

**Key to *Juniperus* of Canada and the United States rev. 8-1-08**

- 1a. Leaves all acicular (subulate, jointed at the base) and spreading; seed cones sessile, axillary; decumbent or rarely upright shrubs (in the western hemisphere).....***J. communis***
- 1b. Leaves decurrent (not jointed at the base), both whip- and scale-like; seed cones terminal; trees or decumbent to upright shrubs.
  - 2a. Whip- and scale-leaf margins entire (20 X) or with irregular teeth (40 X) and then with scale-leaves with acuminate to mucronate tips and tan-brown to brownish purple seed cones.
    - 3a. Whip- and scale-leaf margins with irregular teeth (40 X), scale-leaves acuminate; seed cones (4-) 6-10 (-13) seeded, and tan-brown to brownish-purple; branches pendulous (weeping).....***J. flaccida***
    - 3b. Whip- and scale-leaf margins smooth (entire) (40 X), scale-leaves obtuse to acute to apiculate; seed cones 1-2(3) seeded, blue-black to brownish-blue when mature; branches not drooping (but ultimate branchlets are often flaccid).
      - 4a. Prostrate to decumbent shrub; scale-leaves apiculate; both whip- and scale-leaves growing along the branchlets; peduncles generally curved.....***J. horizontalis***
      - 4b. Tree with 1(2-3) stems and rounded, flattened, pyramidal, or strict crowns; scale-leaves obtuse to acute; whip-leaves growing only at branchlet tips (on mature trees); peduncles generally straight.
        - 5a. Scale-leaves not overlapping, or, if so, not by more than 1/5 the length, obtuse to acute; seed cones globose to reniform
          - 5.1a. Twigs (3-5 mm dia.) with smooth bark, twigs (6-15 mm dia.) with bark exfoliating in plates, reddish-copper beneath; seed cones maturing in 2 yrs, most seed cones normal, rarely with exserted seeds.....***J. scopulorum***
          - 5.1b. Twigs (3-5 mm dia.) with persistent dead whip-leaves, twigs (6-15 mm dia.) reddish-brown beneath; seed cones maturing in 1 yr. (14-16 mos.), often the seed cones with exserted (naked) seeds; Pacific northwest near the seaside or nearby dry mountains in Georgia Straits and Puget Sound.....***J. maritima***
        - 5b. Scale-leaves overlapping (more than 1/4 length) acute; twigs (3-5 mm dia.) with persistent dead whip-leaves, twigs (6-15 mm dia.) with bark not exfoliating in plates, or, if so, brownish beneath; seed cones maturing in 1 yr...  
.....***J. virginiana***
- 2b. Whip- and scale-leaf margins denticulate (20 X).
  - 6a. Seed cones with (3-) 4 - 5 (-6) seed, fibrous to obscurely woody, trunk bark exfoliating in square or quadrangular plates (except. in f. *sperryi* with bark that exfoliates in strips)  
.....***J. deppeana***
  - 6b. Seed cones 1 - 2 (-3) seeded, fleshy to fibrous (when mature and fresh)
    - 7a. Scale-leaves with a raised hemispherical gland, whip-leaves with raised hemispherical gland (var. *ashei*) or oval, raised gland (var. *ovata*), dark brownish-green on dark grayish-green mature leaf; angle of branching of ultimate twig 25-40 degrees, bark on branches with patches of white fungus.....***J. ashei***
    - 7b. Scale-leaves without a raised hemispherical gland
      - 8a. Mature seed cones orange, reddish-orange, red, bronze, or reddish-brown, appearing pink or rose-color if covered with bloom.
        - 9a. Mature seed cones orange to red, with light bloom appearing pink or rose-colored; whip-leaf ventral side white-glaucous, glands on whip-leaves visible, raised, elongated and divided (often 3 glands); often single stemmed shrub-trees with stocky, clumpy foliage

- 9.1a. Shorter whip-leaf glands, half or less as long as the associated sheath .....***J. arizonica***
- 9.1b. Longer whip-leaf glands, more than half as long as the associated sheath .....***J. coahuilensis***
- 9b. Mature seed cones copper to reddish-brown, with no bloom; whip-leaf ventral side not white-glaucous, glands on whip-leaves visible, raised, oval, not divided; shrubs with elongated terminal whips .....***J. pinchotii***
- 8b. Mature seed cone dark blue, dark bluish-black to bluish-brown, with a light to heavy coat of bloom (waxy glaucous) appearing light blue.
- 10a. Glands on scale-leaves visible (conspicuous) and ruptured.
  - 11a. Seed cones 7-10 mm long; maturing in 2 yrs., 2(3) seeded; bark on twigs (5-10 mm diam.) reddish and exfoliating in scales or flakes; single stemmed tree to 20 (-30)m, dioecious or monoecious.
    - 11.1a. Trunk bark red-brown; seeds cones avg. 7.7 mm (5-9); approx. 95% of the plants dioecious, leaf glands usually not ruptured, if ruptured with clear to light yellow exudate.....***J. grandis***
    - 11.1b. Trunk bark brown; seeds cones avg. 8.5 mm (7-10); approx. 50% of the plants dioecious, leaf glands ruptured with yellow exudate turning dark brown to black.....***J. occidentalis***
  - 11b. Seed cones 6-10 mm long, maturing in 1 yr., 1 (-2) seeded, bark on trigs brown to ash, not exfoliating in scales or flakes, shrubs to small trees, mostly dioecious.
  - 12a. Seed cones with a fibrous to woody pericarp, (7-) 9-10 (-13) mm. diam., bluish-brown under glaucous, 1 (-2) seeded; dioecious (1.9% monoecious), branchlets approx. as wide as scale-leaf length; scale-leaves closely appressed and generally flattened, branchlets terete.....***J. californica***
  - 12b. Seed cones with a soft, juicy pericarp, 6-8 mm diam., reddish-blue to brownish-blue, globose to ovoid, scale-leaf glands barely visible not conspicuous, few (less than 1/5) of the whip-leaf glands with a white crystalline exudate (visible without a lens), ultimate twigs 1.3-1.5 mm wide.....***J. monosperma***
- 10b. Glands on scale-leaves not conspicuous (embedded in the leaf, therefore not visible), plants monoecious, ultimate twigs 1.3-1.5 mm wide, seed cones bluish brown, very glaucous, 8-9 mm diam., 1-seeded .....***J. osteosperma***