

Kunzea tenuicaulis

COMMON NAME

geothermal kānuka

SYNONYMS

Leptospermum ericoides var. *microflorum* G.Simpson; *Kunzea ericoides* var. *microflora* (G.Simpson) W.Harris

FAMILY

Myrtaceae

AUTHORITY

Kunzea tenuicaulis de Lange

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Trees & Shrubs - Dicotyledons

NVS CODE

KUNEVM

CHROMOSOME NUMBER

2n = 22

CURRENT CONSERVATION STATUS

2017 | Threatened – Nationally Endangered | Qualifiers: DP, RR

PREVIOUS CONSERVATION STATUSES

2012 | At Risk – Naturally Uncommon | Qualifiers: RR

2009 | At Risk – Naturally Uncommon

2004 | Range Restricted

BRIEF DESCRIPTION

Shrubs or small much branched trees inhabiting geothermal areas of the Taupo Volcanic Zone. Bark loose, flaking readily. Branches sinuous curved, slender. Branchlets numerous, slender, often pendulous, young stems copiously covered in short erect hairs. Leaves numerous, up to 10 mm long (usually much less). Flowers white, up to 9 mm diameter, borne in dense clusters. Fruit a small dry capsule 1.0–3.3 × 1.6–3.2 mm.

DISTRIBUTION

Endemic. New Zealand: North Island (Central Volcanic Field from Kawerau south to Tokaanu on the southern side of Lake Taupo).

HABITAT

Kunzea tenuicaulis is one of the dominant shrubs or small trees inhabiting active geothermal fields and the ground in the immediate vicinity of these.

WETLAND PLANT INDICATOR STATUS RATING

FACU: Facultative Upland

Occasionally is a hydrophyte but usually occurs in uplands (non-wetlands).



Craters of the Moon. Photographer: John Smith-Dodsworth, Licence: CC BY-NC.



At Craters of the Moon (September).
Photographer: John Smith-Dodsworth, Licence: CC BY-NC.

DETAILED DESCRIPTION

Decumbent, trailing subshrubs, shrubs or small trees 0.1–8.0 × 2.0–8.0 m. For those specimens with a tree habit, crown widely spreading, often arching to pendulous. For those specimens found around active fumaroles or on open, geothermally heated ground, growth habit varying from completely decumbent and densely branched, with stems sprawling across ground, to semi-erect, densely branched, widely spreading, often pendulous. **Trunk** in tree forms 0.1–0.6 m d.b.h., at first erect, soon widely spreading and curving to somewhat sinuous, branching close to base, thinning in close canopies only; in decumbent plants trunk virtually indistinguishable, trailing to semi-erect, curved and somewhat sinuous. **Bark** greyish brown to brown, initially firm, elongate, over time cracking transversely with margins gradually detaching and rolling-in, upper bark surface often with much secondary peeling and transverse cracking. **Branches** narrow, long, flexuous, in decumbent plants prostrate, trailing, widely spreading, and arching, pendulous; branchlets slender, leafy; indumentum dense, hairs divergent, 0.03–0.08 mm. **Leaves** heterophyllous, seedling and subadult leaves 0.9–4.5 × 0.2–0.6 mm, red-green or bright green; lamina finely linear-lanceolate, long persistent in stressed habitats; adult leaves 1.1–10.0 × 0.8–2.8 mm, dark glossy green, to bronze-green, oblanceolate, obovate to obovate-rostrate; usually recurved from about ½ of total length, apex obtuse, rounded, rarely subacute, cuspidate; base attenuate; lamina margin sparsely to densely, finely sericeous; hairs appressed to weakly spreading, white, aligned in 1 row not quite meeting at cuspidate leaf apex. **Inflorescence** a compact, 1–10-flowered corymbiform botryum up to 25 mm long; axis densely invested with divergent hairs. **Pherophylls** deciduous, 0.5–1.0 mm long, initially foliose soon squamiform; foliose pherophylls pale green, oblong, oblong-obovate to oblanceolate; squamiform pherophylls brown or pink, broadly deltoid to oblong-ovate, glabrous except for the finely ciliate margin and apex. **Pedicels** 1.0–2.4 mm long at anthesis, finely hairy. **Flower buds** clavate to pyriform, apex distinctly domed prior to bud burst, calyx valves ± meeting. **Flowers** 3.3–9.0 mm diam. **Hypanthium** 1.8–3.3 × 1.7–3.1 mm, dark green often basally mottled red, drying brown to grey; narrowly cupular to campanulate terminating in a slightly thicker rim bearing five persistent calyx lobes; surface smooth, puberulent. **Calyx lobes** 5, upright, 0.4–0.8 × 0.4–1.0 mm, oblong, oblong-ovate to broadly triangular, ± subtended by a faint to prominent groove at the external junction with the hypanthium. **Receptacle** green or pale pink at anthesis, darkening to crimson-red or magenta after fertilisation. **Petals** 5–6, 1.4–2.0 × 1.4–2.0 mm, white, pinkish white, or pink, orbicular, cuneate, apex obtuse to rotund, oil glands not evident when fresh, drying colourless. **Stamens** 10–32 in 1–2 weakly defined whorls, filaments white tinged rose-pink toward base. **Anthers** 0.04–0.08 × 0.02–0.04 mm, testiculate, latrorse. **Pollen** white. **Anther connective gland** prominent, orange when fresh, drying pale brown, spheroidal, distinctly papillate. **Ovary** 3–5 locular, each with 15–22 ovules in two rows on each placental lobe. **Style** 2.0–3.6 mm long, white; stigma capitate, scarcely wider than style, pale cream to pink, surface papillate to rugulose. **Fruits** ± persistent, 1.0–3.3 × 1.6–3.2 mm, light brown to grey, usually barrel-shaped, rarely cupular. **Seeds** 0.80–1.00 × 0.45–0.50 mm, narrowly oblong, oblong, oblong-obovate to falcate-oblong, orange-brown, surface coarsely reticulate.

MANAAKI WHENUA ONLINE INTERACTIVE KEY

Key to the Myrtaceae of New Zealand

SIMILAR TAXA

From all the other New Zealand members of the *K. ericoides* complex, *K. tenuicaulis* is consistently distinguished by its slender, twiggy branchlets, grey bark flaking into small irregular shards, early flowering, and ecology.

FLOWERING

August–January

FLOWER COLOURS

White

FRUITING

December–February

PROPAGATION TECHNIQUE

Easily grown from fresh seed. Can be grown with extreme difficulty from semi-hardwood and hardwood cuttings.

THREATS

It had been assessed as 'At Risk – Naturally Uncommon' because of its virtual restriction to active/senescent geothermal fields and their immediate environs. Hybridism might be a threat in some populations abutting urban areas, e.g., Taupo. Certainly hybrids are locally common in the Rotorua area, reflecting perhaps, the extensive volcanic and human-induced disturbance of that region.

When myrtle rust (*Austropuccinia psidii*) was detected in New Zealand (May 2017) the conservation status was upgraded as a precautionary measure to 'Threatened – Nationally Endangered' because, on best advice, it was believed that no indigenous Myrtaceae had resistance to the myrtle rust disease (de Lange et al. 2018). Currently there have been no reports of infected wild trees of *Kunzea* but inoculation trials of the New Zealand species has demonstrated they are susceptible and that, over time, infected specimens will die. Only time will tell if wild populations of *Kunzea* will be threatened by this rust fungus.

Myrtle rust (*Austropuccinia psidii*) is an invasive fungus that threatens native myrtle species. Learn more myrtlerust.org.nz.

ETYMOLOGY

kunzea: Named after Gustav Kunze (4 October 1793, Leipzig –30 April 1851), 19th century German botanist from Leipzig who was a German professor of zoology, an entomologist with an interest mainly in ferns and orchids

tenuicaulis: Thin stalk

WHERE TO BUY

Occasionally sold in garden centres, usually under the name *Kunzea ericoides* var. *microflora*. In particular an off-pink colour variant (cv. cherise) is often sold.

TAXONOMIC NOTES

Kunzea tenuicaulis was described at the rank of species by de Lange (2014). This species is probably the same as the earlier named *Kunzea ericoides* var. *microflora* but the type of that variety was based on cultivated material, whose provenance is ambiguous (de Lange 2014). Also the type collection of that variety is in poor condition and, as the protologue describing that variety was at odds with subsequent interpretations of where the garden plants really came from, de Lange (2014) preferred to start afresh at the rank of species with a new unambiguous, wild collected type specimen. *Kunzea ericoides* var. *microflora* is therefore a heterotypic synonym of *K. tenuicaulis*. Genetically *Kunzea tenuicaulis* is the most distinct of New Zealand's 10 *Kunzea* species (de Lange et al. 2005; de Lange et al. 2010).

ATTRIBUTION

Fact Sheet prepared for NZPCN by P.J. de Lange 25 August 2014. Description modified from de Lange (2014).

REFERENCES AND FURTHER READING

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NZPCN FACT SHEET CITATION

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MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/kunzea-tenuicaulis/>