

Libocedrus bidwillii

COMMON NAMES

pāhautea, kaikawaka, New Zealand cedar

BIOSTATUS

Native

CATEGORY

Vascular

STRUCTURAL CLASS

Trees & Shrubs - Gymnosperms

FLOWER COLOURS

No flowers

DETAILED DESCRIPTION

Tree 25–(30) m tall and 1.0–1.5 m d.b.h., or a shrub in open conditions, evergreen, monoecious. **Bark** thin, scaly, greyish-brown, exfoliating in longitudinal strips. **Branches** long, spreading or ascending, arranged in dense tufts above each other, forming a pyramidal crown in young trees, conical or irregular with a clear bole in old trees. **Foliage** flattened sprays in young trees, in old trees more irregular and ascending, ultimate branchlets subopposite to alternate, 5–40 mm long, entirely covered with leaves, changing with age of plant from flattened to ± quadrangular, persistent. **Leaves** decussate, on lateral branchlets, short, decurrent, imbricate, dimorphic in young trees, facials small, rhombic, 1.5–2.0 × 1.0 mm, apiculate to acute, appressed, partly covered at base by larger 2.0–6.0 × 1.5–2.5 mm, divergent, bilaterally flattened, slightly curved laterals with entire margins and free apices, leaves on mature trees smaller, nearly monomorphic; amphistomatic, stomata on facials at base, on laterals much reduced on adaxial side, abaxially in a short, conspicuous band of irregularly but densely arranged stomata, adaxially dull dark green or yellow-green with whitish-green stomatal band, bearing a single resin cavity, eglandular. **Pollen cones** terminal, solitary, 2.5–5.0 mm, subglobose to ovoid, yellowish-green maturing light brown; microsporophylls decussate, 8–14, peltate, margins entire, bearing 4 abaxial yellow, microsporangia containing spherical pollen. **Seed cones** terminal on branchlets with monomorphic leaves of equal size, initially consisting of 2 decussate pairs of acute, 3–4 mm long, spreading bracts subtended by 4–5 similar but gradually smaller leaf pairs, the upper pair developing within one growing season to become thinly woody, together forming a cone 8–12 mm long. **Bract-scale complexes** 7–10 mm long, ± finely rugose, recurved in upper half above the abaxially exerting bract, subtended by the lower, smaller (3–4 mm long) less modified pair. **Ovules** 4, erect, alternating with each fertile bract. **Seeds** 2–4, 2–3 mm long, ovoid, flattened, with an acute apex, brown, with a whitish hilum and 2 opposite, thin, unequal, membranous wings, smaller 1 mm wide, larger, irregularly oval-oblong, 4–5 × 2.3 mm, yellowish brown. **Cotyledons** 2, juveniles leaves only on seedlings, ± acicular, on lower stem in whorls of 4 but soon decussate, bilaterally flattened, acuminate, the facials only slightly smaller, transitional leaves prevalent through much of life of young trees.



Juvenile foliage, Dunedin. Photographer: John Barkla, Licence: CC BY.



Libocedrus bidwillii bark. Photographer: John Barkla, Licence: CC BY.

SIMILAR TAXA

Easily distinguished from kawaka (*Libocedrus plumosa*) by the ultimate branches ± quadrangular rather than flattened, by the facial leaves only slightly smaller than lateral leaves (< ½ the size of the laterals in *L. plumosa*); and by the free part of the bract ⅓ the size of the cone scale beyond which it does not extend, rather than half the size of the cone scale and exceeding beyond it.

DISTRIBUTION

Endemic. New Zealand: North Island (from Te Moehau, Te Aroha and Mt Pirongia south) and South Island.

HABITAT

Montane to subalpine (250–1200 m.a.s.l.) but exclusively upper montane in northern part of range. Usually in mixed cloud forest, often at the margins where forest grades into subalpine scrub or wetlands. This species seems to prefer regions of moderate to high rainfall and long periods of cloud cover.

CURRENT CONSERVATION STATUS

2023 | Not Threatened

DETAILED TAXONOMY

FAMILY

Cupressaceae

AUTHORITY

Libocedrus bidwillii Hook.f.

SYNONYMS

None

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

ECOLOGY

FLOWERING

August–November

FRUITING

August–July

PROPAGATION TECHNIQUE

Easily grown from fresh seed. Can be grown from hard wood cuttings but these are often slow to take and results variable. Does best in a deep, well mulched, moist, fertile soil. Makes an excellent specimen tree. *Libocedrus bidwillii* is however, better suited to cooler climates. It does not like drought or humidity.

WETLAND PLANT INDICATOR STATUS RATING

FAC: Facultative

Commonly occurs as either a hydrophyte or non-hydrophyte (non-wetlands).

OTHER INFORMATION

ETYMOLOGY

libocedrus: Frankincense cedar

bidwillii: Named after the botanist - John Carne Bidwill (born 1815 and died 16 March 1853)

NVS CODE

LIBBID

CHROMOSOME NUMBER

2n = 22

PREVIOUS CONSERVATION STATUSES

2017 | Not Threatened

2012 | Not Threatened

2009 | Not Threatened

2004 | Not Threatened

REFERENCING AND CITATIONS

REFERENCES AND FURTHER READING

Farjon A. 2005. A monograph of Cupressaceae and Sciadopitys. Royal Botanic Gardens, Kew, UK. ISBN 1842460684. 643 p.

ATTRIBUTION

Fact sheet prepared for NZPCN by P.J. de Lange (13 January 2012). Description adapted from Farjon (2005).

NZPCN FACT SHEET CITATION

Please cite as: de Lange, P.J. (Year at time of access): *Libocedrus bidwillii* Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. <https://www.nzpcn.org.nz/flora/species/libocedrus-bidwillii/> (Date website was queried)

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/libocedrus-bidwillii/>

PDF DATE

12 October 2024