Key to species on Dan N.'s Bear Island lists

1. Reproductive organs in cones. Trees with resinous, needle-like leaves. *Pinus virginiana*
1. Reprooductive organs in flowers. Various but not exactly as above. 2.
2. Leaf venation generally parallel; floral parts usually in 3s. "Monocots."
3. Inflorescence a spathe (cylindrical naked axis covered with minute flowers) surrounded by a single large bract (spadix). *Arisaema triphyllum*
3. Inflorescence not as above. 4.
4. Perianth absent; inflorescence of one or more spikelets.
5. Leaves and bracts 3-ranked. *Carex* (Cyperaceae)
5. Leaves and bracts 2-ranked. Poaceae
4. Perianth present; flowers not in spikelets.
6. Woody vines with prominent pricles. *Smilax* spp.
6. Herbaceous, unarmed.
7. Leaves narrowly linear; perianth inconspicuous, of green or brown scales. *Luzula echinata*
7. Leaves various; perianth showy.
8. Leaves 3, venation reticulate. *Trillium sessile*
8. Leaves indefinite in number; venation parallel.
9. Leaves all basal.
10. Leaves linear. *Muscari botryoides*
10. Leaves broad. *Erythronium*
11. Perianth white. *Erythronium albidum*
11. Perianth yellow. *Erythronium americanum*
9. Leaves cauline.
12. Flowers white, in terminal panicles. *Smilacina racemosa*
12. Flowers yellow or greenish, solitary or paired in leaf axils.
13. Tepals united for most of their length; flowers paired. *Polygonatum biflorum*
13. Tepals free; flowers solitary. *Uvularia sessilifolia*
2. Leaf venation generally reticulate; floral parts usually in 4s or 5s. "Dicots."
14. Evergreen succulents of rock outcrops.
15. Spiny; stems succulent. *Opuntia humifusa*
15. Unarmed; leaves succulent. *Sedum ternatum*
14. Not succulent, rarely evergreen.
16. Trees, shrubs, or woody vines.
17. Petals united; calyx and corolla always well-defined. **1. Sympetalous woody dicots**.
17. Petals separate or absent. **2. Apetalous or polypetalous woody dicots**
16. Herbaceous plants.
17. Petals united to form a tube, at least below.
18. Flowers in heads, enclosed in a tight involucre of bracts. Asteraceae
18. Flowers not in heads.
19. Corolla strongly zygomorphic, usually bilabiate. **3. Sympetalous zygomorphic herbs.**
19. Corolla radially symmetrical. **4. Sympetalous actinomorphic herbs.**
17. Petals free to base.
20. Corolla bilaterally symmetrical. **5. Zygomorphic polypetalous herbs**
20. Corolla radially symmetrical. **6. Actinomorphic polypetalous herbs**

MONOCOT FAMILIES

CYPERACEAE

Carex spp. (sedges)
Carex careyana (sedge)
Carex pensylvanica? (sedge) 4/14 (early fl.)

POACEAE (GRAMINEAE)

1. Flowers 1 per spikelet. *Anthoxanthum odoratum* (sweet vernal grass) 4/22
1. Flowers 2-several per spikelet. *Poa*

2. Plants spreading by elongate stolons. *Poa cuspidata*
2. Plants without spreading stolons.
3. Soft annuals, panicles 1-8 cm long, spikelets tightly clustered, lower inflorescence branches usually ascending. *Poa annua*
3. Coarse tufted perennials, panicles 10-20 cm long, spikelets not clustered, lower inflorescence branches usually reflexed. *Poa sylvestris*

DICOTS

Woody

1. Sympetalous woody dicots

1. Leaves opposite or whorled.
2. Inflorescences terminal.
3. Inflorescence surrounded by petalloid bracts; leaves entire, secondary veins turning aside before reaching margins. *Cornus florida*
3. Inflorescence without prominent bracts; leaves toothed, secondary veins extending ± straight to margins. *Viburnum*
4. Leaves 3-lobed. *V. acerifolium*
4. Leaves unlobed.
5. Leaves finely toothed, secondary veins not especially prominent. *V. prunifolium*
5. Leaves coarsely toothed, secondary veins deeply impressed. *V. rafinesqueanum*
2. Inflorescences axillary.
6. Leaves compound. *Fraxinus*
7. Twigs glabrous. *Fraxinus americana*
7. Twigs hairy. *Fraxinus pensylvanica*
6. Leaves simple.
8. Flowers radially symmetrical; corolla-lobes threadlike. *Chionanthus virginicus*
8. Flowers bilaterally symmetrical; corolla-lobes much broader. *Lonicera*
9. Woody vines. *Lonicera japonica*
9. Shrubs.
10. Leaves strongly acuminate. *L. maackii*
10. Leaves broadly acute, obtuse, or mucronate. *L. xylostemon*

1. Leaves alternate.
11. Trees.
12. Corollas small, green, radially symmetrical. *Nyssa sylvatica*
12. Corollas large, lavender, bilaterally symmetrical. *Paulownia tomentosa*
11. Shrubs.
13. Plants trailing; leaf bases cordate. *Epigaea repens*
13. Plants erect or ascending; leaf bases not cordate.
14. Ovary superior; corolla not urceolate, pure white or pink.
15. Corolla tubular proximally, deeply lobed; stamens 5, projecting forward from the corolla. *Rhododendron periclymenoides*
15. Corolla bowl-shaped, scarcely lobed; stamens 10, inserted in pockets in the corolla. *Kalmia latifolia*
14. Ovary inferior; corolla urceolate, greenish.
16. Underside of leaf glandular-dotted. *Gaylussacia baccata*
16. Underside of leaf not glandular-dotted.
17. Anthers exserted from corolla. *Vaccinium stamineum*
17. Anthers immersed in corolla. *Vaccinium pallidum*

2. Apetalous or polypetalous woody dicots

1. Leaves opposite or whorled.
2. Low shrubs with simple unlobed leaves.
3. Flowers solitary, stamens 4. *Euonymus alata*
3. Flowers in cymes, stamens many. *Hypericum prolificum*
2. Small to large trees, leaves lobed or compound.
4. Inflorescences terminal.
5. Leaves simple and lobed; petals green. *Acer saccharum*
5. Leaves 3-foliolate; petals white. *Staphylea trifolia*
4. Inflorescences axillary.

6. Flowers long-pedicellate, in long dangling inflorescences; leaves compound. *Acer negundo*
6. Flowers sessile or subsessile, in dense clusters; leaves simple and lobed.
7. Petals present; ovaries glabrous; branchlets spreading or ascending; leaves lobed less than halfway to base. *Acer rubrum*
7. Petals none; ovaries villous; branchlets pendulous; leaves lobed more than halfway to base. *Acer saccharinum*

1. Leaves alternate.
8. Inflorescences unisexual, at least male flowers sessile in pendulous catkins or glomerules (erect catkins in *Salix*).
9. Male and female inflorescences of one or more dense spherical glomerules. *Platanus occidentalis*
9. Male flowers in catkins; female flowers various but not as above.
10. Male and female flowers both numerous in elongate catkins.
11. Secondary veins of leaves curving and not reaching margins.
12. Leaves triangular. *Populus deltoides*
12. Leaves linear. *Salix nigra*
11. Secondary veins of leaves running straight to margins.
13. Intact woody cone-like infructescences persisting from previous year. Shorelines. *Alnus serrulata*
13. Infructescences not woody, disintegrating on tree and not persisting. Understorey of woods.
14. Bark smooth. *Carpinus caroliniana*
14. Bark scaly. *Ostrya virginiana*
10. Male flowers in catkins; female inflorescences few-flowered.
15. Leaves compound. *Carya*
15. Leaves simple, lobed or not.
16. Leaves linear, entire, inrolled in bud. *Quercus phellos*
16. Leaves broader, lobed or crenate, imbricate in bud.
17. Leaves lobed, the lobes bristle-tipped.
18. Leaf blade lobed for 0.7-0.95 of its width, with 2-3(-4) lobes on each side. Tufts of hairs in vein axils large and conspicuous, each hair with 9-19 rays. *Quercus palustris*
18. Leaf blade lobed for 0.25-0.88 of its width, with 3-5 lobes on each side. Tufts of hairs in vein axils small and inconspicuous or absent, each hair with 5-9 rays. *Quercus rubra*
17. Leaves lobed or crenate, lobes or crenae rounded, without bristles.
19. Leaves lobed, with (3-)4-6 lateral veins; bark almost white, exfoliating as thin plates. *Quercus alba*
19. Leaves crenate, with 8-12 lateral veins; bark grey, splitting into persistent ridges. *Quercus montana*

8. Inflorescences bisexual, not catkins or pendent glomerules (if inflorescence is pendent, then flowers pedicellate).
20. Leaves compound.
21. Low arching or prostrate brambles with prickly leaves and stems. *Rubus* cf. *flagellaris*?
21. Upright shrubs or trees or climbing vines, unarmed (with stipular spines only in *Robinia*).
22. Leaves 3-foliolate.
23. Small trees; leaflets undivided; stigmas 2. *Ptelea trifoliata*
23. Woody vines climbing by adventitious roots; leaflets deeply cleft; stigmas 3. *Toxicodendron radicans*
22. Leaves pinnately compound with many leaflets.
24. Trees with pendent inflorescences.
25. Foul-smelling trees with radially symmetrical greenish flowers. *Ailanthus altissima*
25. Odorless trees with white flowers that are strongly bilaterally symmetrical. *Robinia pseudoacacia*
24. Shrubs with erect inflorescences.
26. Twigs and petioles glabrous or finely puberulent. *Rhus glabra*
26. Twigs and petioles densely shaggy. *Rhus typhina*
20. Leaves simple.

27. Venation palmate.
    28. Ovaries numerous; leaves truncate. *Liriodendron tulipifera*
    28. Ovary solitary; leaves rounded or acuminate.
        29. Small trees; leaves rounded.
            30. Flowers bilaterally symmetrical, corolla pink. *Cercis canadensis*
            30. Flowers radially symmetrical; petals green. *Sassafras albidum*
        29. Large trees; leaves acuminate.
            30. Stamens numerous; bark not corky; pedicels fused to bracts. *Tilia americana*
            30. Stamens 5; bark covered with corky warts and ridges; pedicels without bracts. *Celtis occidentalis*
27. Venation pinnate.
    31. Evergreen; leaf margins spinose. *Ilex opaca*
    31. Deciduous; leaves unarmed.
        32. Petals green, brown, or purple-brown, ovaries not enclosed in a hypanthium.
            33. Flowers in sessile umbels in leaf axils; leaves toothed; canopy trees.
                34. Flowers on long drooping pedicels; fruit ciliate. *Ulmus americana*
                34. Flowers nearly sessile, tightly clustered; fruit glabrous. *Ulmus rubra*
            33. Flowers solitary or in clusters of 2-4; shrubs or small trees of understorey; leaves entire.
                35. Flowers large, solitary, purple-brown. *Asimina triloba*
                35. Flowers small, paired, greenish. *Lindera benzoin*
        32. Petals white, pink, or yellow, ovaries enclosed in a hypanthium.
            36. Flower yellow; hypanthium longer than sepals, petals none. *Dirca palustris*
            36. Flower white or pink; petals present, much longer than hypanthium.
                37. Ovary and style 1 per flower.
                    38. Inflorescence an elongate receme. *Prunus serotina*
                    38. Inflorescence an umbel.
                        39. Flowers subtended only by bud-scales (leaves, if any, from different buds); sepals pubescent. *Prunus americana*
                        39. Flowers subtended by reflexed scale-like green bracts; sepals glabrous. **Prunus avium*
                37. Ovaries and styles 5 per flower.
                    40. Petals obovate; flowers in short, umbel-like racemes. **Malus sylvestris*
                    40. Petals narrow, oblanceolate; flowers in longer racemes.
                        41. Inflorescence ascending. *Amelanchier canadensis*
                        41. Inflorescence lax, horizontal or pendent.
                            42. Undersides of leaves tomentose. *Amelanchier arborea*
                            42. Undersides of leaves glabrous. *Amelanchier laevis*

3. Sympetalous zygomorphic herbs.

1. Plant white, yellow, or brown, parasitic.
    2. Yellow or yellow-brown; stems thick, scaly; stamens exserted. *Conopholis americana*
    2. White; stems slender, naked; stamens immersed. *Orobanche uniflora*
1. Plant green, photosynthetic.
    3. Corollas rotate; stamens 2, exserted.
        4. Leaves wider than long, 3-5-lobed. **Veronica hederifolia*
        4. Leaves longer than wide, unlobed. *Veronica persica*
    3. Corollas tubular; stamens 4.
        5. Stems trailing and mat-forming; leaf blade reniform, all leaves green. **Glechoma hederacea*
        5. Stems erect; leaf blade triangular, upper leaves purple. **Lamium purpureum*

4. Sympetalous actinomorphic herbs.

1. Inflorescence a head. Asteraceae
    3. All corollas ligulate (the tube split down one side to form a flat strap).
        4. Involucre 1.5-2.5 cm long; heads solitary on an unbranched scape. *Taraxacum officinale*
        4. Involucre 3-10 mm long; stem often branched, heads often more than one per stem.
            5. Perennial; pappus of bristles only. *Hieracium venosum*
            5. Annual; pappus of alternating scales and bristles. *Krigia virginica*
    3. Corollas tubular, or corollas of central flowers (disk flowers) tubular surrounded by a ring of peripheral

flowers (rays) having flat corollas.
6. Head discoid; phyllaries straw-coloured. *Antennaria plantaginifolia*
6. Head radiate; phyllaries green.
7. Leaves opposite. *Arnica acaulis*
7. Leaves alternate.
8. Rays white or pinkish. *Erigeron philadelphicus*
8. Rays yellow.
9. Large leaves basal and cauline. *Senecio aureus* [=*Packera*]
9. Large leaves basal, white-tomentose beneath; heads on scaly unbranched pedicels. *Tussilago farfara*

1. Inflorescence not a head.
10. Leaves opposite or apparently whorled.
11. Corolla strongly salverform. *Phlox*
12. Leaves subulate. *Phlox subulata*
12. Leaves laminate. *Phlox divaricata*
11. Corolla not salverform.
13. Leaves whorled (or apparently so).
14. Inflorescence axillary; stems reclining, covered with retrorse teeth. **Galium aparine*
14. Inflorescence terminal; stems erect, without teeth. *Chimaphila umbellata*
13. Stipules small and different from the opposite leaves.
15. Evergreen. *Mitchella repens*
15. Green only in the warmer months. *Houstonia caerulea*
10. Leaves alternate.
16. Flowers solitary, opposite the leaves. *Ellisia nyctelea*
16. Flowers in helicoid inflorescences.
17. Leaves entire. *Mertensia virginica*
17. Leaves parted or compound.
18. Petals fimbriate. *Phacelia purshii*
18. Petals entire.
19. Filaments glabrous, shorter than corolla tube. *Phacelia ranunculacea* (= *Phacelia coveillei*)
19. Filaments pubescent, longer than corolla tube.
20. Inflorescence with a well-developed axis; stem leaves small, not overtopping inflorescences, pinnately lobed. *Phacelia dubia*
20. Inflorescence branching; stem leaves large, overtopping inflorescences, ± palmately lobed. *Hydrophyllum canadense*

5. Zygomorphic polypetalous herbs

1. Petals overlapping.
2. Leaves cauline; flowers yellow, spurred on one side, with one plane of symmetry. *Corydalis flavula*
2. Leaves basal; flowers white, spurred on both sides, with two planes of symmetry. *Dicentra*
3. Bases of corolla prolonged strongly backward into long spurs. *Dicentra cucullaria*
3. Bases of corolla rounded, barely prolonged into shallow sacs. *Dicentra canadensis*

1. Petals spreading.
4. Corolla green, petal blades ca the same size. *Hybanthus concolor*
4. Corolla white, yellow, or blue, petal blades conspicuously different in size. *Viola*
5. Plant acaulescent, all leaves basal; corolla usually deep blue. *Viola sororia*
5. Leaves cauline; corolla white, yellow, or pale blue.
6. Stipules pinnately lobed in lower half, upper half entire; corolla pale blue or creamy. *Viola bicolor*
6. Stipules toothed or crenate for their whole length; corolla white or yellow.
7. Corolla yellow; stipules entire or crenulate. *Viola pubescens*
7. Corolla white; stipules strongly toothed. *Viola striata*

6. Actinomorphic polypetalous herbs

1. Flowers with several separate ovaries.
2. Petals strongly spurred, red with yellow mouths. *Aquilegia canadensis*

2. Petals plane, never red.
    3. Petals white or pink.
        4. Inflorescence a raceme; leaves all basal.
            5. Leaves entire or toothed; stamens 10. *Saxifraga virginiensis*
            5. Leaves palmately lobed; stamens 5. *Heuchera americana*
        4. Flowers solitary or cymose; cauline leaves present (calyx-like in *Anemone americana*).
            6. Leaves compound; stigma sessile. *Thalictrum thalictroides* [*Anemonella*]
            6. Leaves lobed or parted; stigma terminating a short style.
                7. Basal leaves evergreen; involucral leaves sepal-like. *Anemone americana* [*Hepatica*]
                7. Basal leaves seasonal; involucral leaves deeply lobed, well separated from flowers. *Anemone quinquefolia*
    3. Petals yellow.
        8. Flower perigynous, subtended by an epicalyx of small bracts; stem reclining or prostrate; leaves 3-5-foliolate.
            9. Leaves 3-foliolate; bractlets 3-lobed. **Duchesnea indica*
            9. Leaves 5-foliolate; bractlets unlobed. *Potentilla canadensis*
        8. Flower hypogynous, without an epicalyx; stem erect or nearly so; leaves otherwise. *Ranunculus*
            10. All leaves undivided, merely crenate; sepals 3; stigma sessile. **Ranunculus ficaria*
            10. At least stem leaves deply parted; sepals 5; stigma stigma terminating a short style.
                11. Basal leaves undivided. *Ranunculus abortivus*
                11. All leaves deeply parted or compound.
                    12. Base of stem bulbous. **Ranunculus bulbosus*
                    12. Base of stem not bulbous. *Ranunculus hispidus* var. *nitidus*
1. Flowers with a single ovary.
    13. Stem long-creeping and rooting; leaves evergreen. *Asarum canadense*
    13. Stem erect or ascending, or plant acaulescent; leaves seasonal.
        14. Inflorescence a terminal leafless raceme.
            15. Fruit discoid or obcordate, scarcely longer than wide.
                16. Fruit obcordate. **Capsella bursa-pastoris*
                16. Fruit discoid.
                    17. Stem leaves with auriculate bases. **Lepidium campestre*
                    17. Stem leaves tapering to base. *Lepidium virginicum*
            15. Fruit cylindrical, several times as long as wide.
                18. Petals yellow.
                    19. Stem leaves deeply pinnately lobed, bases not clasping. **Barbarea vulgaris*
                    19. Stem leaves deeply toothed or weakly pinnately lobed, bases clasping. **Erysimum repandum*
                18. Petals white or greenish.
                    20. Hairs branched.
                        21. Lower leaves toothed. *Arabis laevigata*
                        21. Lower leaves pinnately lobed. *Arabis lyrata*
                    20. Hairs never branched.
                        22. Leaves unlobed.
                            23. Leaves with strong garlic odor when crushed. **Alliaria petiolata*
                            23. Leaves without garlic odor. *Cardamine bulbosa*
                        22. Leaves without garlic odor.
                            24. Leaves palmately lobed.
                                25. Glabrous; teeth of leaflets short, rounded. *Cardamine angustata*
                                25. Hairy; teeth of leaflets long, acute. *Cardamine concatenata*
                            24. Leaves pinnately lobed.
                                26. Petioles of stem leaves ciliate at base; most leaves basal. **Cardamine hirsuta*
                                26. Petioles of stem leaves not ciliate at base; most leaves cauline. *Cardamine arenicola*
        14. Inflorescence otherwise.
            27. Corolla yellow; leaves 3-foliolate.
                28. Flowers showy; inflorescences axillary simple umbels. *Oxalis stricta*?

28. Flowers small; inflorescences terminal compound umbels. *Zizia aurea*

27. Corolla white or purple; leaves various.
    29. Leaves basal, flowers scapose (sometimes 1-2 stem leaves in *Podophyllum*).
        30. Leaves simple and lobed.
            31. Leaves peltate. *Podophyllum peltatum*
            31. Leaves not peltate. *Sanguinaria canadensis*
        30. Leaves compound.
            32. Petals 8, white; leaves 2-foliolate, not sour. *Jeffersonia diphylla*
            32. Petals 5, purple, rarely white; leaves 3-foliolate, very sour. *Oxalis violacea*
    29. Leaves cauline or basal and cauline; flowers not scapose.
            33. Inflorescence a compound umbel.
                34. Plant glabrous; fruit ca as wide as long. *Erigenia bulbosa*
                34. Plant pubescent; fruit much longer than wide.
                    35. Hairs spreading; stipules ciliate on margins only. *Osmorhiza claytonii*
                    35. Hairs appressed; stipules densely soft-hairy all over. *Osmorhiza longistylis*
            33. Inflorescence not an umbel.
                36. Sepals 2 or 3.
                    37. Sepals 2, petals 5, pink; leaves linear and undivided. *Claytonia virginica*
                    37. Sepals 3, petals 3, white; leaves compound. *Floerkea proserpinacoides*
                36. Sepals 5.
                    38. Leaves alternate.
                        39. Leaves deeply parted; corollas purple. *Geranium maculatum*
                        39. Leaves undivided; corollas white. *Comandra umbellata*
                    38. Leaves opposite.
                        40. Sepals fused into a ± united tube; petals white or pink. *Silene caroliniana*
                        40. Sepals separate; petals white.
                            41. Styles 3.
                                42. Leaves petiolate, 1-3 cm long; stem cylindrical. **Stellaria media*
                                42. Leaves subsessile, 2-9 cm long; stem 4-angled. *Stellaria pubera*
                            41. Styles 5.
                                43. Petals longer than sepals. *Cerastium arvense*
                                43. Petals and sepals equal in length. **Cerastium vulgatum*