Tree Identification Dichotomous Key

1. Trees
    a. Trees with needles or scales instead of leaves, 1–5 per bundle (**conifers**): **Go to 2**
    b. Trees with broad, flat leaves that fall each year in autumn (**deciduous trees**): **Go to 9**
2. Conifers
    a. Trees with evergreen needles: **Go to 3**
    b. Trees with overlapping flattened scales, purple-blue berries: STOP, you've found an **eastern redcedar** (*Juniperus virginiana*)!
3. Conifers with needles
    a. Leaves present as long needles in groups or bundles: **Go to 4**
    b. Single needles, not in groups: **Go to 7**
4. Conifers with needles in groups or bundles
    a. Leaves present as long needles in bundles of 3+: **Go to 5**
    b. Leaves present as long needles in pairs: STOP, you've found a **red pine** (*Pinus resinosa*)!
5. Conifers with needles in groups of 3 or more
    a. Needles in bundles of 3 or 5: **Go to 6**
    b. Needles in groups of >5 on woody spurs: STOP, you've found a **tamarack** (*Larix laricina*)!
6. Conifers with needles in groups of 3 or 5
    a. Needles in bundles of 3: STOP, you've found a **pitch pine** (*Pinus rigida*)!
    b. Needles in bundles of 5: STOP, you've found an **eastern white pine** (*Pinus strobus*)!
7. Conifers with single needles
    a. Needles square in cross-section and pointy: **Go to 8**
    b. Needles flattened: STOP, you've found an **eastern hemlock** (*Tsuga canadensis*)!
8. Conifers with single needles that are square in cross-section
    a. Needles dark green in color, cones 4–6 inches long, foliage drooping: STOP, you've found a **Norway spruce** (*Picea abies*)!
    b. Needles blue-green in color, cones 1–2 inches long, foliage upright: STOP, you've found a **white spruce** (*Picea glauca*)!
9. Deciduous trees
    a. Leaves and branches arranged mostly across from each other along twigs and trunk (**opposite**): **Go to 10**
    b. Leaves and branches arranged alternately along twigs and trunk (**alternate**): **Go to 14**
10. Deciduous trees with opposite branches
    a. Leaves with a single blade and stem (**simple**): **Go to 11**
    b. Leaves divided into 5–9 leaflets, each attached to a central midrib (**compound**), twigs mostly smooth: STOP, you've found a **white ash** (*Fraxinus americana*)!
11. Deciduous trees with opposite branches and simple leaves
    a. Leaf blades divided into rounded or pointed sections (**lobed**): **Go to 12**
    b. Leaf blades not divided into sections, veins curved: STOP, you've found a **flowering dogwood** (*Cornus florida*)!
12. Deciduous trees with opposite branches and simple, lobed leaves
    a. Margins of leaf blades bearing a series of pointy teeth (**toothed**), with 3–5 pointy lobes: **Go to 13**
    b. Margins of leaf blades smooth (no teeth) between 5 pointy lobes: STOP, you've found a **sugar maple** (*Acer saccharum*)!

13. Deciduous trees with opposite branches and simple, lobed, toothed leaves
    a. Leaves dull whitish underneath, margins coarsely toothed, bark gray: STOP, you've found a **red maple** (*Acer rubrum*)!
    b. Leaves green underneath, margins finely toothed, bark smooth and green with vertical stripes: STOP, you've found a **striped maple** (*Acer pensylvanicum*)!
14. Deciduous trees with alternate branches
    a. Leaves with a single blade and stem (**simple**): **Go to 15**
    b. Leaves divided into 3+ leaflets, each attached to a central midrib (**compound**): **Go to 31**
15. Deciduous trees with alternate branches and simple leaves
    a. Leaf blades often divided into rounded or pointed sections (**lobed**), or coarsely toothed: **Go to 16**
    b. Leaf blades never divided into sections (**not lobed**): **Go to 20**
16. Deciduous trees with alternate branches and simple, lobed leaves
    a. Leaves with 0–4 lobes: **Go to 17**
    b. Leaves with 5+ lobes or coarse teeth: **Go to 18**
17. Deciduous trees with alternate branches and simple leaves with 0–4 lobes
    a. Leaves symmetrical with four main lobes, v-shaped notch at the top: STOP, you've found a **tulip poplar** (*Liriodendron tulipifera*)!
    b. Leaves with 0–3 rounded lobes, often with a "mitten" or "ghost" shape, stem green: STOP, you've found a **sassafras** (*Sassafras albidum*)!
18. Deciduous trees with alternate branches and simple leaves with 5+ lobes or coarse teeth
    a. Leaf lobes or teeth rounded: **Go to 19**
    b. Leaf lobes pointed, deeply lobed: STOP, you've found a **red oak** (*Quercus rubra*)!
19. Deciduous trees with alternate branches and simple, lobed, pinnate leaves and rounded lobes
    a. Leaves shallowly lobed or coarsely toothed, bark brownish-gray with deep grooves (½ inch or more): STOP, you've found a **chestnut oak** (*Quercus montana*)!
    b. Leaves deeply lobed (½ inch or more), bark whitish and flaky: STOP, you've found a **white oak** (*Quercus alba*)!
20. Deciduous trees with alternate branches and simple, non-lobed leaves
    a. Margin of leaf blades bearing a series of pointy teeth (**toothed**): **Go to 21**
    b. Leaf blades with a smooth, continuous margin (**entire**): STOP, you've found a **black gum** (*Nyssa sylvatica*)!
21. Deciduous trees with alternate branches and simple, non-lobed, toothed leaves
    a. Stems and branches often with thorns: STOP, you've found a **cockspur hawthorn** (*Crataegus crus-galli*)!
    b. Stems and branches without thorns: **Go to 22**
22. Deciduous trees with alternate branches, simple, non-lobed, toothed leaves and bark without thorns
    a. Leaf margins with wide-spaced sharp teeth: **Go to 23**
    b. Leaf margins with rounded or closely-spaced teeth: **Go to 24**
23. Deciduous trees with alternate branches, simple, non-lobed, widely toothed leaves and bark without thorns
    a. Bark smooth and gray: STOP, you've found an **American beech** (*Fagus grandifolia*)!
    b. Bark gray-brown with vertical ridges: STOP, you've found an **American chestnut** (*Castanea dentata*)!

24. Deciduous trees with alternate branches, leaves simple, non-lobed with closely-spaced teeth
    a. Leaves heart-shaped, finely toothed: STOP, you've found a **basswood** (*Tilia americana*)!
    b. Leaves not heart-shaped: **Go to 25**
25. Deciduous trees with alternate branches, leaves simple, non-lobed, not heart-shaped with closely-spaced teeth
    a. Bark with numerous horizontal lines: **Go to 26**
    b. Bark without numerous horizontal lines: **Go to 29**
26. Deciduous trees with alternate branches, simple, non-lobed, toothed leaves and bark with numerous horizontal lines
    a. Bark chalky white, leaves nearly triangular with flat base: STOP, you've found a **gray birch** (*Betula populifolia*)!
    b. Bark not whitish, leaves nearly oval: **Go to 27**
27. Deciduous trees with alternate branches, simple, non-lobed, toothed leaves and bark not whitish, with numerous horizontal lines
    a. Bark yellowish to bronze, peels in horizontal strips: STOP, you've found a **yellow birch** (*Betula alleghaniensis*)!
    b. Bark dark gray to black: **Go to 28**
28. Deciduous trees with alternate branches, simple, non-lobed, toothed leaves and bark dark gray to black with numerous horizontal lines
    a. Leaves lancelet in shape, dark green and shiny: STOP, you've found a **black cherry** (*Prunus serotina*)!
    b. Leaves with a slightly heart-shaped base: STOP, you've found a **black birch** (*Betula lenta*)!
29. Deciduous trees with alternate branches, simple, non-lobed, toothed leaves and bark without numerous horizontal lines
    a. Bark lightly peeling in vertical strips: STOP, you've found an **American hophornbeam** (*Ostrya virginiana*)!
    b. Bark not shredding or peeling: **Go to 30**
30. Deciduous trees with alternate branches, simple, non-lobed, toothed leaves and smooth bark without numerous horizontal lines
    a. Bark gray and smooth with muscle-like bulges, leaves 3–6 inches long: STOP, you've found an **American hornbeam** (*Carpinus caroliniana*)!
    b. Bark gray, often with vertical fissures, leaves 1–3 inches long: STOP, you've found a **common serviceberry** or **shadbush** (*Amelanchier arborea*)!
31. Deciduous trees with alternate branches and compound leaves
    a. Margins of leaflet blades bearing a series of pointy teeth (**toothed**): **Go to 32**
    b. Margins of leaflet blades smooth, continuous (**entire**): **Go to 33**
32. Deciduous trees with alternate branches and compound leaves with toothed leaflets
    a. Bark with diamond-shaped ridges: STOP, you've found a **pignut hickory** (*Carya glabra*)!
    b. Bark scaly or shaggy, in loosely attached vertical plates: STOP, you've found a **shagbark hickory** (*Carya ovata*)!
33. Deciduous trees with alternate branches and compound leaves with entire leaflets
    a. Leaflets oval, thorns on stems: STOP, you've found a **black locust** (*Robinia pseudoacacia*)!
    b. Leaflets pointed with small teeth only at base, strong odor when crushed: STOP, you've found a **tree-of-heaven** (*Ailanthus altissima*)!

34 species in this key

- ☐ striped maple (*Acer pensylvanicum*)
- ☐ red maple (*Acer rubrum*)
- ☐ sugar maple (*Acer saccharum*)
- ☐ tree of heaven (*Ailanthus altissima*)*
- ☐ common serviceberry / shadbush (*Amelanchier arborea*)
- ☐ yellow birch (*Betula alleghaniensis*)
- ☐ black birch (*Betula lenta*)
- ☐ gray birch (*Betula populifolia*)
- ☐ American hornbeam (*Carpinus caroliniana*)
- ☐ pignut hickory (*Carya glabra*)
- ☐ shagbark hickory (*Carya ovata*)
- ☐ American chestnut (*Castanea dentata*)
- ☐ flowering dogwood (*Cornus florida*)
- ☐ cockspur hawthorn (*Crataegus crus-galli*)
- ☐ American beech (*Fagus grandifolia*)
- ☐ white ash (*Fraxinus americana*)
- ☐ tulip tree (*Liriodendron tulipifera*)
- ☐ eastern redcedar (*Juniperus virginiana*)
- ☐ tamarack (*Larix laricina*)
- ☐ black gum / black tupelo (*Nyssa sylvatica*)
- ☐ American hophornbeam (*Ostrya virginiana*)
- ☐ Norway spruce (*Picea abies*)**
- ☐ white spruce (*Picea glauca*)
- ☐ red pine (*Pinus resinosa*)
- ☐ pitch pine (*Pinus rigida*)
- ☐ eastern white pine (*Pinus strobus*)
- ☐ black cherry (*Prunus serotina*)
- ☐ white oak (*Quercus alba*)
- ☐ chestnut oak (*Quercus montana*)
- ☐ red oak (*Quercus rubra*)
- ☐ black locust (*Robinia pseudoacacia*)*
- ☐ sassafras (*Sassafras albidum*)
- ☐ basswood (*Tilia americana*)
- ☐ eastern hemlock (*Tsuga canadensis*)

*invasive

**naturalized

BLACK ROCK FOREST