

Halocarpus kirkii

SYNONYMS

Dacrydium kirkii Parl.

FAMILY

Podocarpaceae

AUTHORITY

Halocarpus kirkii (Parl.) Quinn

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

Yes

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Trees & Shrubs - Gymnosperms

NVS CODE

HALKIR

CHROMOSOME NUMBER

2n = 22

CURRENT CONSERVATION STATUS

2017 | At Risk – Relict | Qualifiers: DP, Sp

PREVIOUS CONSERVATION STATUSES

2012 | At Risk – Naturally Uncommon | Qualifiers: Sp

2009 | At Risk – Naturally Uncommon | Qualifiers: RF

2004 | Sparse

DISTRIBUTION

Endemic. New Zealand: North Island and Great Barrier Island (Aotea Island), from Te Paki (Radar and Unuwhao Bush) south to near Limestone Downs (south of Port Waikato) in the west and about the southern Kauaeranga Valley in the east.

HABITAT

A northern species associated with kauri (*Agathis australis* (D.Don.) Lindl.) forest. In mature kauri forest it is most usually found in apparently even aged cohorts of 10 or less trees along ridge lines, in swampy hollows or at gully heads. This species appears to thrive on disturbance and it is at its most abundant on the margins of kauri and gumland vegetation sites originating from past fires, gum digging and/or kauri logging.



Halocarpus kirkii tree, November, Kauaeranga Valley. Photographer: John Smith-Dodsworth, Licence: CC BY-NC.



A Halocarpus kirkii plant showing juvenile and adult foliage, November, Kauaeranga Valley. Photographer: John Smith-Dodsworth, Licence: CC BY-NC.

DETAILED DESCRIPTION

Dioecious forest tree up to 25 m tall, trunk up to 1.5 m d.b.h., bark greyish brown to dark brown, flaking in irregular to subcircular flakes, wood pale brownish red. **Branches** spreading, upper most often starkly erect, surfaces often marked with scars of old appressed leaves, and often retaining a few persistent, long dead, somewhat woody leaves. **Foliage** markedly heteroblastic, that of seedlings, juveniles and reversion shoots on adult trees 15–50 × 1–4 mm, yellow green to green, linear, apex obtuse to acute, mucronate, coriaceous; midribs distinct; petiole 1–3 mm long, often slightly twisted; adult foliage scale-like closely quadrifurcately imbricating, 2–3 mm long, ovate-oblong to rhomboid, obtuse, faintly keeled, margin hyaline; appressed. **Ultimate branchlets** 1–2 mm diameter, subterete to terete, somewhat smooth. **Male strobili** up to 12 mm long, sessile, solitary and terminal; apiculus obtusely triangular. **Branchlets bearing female cones** terminal or subapical, cone scales 3–5, glaucous to green-grey, conspicuous, ovules solitary. **Epimatium** completely covering seed. **Aril** orange. **Seeds** 3–8 mm, lustrous black, ovoid-oblong, somewhat compressed, distinctly striate. Seeds taking two years to mature.

SIMILAR TAXA

Halocarpus kirkii is completely allopatric from the other two species of the genus *H. bidwillii* and *H. biformis* (though on the Moehau range, both species are nearly sympatric). Its distinctive heteroblastic condition, preserved in even fully mature trees serves to distinguish it from the only superficially similar conifer with which it may grow *Manoao colensoi*. From hand and herbarium specimens of *Halocarpus bidwillii* and *H. biformis*, *H. kirkii* can be recognised by the much longer juvenile and reversion shoot foliage which is up to 50 mm long, and from *H. bidwillii* by the orange rather than white arils. The aril of *H. biformis* is pink to orange but the mature leaves of that species are prominently keeled whilst those of *H. kirkii* are only faintly so.

FLOWERING

October–December

FRUITING

December–November

LIFE CYCLE

Arrilate seeds are dispersed by frugivory (Thorsen et al., 2009).

PROPAGATION TECHNIQUE

Best from fresh seed but often fickle and even well established plants are prone to sudden collapse. Monoao is a beautiful tree whose mixed juvenile/adult foliage is particularly attractive. In good conditions it can be quite fast growing and usually forms a small bushy tree up to 10 m tall within about as many years.

THREATS

Although it was undoubtedly logged when suitable trees were found, this species appears to have never been common, and it still has a highly fragmented, sporadic distribution in what are otherwise largely intact tracts of its preferred habitat kauri (*Agathis australis*) forest today. It is the opinion of conifer experts (though studies are needed to confirm this) that this species is naturally sparse because it requires frequent disturbance to regenerate—thus climax type forested habitats are not suitable long term habitats for this species. whether this is true or not, *Halocarpus kirkii* is most commonly found flourishing (i.e., with all size classes in the appropriate numbers) in secondary regrowth forest abutting older, intact, kauri dominated remnants (e.g., Radar Bush, Maunga Hirakimatā (Mt Hobson)).

ETYMOLOGY

halocarpus: From the Greek hals 'sea', 'salty' and karpos 'fruit'

kirkii: After Thomas Kirk (18 January 1828 - 8 March 1898), a NZ botanist and lecturer in natural sciences and regarded as a leader of botanical enquiry in NZ for over three decades. One of his most significant publications was Forest flora of NZ (1889) but he also contributed over 130 papers to the Transactions and Proceedings of the NZ Institute and other journals.

ATTRIBUTION

Fact sheet prepared for NZPCN by P.J. de Lange 3 February 2006. Description adapted from Allan (1961), Kirk (1889) Webb & Simpson (2001), fresh material and herbarium specimens.

REFERENCES AND FURTHER READING

- Allan HH. 1961. Flora of New Zealand, Volume I. Indigenous Tracheophyta: Psilopsida, Lycopsidea, Filicopsida, Gymnospermae, Dicotyledones. Government Printer, Wellington, NZ. 1085 p.
- Kirk T. 1889. The Forest Flora of New Zealand. Government Printer, Wellington, NZ. 345 p.
- https://ndhadeliver.natlib.govt.nz/delivery/DeliveryManagerServlet?dps_pid=IE17359801.
- Thorsen MJ, Dickinson KJM, Seddon PJ. 2009. Seed dispersal systems in the New Zealand flora. *Perspectives in Plant Ecology, Evolution and Systematics* 11: 285–309. <https://doi.org/10.1016/j.ppees.2009.06.001>.
- Webb CJ, Simpson MJA. 2001. Seeds of New Zealand Gymnosperms and Dicotyledons. Manuka Press, Christchurch. 428 p.

NZPCN FACT SHEET CITATION

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MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/halocarpus-kirkii/>