICAL STRIPS: red maple M 69 (from vert. cracks); silver maple M 70 (from vert. cracks); sugar maple M O 71 (from vert. cracks); hophornbeam / ironwood Y M 88 (narrow strips, rectangular, detached on ends > thicker, less flakey); burr oak Y M 154 (narrow thin strips > deeply furrowed, scaly-looking flattened ridges, broken into blocks); VERTICAL STRIPS SPONGY: white elm / American elm Y M O 128 (vertical strips or scales, soft, not layer > layered black and white, with intersecting ridges > ridges deeper); SCALES SOFT AND SPONGY: black ash Y M 175 (scales soft & corky > thicker and knobby); SCALES: sycamore Y M 68 (scales thin, puzzle like, flake off > small scales > narrow flat-top vertical ridges); SCALES SQUARISH > FURROWS > INTERSECTING RIDGES white ash Y M O 173 (squarish scales, broken to blocks > intersecting ridges > flat ridges); Manitoba Maple / box elder Y M 172 (); PLATES: THIN: sugar maple M 71 (from vert.. cracks); black cherry M 216 (from smooth wide lenticels); THICK: yellow birch O (from horizontal peeling); RIDGED and FLAKY: white elm 128 (from vert. strips spongy); English elm 129; burr oak 154 (from vert. strips); RIDGED AND FURROWED: sycamore maple 68; sugar maple 71; balsam poplar 114; large-toothed aspen 115; red oak 153; white poplar 158; Manitoba maple 172; white ash (with ridges) 173; common elderberry 177; INTERSECTING RIDGES: locust Y M 202 (intersecting ridges with checkered cracks > less intersecting; branches: spines); Norway maple M 67 (from vert. cracks); basswood / linden M 141 (from vert. cracks); butternut M 186 (from vert. cracks); white elm M 128 (from vert. strips spongy); Manitoba maple M 173 (from); white ash M 173;

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