

# Kunzea toelkenii

## COMMON NAME

Bay of Plenty kānuka

## SYNONYMS

None - first described in 2014

## FAMILY

Myrtaceae

## AUTHORITY

*Kunzea toelkenii* de Lange

## FLORA CATEGORY

Vascular – Native

## ENDEMIC TAXON

Yes

## ENDEMIC GENUS

No

## ENDEMIC FAMILY

No

## STRUCTURAL CLASS

Trees & Shrubs - Dicotyledons

## CHROMOSOME NUMBER

2n - 22

## CURRENT CONSERVATION STATUS

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

## PREVIOUS CONSERVATION STATUS

2013 | Threatened – Nationally Vulnerable

## BRIEF DESCRIPTION

Shrubs of small trees of active sand country; bearing numerous trunks, these much-twisted; base of trunks often suckering, suckering growth trailing. Branches often pendulous, very leafy, bearing clusters of small white flowers. Branchlet hairs in mixtures on long appressed and short erect. Leaves 2.6–8.5 × 0.6–2.5 mm. Flowers borne in 'corymbiform' clusters, white with a red centre—late season flowers often male. Fruit a small dry capsule 2.1–3.0 × 2.5–3.7 mm.

## DISTRIBUTION

Endemic. New Zealand: North Island (Bay of Plenty near Thornton and on islands of the Ohiwa Harbour, formerly from Papamoa to Thornton and Ohiwa Harbour).

## HABITAT

Active sand dunes.



Fruit. Whakatane (from a specimen collected by Jacqui Bond). Photographer: Jeremy R. Rolfe, Date taken: 22/01/2018, Licence: CC BY.



Fruit. Whakatane (from a specimen collected by Jacqui Bond). Photographer: Jeremy R. Rolfe, Date taken: 22/01/2018, Licence: CC BY.

## DETAILED DESCRIPTION

Shrubs up to 4 × 6 m; 'juveniles' usually prostrate and trailing up to 4 m diameter, often flowering, eventually developing several, central, ascending branches; 'adults' forming widely spreading (up to 2 m diam.), flat-topped shrubs, with pendulous branches and branchlets; trunk bases usually bearing epicormic, prostrate growth spreading up to 4 m diam. **Trunk** 1–10, ascending to suberect, highly contorted, twisted, bent, and spiralled, 0.10–0.40 m d.b.h.; mostly arising from the top of a broad rootstock. **Bark** coriaceous, grey or grey-brown, ± elongate, cracking into highly irregular pieces with rather sinuous margins; detaching inwards. **Branches** numerous, widely spreading, ± serpentine, flexuose, pendulous and interwoven; branchlets numerous, slender, pendulous, leafy; those of epicormic growth, straight, prostrate or pendulous if arising from basal half of trunk; indumentum copious; hairs of two types: long, appressed, flexuose to 0.26 mm long, and smaller divergent hairs, with curled and spiralled apices 0.04–0.18 mm. **Leaves** with lamina 2.6–8.5 × 0.6–2.5 mm, dark glossy green or bright-green, obovate, clavate, to broadly oblanceolate; apex sharply acute to apiculate, base attenuate; glabrous; lamina margin finely to densely sericeous, hairs weakly flexuose, to 0.5 mm long, aligned in 1–2 uninterrupted rows meeting just short of leaf apiculus. **Inflorescence** 1–10-flowered corymbiform botryum up to 40 mm long; inflorescences at the ultimate branchlet terminus uncommon (except in trailing epicormic growth), these elongated (up to 80 mm long) bearing well developed terminal vegetative growth, often with the uppermost flowers male. **Pherophylls** deciduous, initially foliose, soon squamiform, 0.4–1.6 mm long, foliose pherophylls green to bronze-green, shortly lanceolate to obovate, squamiform pherophylls amber-brown to brown, narrowly deltoid to ovate. **Pedicels** 1.6–3.8 mm long copiously invested with short, divergent to subantrorse, silky hairs. **Flower buds** bluntly clavate to obconic, rarely pyriform, apex flat prior to bud burst with calyx valves not meeting. **Flowers** 3.6–9.0 mm diam., often functionally male toward end of flowering season. **Hypanthium** 1.7–3.2 × 2.8–4.3 mm, green, dark green or red-green; obconic to funneliform, bearing five persistent calyx lobes; surface smooth, finely and rather densely puberulent; hairs silky. **Calyx lobes** 5, upright, 0.8–1.2 × 0.7–1.2 mm, persistent, ovate, broadly ovate to ovate-deltoid, glabrous except for ciliate margins. **Receptacle** pink at anthesis, darkening dark magenta or maroon-black at fertilisation. **Petals** 5–6, 1.5–2.8 × 1.5–2.6 mm, white, orbicular to very broadly ovate, apex obtuse to rotund, margins ± entire, oil glands colourless. **Stamens** 20–50 in 1–3 weakly defined whorls, filaments white. **Anthers** dorsifixed, 0.06–0.09 × 0.05–0.08 mm, testicular-oval to testicular-ellipsoid, latrorse. **Pollen** white. **Anther connective gland** prominent, pale lemon to pink when fresh, drying yellow to pale orange, spheroidal, finely papillate. **Ovary** absent in males flowers, 3–5 locular, each with 12–24 ovules in two rows on each placental lobe. **Style** absent in male flowers, 1.0–1.8 mm long, white; stigma capitate, scarcely wider than style, flat, greenish-white, cream or pale pink, surface papillate. **Fruits** 2.1–3.0 × 2.5–3.7 mm, light brown to grey, obconic, broadly obconic, to cupular. **Seeds** 0.50–1.02 × 0.52–0.68 mm, oblong, oblong-obovate, testa semi-glossy, amber, orange-brown to brown, surface coarsely reticulate.

## MANAAKI WHENUA ONLINE INTERACTIVE KEY

Key to the Myrtaceae of New Zealand

## SIMILAR TAXA

*Kunzea toelkenii* is recognised by its uniquely suberect, sprawling growth habit, typically extensive suckering, by its mixed branchlet hairs, tendency to produce late season functionally male flowers, and also by its restriction to active sand dunes. Further differences are given by de Lange (2014).

## FLOWERING

September–November

## FLOWER COLOURS

White

## FRUITING

October–September

## PROPAGATION TECHNIQUE

Easily grown from fresh seed. Can also be grown—with difficulty—from semi-hardwood and hardwood cuttings. Like all New Zealand *Kunzea*, this species prefers an open site, in full sun, planted in well drained soil.

## THREATS

As *Kunzea* aff. *ericoides* (a) (AK 255350; Thornton) *Kunzea toelkenii* was listed by the New Zealand Threatened Vascular Plant Panel (de Lange et al. 2013b) as 'Threatened – Nationally Vulnerable', qualified 'Range Restricted (RR)'. For a detailed assessment of this listing see de Lange (2014). When myrtle rust (*Austropuccinia psidii*) was detected in New Zealand (May 2017) the conservation status was upgraded as a precautionary measure to 'Threatened – Nationally Critical' 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 further 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](http://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

**toelkenii:** The epithet 'toelkenii' honors Australian botanist Hellmut R. Toelken (1939–) whose preliminary investigation of the *Kunzea ericoides* complex established that the species was a New Zealand endemic and worthy of further taxonomic segregation.

## NOTES

de Lange (2014) attributed the discovery of *Kunzea toelkenii* incorrectly—the species was first recognised as potentially distinct by Beadel (1985, 1987).

## ATTRIBUTION

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

## REFERENCES AND FURTHER READING

Beadel SM. 1985. The vegetation of the Coastal Reserves between Golf Links Road (Rangitaiki Plains) and Otaramakau, Whakatane District. Prepared for D.J. Shaw Associates, Resource Management, Research, Planning Consultants, Rotorua. 25 p.

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## NZPCN FACT SHEET CITATION

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

## MORE INFORMATION

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