

# Kunzea triregensis

## COMMON NAME

Three Kings kānuka

## SYNONYMS

None - first described in 2014

## FAMILY

Myrtaceae

## AUTHORITY

*Kunzea triregensis* 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, IE

## PREVIOUS CONSERVATION STATUS

2013 | At Risk – Naturally Uncommon

## DISTRIBUTION

Endemic. New Zealand: Manawatāwhi / Three Kings Islands (Manawatāwhi / Great Island, Moekawa / South West Island, Ōhau / West Island, Oromaki / North East Island)

## HABITAT

Coastal forest—on Manawatāwhi / Great Island forms the dominant tree canopy.



In cultivation ex Manawatāwhi/Great Island, Manawatāwhi/Three Kings Islands.

Photographer: Jeremy R. Rolfe, Date taken: 19/07/2007, Licence: CC BY.



In cultivation ex Manawatāwhi/Great Island, Manawatāwhi/Three Kings Islands.

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## DETAILED DESCRIPTION

Shrubs or trees up to 18 × 3 m. Trunk 1–4, 0.10–0.85 m d.b.h. **Bark** grey or grey-brown, ± elongate, tessellated, usually bearing a few transverse cracks, firmly attached, detaching basally with age, and peeling upwards along trunk in broad, tabular strips. **Branches** numerous; upright to somewhat spreading; branchlets numerous, slender; branchlets sericeous, indumentum copious; hairs long appressed, usually flexuose (220)–480–(520) µm long. **Leaves** sessile; lamina 6.0–13.5 × 1.1–2.3 mm, dark glossy green above, paler beneath with leaf margins and midrib appearing distinctly white because of dense hair growth; lamina lanceolate to narrowly lanceolate; usually strongly recurved for about half of total length; apex acute to narrowly acute, base attenuate; lamina margin completely obscured by dense covering of antrorse-appressed hairs aligned in a thick, up to 0.6 mm wide, almost plumose, white band meeting at leaf apex. **Inflorescence** an elongated 3–20-flowered botryum up to 200 mm long, basal portion sometimes bearing compact, lateral 3-flowered corymbiform botrya, or with the basal and terminal portions occasionally bearing lateral elongate botrya; distal portions often interrupted by sections of leafy perules between which are spaced further flowers; or interrupted by short floral shoots bearing elongated 3–6-flowered botrya up to 20 mm long; terminal portion often bearing undeveloped flowers and vegetative terminal growth. Inflorescence axis densely invested in antrorse-appressed, weakly flexuose, hairs.

**Pherophylls** persistent, foliose, 6.0–12.8 × 0.9–2.2 mm, dark glossy green, elliptic, broadly lanceolate to lanceolate; apex acute, base attenuate; lamina margin obscured by dense covering of antrorse-appressed, silky hairs. **Pedicels** subsessile to pedicellate 0.4–3.7 mm long copiously invested in antrorse-appressed, weakly flexuose, silky hairs.

**Flower buds** double-conic to ovoid, calyx lobes prior to bud burst held flat or suberect with lobes ± meeting. **Flowers** 6.3–12.3 mm diameter.

**Hypanthium** 1.6–4.4 × 2.0–4.6 mm, dark green or red-green; hemispherical to broadly obconic, sometimes campanulate or rarely cupular, densely to sparsely covered in silky, appressed antrorse hairs.

**Calyx lobes** 5, erect, 0.5–1.3 × 0.3–0.8 mm, deltoid to ovate-deltoid, green to red-green; margins pale green often flushed pink, glabrescent.

**Receptacle** green at anthesis, darkening to crimson after fertilisation.

**Petals** 5–6, 1.3–4.3 × 1.9–4.8 mm, white, orbicular to broadly ovate, apex rounded, margins ± finely and irregularly denticulate, oil glands colourless.

**Stamens** 30–53 in 1–3 weakly defined whorls, filaments white. **Anthers** dorsifixed, 0.05–0.10 × 0.06–0.08 mm, testicular-ellipsoid, latrorse. **Pollen** white. **Anther connective gland** prominent, pink or golden-yellow when fresh, drying yellow to pale orange, spheroidal, finely to coarsely papillate.

**Ovary** 4–5 locular, each with 20–38 ovules in two rows on each placental lobe. **Style** 1.9–3.1 mm long, white or pinkish-white; stigma broadly capitate, wider than style, ± flat, greenish-white or pale pink, flushing red after anthesis, surface granular-papillate. **Fruits** 1.9–5.2 × 2.0–4.9 mm, dark chestnut-brown, maturing grey, hemispherical, broadly obconic, campanulate to cupular. **Seeds** 0.50–1.10 × 0.50–0.80 mm, oblong, oblong-obovate; testa semi-glossy, orange-brown to dark brown; surface coarsely reticulate.

## MANAAKI WHENUA ONLINE INTERACTIVE KEY

Key to the Myrtaceae of New Zealand

## SIMILAR TAXA

Morphologically *Kunzea triregensis* is mostly likely to be confused with *Kunzea amathicola* and *K. linearis* (de Lange 2014). In particular the distinctive elongate botrya of *K. triregensis* is seen otherwise only in *K. amathicola*, a species from which *K. triregensis* differs by its homophyllous growth habit, and lanceolate to narrowly lanceolate leaves. The peculiar ability of the *K. triregensis* inflorescence to produce, albeit infrequently, additional lateral elongate or reduced corymbiform botrya from the base and terminus of the main botryum further distinguishes it from *K. amathicola*. *Kunzea triregensis* differs from *K. linearis* by its more openly vegetated, less densely crowded branchlets, and by the leaves which in *K. triregensis* are consistently lanceolate to narrowly lanceolate rather than linear. Further, in *K. triregensis* the thick bands of marginal and abaxial midrib hairs meet at the leaf apex, whereas in *K. linearis* the marginal hairs meet just short of the adaxial face of the apex and the abaxial midrib hairs stop short of the apex. The inflorescence of *K. triregensis* is consistently elongated and the flowers are usually widely spaced (only in stressed conditions becoming crowded). In contrast, the inflorescence of *K. linearis* is usually a condensed, densely packed spiciform botryum. Other distinctions are offered by de Lange (2014) who also discusses this species peculiar past confusion with the Great Barrier Island (Aotea Island) endemic *Kunzea sinclairii*.

## FLOWERING

July–May

## FLOWER COLOURS

White

## FRUITING

October–May

## PROPAGATION TECHNIQUE

Very easy from fresh seed. Can be grown from semi-hardwood and hardwood cuttings. Although scarce in cultivation *Kunzea triregensis* has proved to be an excellent fast growing tree, ideal for street side verges. It is very tolerant of drought and a range of soils provided it has good drainage. It does not appear to be especially cold sensitive.

## THREATS

*Kunzea triregensis* as *K. aff. ericoides* (e) (AK 226797; Three Kings) was appropriately listed by de Lange et al. (2013) as 'At Risk/Naturally Uncommon' qualified 'IE' (Island Endemic) and 'OL' (One Location) because the species is confined to one island group. In its island habitat *Kunzea triregensis* forms the dominant vegetation of Manawatāwhi / Great Island. 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

**triregensis:** Literally 'of the Three Kings' - this species is endemic to the Three Kings Islands

## ATTRIBUTION

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

## REFERENCES AND FURTHER READING

- de Lange PJ. 2014. A revision of the New Zealand *Kunzea ericoides* (Myrtaceae) complex. *Phytokeys* 40: 185 p. <https://doi.org/10.3897/phytokeys.40.7973>.
- de Lange PJ, Rolfe JR, Champion PD, Courtney SP, Heenan PB, Barkla JW, Cameron EK, Norton DA, Hitchmough RA. 2013. Conservation status of New Zealand indigenous vascular plants, 2012. *New Zealand Threat Classification Series* 3. Department of Conservation, Wellington, NZ. 70 p. <https://www.doc.govt.nz/globalassets/documents/science-and-technical/nztcs3entire.pdf>.
- de Lange PJ, Rolfe JR, Barkla JW, Courtney SP, Champion PD, Perrie LR, Beadel SM, Ford KA, Breitwieser I, Schönberger I, Hindmarsh-Walls R, Heenan PB, Ladley K. 2018. Conservation status of New Zealand indigenous vascular plants, 2017. *New Zealand Threat Classification Series* 22. Department of Conservation, Wellington, NZ. 82 p. <https://www.doc.govt.nz/globalassets/documents/science-and-technical/nztcs22entire.pdf>.

## NZPCN FACT SHEET CITATION

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## MORE INFORMATION

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