Key (Leaf) to Common North Dakota Trees and Shrubs

A “key” is similar to a road which forks repeatedly, and which has signposts indicating what may be found along each branch. This key is based on a system of couplets, 1a, 1b; 2a, 2b; etc. This gives the reader one of two choices. A number at the right of a description indicates the next step to take. The number in parenthesis after the number at the left indicates where you came from and allows you to back track. Numbers 1a – 16b on the left cover the evergreens; numbers 18a – 20b the woody vines; and 21a – 76b the deciduous trees and shrubs. One herb was included because many people confuse it with poison ivy, a small shrub with which everyone should become familiar in order to avoid it.

The relatively rare species and the horticultural cultivars have been left out because their inclusion would necessarily have increased the complexity of the key.

1a. Trees or shrubs whose foliage is needle-like or scale like (evergreens) .................2
1b. Foliage not needle-like or scale-like but with broad/normal leaves (deciduous) ......17

2a.(1a) Many needles from spur shoots on older twigs; deciduous..........................larches
2b. Not over five needles from one point; evergreen..............................................3

3a.(2b) Needles in fascicles (bunches).............................................................................4
3b. Needles singly, not in fascicles................................................................................7

4a.(3a) Needles per fascicle (bunches), 5...........................................limber pine and white pine
4b. Needles per fascicle, 2 or 3........................................................................................5

5a.(4b) Needles over 3” long, in both 2’s and 3’s..............................ponderosa pine
5b. Needles less than 3” long, only in 2’s.................................................................6

6a.(5b) A tree; bark orange and flaky; cone scales not crowded ................Scotch pine
6b. Usually multi-stemmed/awl cone scales crowded; shrub-like; dark bark ......mugo pine

7a.(3b) Leaves scale-like or awl-shaped, not over ½” long.................................8
7b. Needles linear or needle-like, about 1” long......................................................13

8a.(7a) Branchlets flattened; woody cones only ½” long .........................arboretvitae
8b. Branchlets 3 or 4 angled; fruit berrylike ¼” in diameter...............................9

9a.(8b) Long trailing native groundcover rarely over 5-10” high................creeping juniper
9b. Shrub at least 2 feet high when mature...............................................................10

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10a.(9b) Needles ½” long, strongly boat shaped or awl-like, all sharp...........common juniper
10b Some or all needles scale-like.............................................................................11

11a.(10b) Low spreading landscape shrubs .........................................................(ornamental) junipers
11b. Treelike ............................................................................................................12

12a.(11b) Foliage turning purple-brown in winter ...........................................eastern red-cedar
12b. Foliage remaining blue green in winter ...................................................Rocky Mountain juniper

13a.(7b) Peglike projections supporting needles; no resin blisters on bark ..................15
13b. Needles fastened directly to twig, leaving a circular leaf scar when removed; resin blisters on bark.................................................................14

14a.(13b) Needles sessile (no stalk attaching them to the twig); cones disintegrating when mature; buds blunt/resinous ............................................ balsam fir
14b. Needles petiolate; cones not disintegrating; papery bracts extending beyond cone scale; buds sharp-pointed, dark purple and not resinous ...................... Douglas fir

15a.(13a) Needles somewhat flattened, woody cones over 3” long ......................Norway spruce
15b. Needles 4 angled, not 2 ranked (not coming out in two planes, but come out in all directions around a twig); cones 3” long or less..................................16

16a.(15b) Needles very sharp; cones over 2” long with ragged scales ........ Colorado blue spruce
16b. Needles only moderately sharp; cones less than 2” long with smooth, rounded edge on cone scales .......................................................... Black Hills white spruce

17a.(1b) Vines ........................................................................................................18
17b. Trees, shrubs or herbs .................................................................................21

18a. Leaves compound ........................................................................................19
18b. Leaves simple................................................................................................20

19a.(18a) Leaves alternate; 5 leaflets; fruit a berry........................................... Virginia creeper
19b. Leaves opposite; 3 leaflets; fruit an achene (small, dry one seed fruit)...virgin’s bower

20a.(18b) Margin coarsely serrate; leaves sometimes lobed, fruit a black berry ..........wild grape
20b. Margin fine serrate, leaves never lobed; fruit orange, splitting to show red interior................................................................. bittersweet

21a.(17b) Shrubs or herbs less than 2’ high when mature ....................................22
21b. Shrubs or trees over 2’ high when mature ..................................................23
22a.(21a) Small serrate, herb-like; always 3 leaflets, not serrate but sometimes irregularly
toothed.....................................................................................................................poison ivy
22b. Perennial herb with 3-forked stem, each with 3 or 5 serrate leaflets.... wild sarsaparilla

23a.(21b) Leaves compound ............................................................................................24
23b. Leaves simple.............................................................................................................34

24a.(23a) Compact branchy shrubs with compound leaves; each leaflet 1/4” wide or less .......25
24b. Coarser shrubs or trees with pinnately compound leaves; each leaflet
over ¼” wide......................................................................................................................26

25a.(24a) Stipular (small growth at the base of the petiole) prickles present; fruit a pod ........
........................................................................................................................................pygmy peashrub
25b. No stipular spines; fruit globose (spherical); achene (small one seeded fruit) ........
........................................................................................................................................shrubby cinquefoil

26a.(24b) Branches with either stipular or corticular (tissue where the spines come from) spines
........................................................................................................................................27
26b. Branches without spines .........................................................................................28

27a.(26a) Spines stipular; fruit a pod; bark greenish ..............................................Siberian peashrub
27b. Spines corticular; fruit a fleshy hip, about ½” in diameter;
bark reddish or brownish .........................................................................................rose

28a.(26b) Leaves opposite....................................................................................................29
28b. Leaves alternate ........................................................................................................31

29a.(28) Palmate five-leaflet leaves; fruit a nutlike capsule ............................... Ohio buckeye
29b. Leaves not palmate; fruit not a nutlike capsule .......................................................30

30a.(29b) Leaves regularly serrate; twigs gray; buds brown; fruit (samara) ................. green ash
30b. Leaves irregularly toothed; twigs green or reddish brown with a bloom;
buds silvery; fruit (schizocarp) ....................................................................................boxelder

31a.(28b) Base of petiole encasing bud.............................................................................32
31b. Base of petiole below bud......................................................................................33

32a.(31a) Twigs hairy ........................................................................................................staghorn sumac
32b. Twigs glabrous (without hair, smooth) .................................................................smooth sumac

33a.(31b) Pith (center of twig) chambered; leaflets 3” long, 1 ½” wide............................black walnut
33b. Pith solid; leaflets 1 ½” long, ½” wide ..........................................................European mountain ash

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34a.(23b) Most or all leaves lobed.............................................................................................35
34b. Not lobed..................................................................................................................................43

35a.(34a) Leaves opposite..............................................................................................................36
35b. Leaves alternate .......................................................................................................................38

36a.(35a) Some leaves not lobed, when lobed always 3, a coarse shrub; fruit a drupe..................American cranberry bush
36b. All leaves lobed, 4 or 5, trees or shrubby trees; fruit a paired samara, Called a schizocarp (winged, samara-like fruits borne in pairs) ....................37

37a.(36b) Leaves silvery beneath; lobes of nearly equal length; a large tree ................silver maple
37b. Leaves not silvery beneath; terminal lobe longer than others; small tree or shrublike.......................amur maple

38.(35b) Trees......................................................................................................................................39

39a.(38a) Palmately lobed, white hairy below; bark greenish or gray...................... white poplar
39b. Pinnately lobed, not white hairy below......................................................................................40

40a.(39b) Bark white and papery.................................................................cutleaf weeping birch
40b. Bark dark and ridged..............................................................................................................bur oak

41a.(38b) Leaves 1” long, rhombic ovate to rhombic obovate; fruit a small capsule ........Vanhouotte spirea
41b. Leaves 2” or 3” long, variably orbicular, fruit a berry..............................................................42

42a.(41b) Stems spiny.................................................................gooseberry
42b. Stems not spiny......................................................................................................................currant

43a.(34b) Leaves silvery both sides .................................................................................................44
43b. Upper leaf surface not silvery..................................................................................................46

44a.(43a) Leaves opposite; fruit red when ripe........................................................silver buffaloberry
44b. Leaves alternate, fruit silvery when ripe......................................................................................45

45a.(44b) Petiole 1/8” long; leaves ovate, wavy-curled; fruit globose; shrubby ........ silverberry
45b. Petiole ½” long; leaves lanceolate, flat; fruit ellipsoidal; treelike ......................Russian olive

46a.(43b) Leaves opposite or sub-opposite.......................................................................................47
46b. Leaves alternate..............................................................................................................................53

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47a.(46a) Leaves sub-opposite; end of twig modified into a thorn.................................48
47b. Leaves opposite; twigs not thorny .................................................................49

48a. (47a) Leaves nearly as broad as long ...........................................common buckthorn
48b. Leaves over twice as long as broad...............................................................Dahurian buckthorn

49a.(47b) Leaves finely serrate, creased ..............................................................nannyberry viburnum
49b. Leaves entire, not creased ..............................................................................50

50a.(49b) Pith hollow; petioles less than ½” long.................................................51
50b. Pith solid; petioles ½” long or more ............................................................52

51a.(50a) Small native shrub; fruit white, twig reddish-brown.................................snowberry
52b. Large shrub; fruit orange or red; twigs tan, hollow pith......................Tatarian honeysuckle

52a.(50b) Twigs bright red; venation arcuate; fruit a white drupe...............redosier dogwood
52b. Twigs a greenish or brownish; venation netted; fruit a capsule............lilac

53a.(46b) Trees ........................................................................................................54
53b. Shrubs ............................................................................................................69

54a.(53a) Leaves conspicuously heart shaped; fruit a nutlet suspended
from a bract..............................American linden (basswood)
54b. Leaves not so; fruit not so..............................................................................55

55a.(54b) Bark white; peeling horizontally, marked by horizontal lenticels ........56
55b. Bark not so ....................................................................................................57

56a.(55a) Non-native tree; branches pendulous (hanging down)........cutleaf weeping birch
56b. Native tree; branches not pendulous ..............................................................paper birch

57a.(55b) Petioles flattened, about as long as a leaf blade.................................58
57b. Petioles round, less than ¾ as long as leaf blade .......................................59

58a.(57a) Leaves deltoid; bark dark and rough..............................................cottonwood
58b. Leaves oval orbicular, bark light and smooth ...........................................quaking aspen

59a.(57b) Leaves lanceolate; buds with single caplike scale ..................willow
59b. Leaves broader; buds with several imbricate scales ..................................60

60a.(59b) Twigs usually with definite thorns; leaves prominently doubly serrate ....hawthorn
60b. Twigs without definite thorns; if tree somewhat thorny, leaves singly serrate ....61
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<th>Step</th>
<th>Description</th>
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<td>61a.</td>
<td>Leaf apex rounded; leaf shape oval; leaf base entire .......................... Juneberry</td>
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<tr>
<td>61b.</td>
<td>Leaf apex pointed; leaf shape ovate, obovate, elliptical; serrate to base of leaf ........</td>
</tr>
<tr>
<td>62a.</td>
<td>Leaves 2 ranked (appearing to come from only two sides of the twig) ..................</td>
</tr>
<tr>
<td>62b.</td>
<td>Leaves not 2 ranked (coming out in all directions from a twig) ........................</td>
</tr>
<tr>
<td>63a.</td>
<td>Pith chambered at nodes; fruit a drupe .................................................. common hackberry</td>
</tr>
<tr>
<td>63b.</td>
<td>Pith not chambered; fruit a spring ripening samara .....................................</td>
</tr>
<tr>
<td>64a.</td>
<td>Leaves over 2” long, dull above; twigs coarse ........................................... American elm</td>
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<tr>
<td>64b.</td>
<td>Leaves 2” long or less; shiny above; twigs fine ......................................... Siberian elm</td>
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<tr>
<td>65a.</td>
<td>Buds large and gummy; leaves gray or rusty below ....................................... balsam poplar</td>
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<tr>
<td>65b.</td>
<td>Buds not so; leaves not so ...........................................................................</td>
</tr>
<tr>
<td>66a.</td>
<td>Bark and twigs light brown; twigs coarse; fruit a pome ................................. crabapple</td>
</tr>
<tr>
<td>66b.</td>
<td>Bark and twigs a reddish or gray; twigs fine; fruit a drupe .............................</td>
</tr>
<tr>
<td>67a.</td>
<td>Serrations glandular tipped; bark reddish; central stem noticeable ............... pin cherry</td>
</tr>
<tr>
<td>67b.</td>
<td>Serrations without glands; bark gray; branchy crown ...................................</td>
</tr>
<tr>
<td>68a.</td>
<td>Petiole hairy; veins prominent; some short twigs thornlike ......................... American plum</td>
</tr>
<tr>
<td>68b.</td>
<td>Petiole glabrous; veins not prominent; not thornlike .................................. chokecherry</td>
</tr>
<tr>
<td>69a.</td>
<td>Leaves doubly-serrate; fruit an involucres (husk) bearing a nut ....................</td>
</tr>
<tr>
<td>69b.</td>
<td>Leaves not doubly-serrate; fruit a drupe or pome ......................................</td>
</tr>
<tr>
<td>70a.</td>
<td>Petiole hairy; fruit husk without beak .................................................. American hazelnut</td>
</tr>
<tr>
<td>70b.</td>
<td>Petiole glabrous (without hair, smooth); fruit husk with a long beak . . beaked hazelnut</td>
</tr>
<tr>
<td>71a.</td>
<td>Dark green entire elliptic – ovate glossy leaves; insignificant pinkish-white flowers; black pea-sized pomes (fleshy fruit with a core) ....................... hedge cotoneaster</td>
</tr>
<tr>
<td>71b.</td>
<td>Gray-green, serrate, narrowly elliptical leaves; white flowers showy; purple cherry-like drupes ........................................................ sandcherry</td>
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</tbody>
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