Agathis australis

COMMON NAMES
kauri

BIOSTATUS
Native – Endemic taxon

CURRENT CONSERVATION STATUS
2023 | At Risk – Declining | Qualifiers: CI, CR, DPT
Jump to previous conservation statuses

CATEGORY
Vascular

STRUCTURAL CLASS
Trees & Shrubs - Gymnosperms

SIMPLIFIED DESCRIPTION
A majestic forest giant conifer from the upper half of the North Island, recognisable by the large sections of bark which fall from the lower non branched trunk leaving red-brown scars. A trunk of this giant may reach as wide as 7 metres, the lush foliage is wide finger-like blue-green to green needles seen mostly towards the ends of the branches. The needles are often in abundance on the ground after falling from the branches, creating a unique habitat for other specialist plants. Kauri also has distinctive large orb-shaped female cones which can be up to 75mm across. Kauri is a forest type once common in the North, now far less abundant.

DETAILED DESCRIPTION
Stout, monoecious forest tree 30–60 m tall, with trunk 3–4–(7) m diameter typically devoid of branches for majority of its height. Trees at ricker development stage have a columnar growth form with trunk scarcely free of branches. As tree matures the basal branches are progressively abscissed, eventually leaving bare trunk typical of mature specimens. **Bark** blue-grey, falling in large thick flakes with scalloped margins, undersides of discarded bark and freshly exposed underbark rust brown. **Leaves** (needles) alternate to subopposite, sessile, thick and leathery; juvenile leaves 50–100 mm × 5–12 mm, lanceolate, pinkish green, often black-spotted (a fungus specific to kauri causes this); adult leaves 20–35 mm, oblong, apex obtuse. **Male cones** 20–50 mm long, stout, cylindrical. **Female cones** globose 50–75 mm diam., cone-scales (carpidia) deciduous, at first broad but then gradually narrowing toward base, bearing one ovule per scale. **Seeds** ovoid, compressed, margins winged.



Female cone. In cultivation. Photographer: Jeremy R. Rolfe, Date taken: 21/02/2011, Licence: CC BY.



Te Arai, Auckland. Photographer: John Sawyer, Licence: CC BY-NC.

SIMILAR TAXA
None—though could be confused with the distantly allied Queensland kauri (*Agathis robusta*) which is commonly cultivated in warmer parts of New Zealand. Kauri can be distinguished from that species by its smaller, narrower needles, and by the needles often spotted with black. Queensland Kauri is much faster growing but adult trees are not nearly as massive as kauri.

DISTRIBUTION
Endemic. New Zealand: Te Ika-a-Māui | North Island from Te Paki south to Pukenui (near Kawhia) in the west and near Te Puke in the east. Over much of its former range it has been heavily logged, such that the best stands now only occur in the Coromandel and Waitakere Ranges, on Great Barrier Island (Aotea Island) and Te Hauturu-o-Toi / Little Barrier Island, and in Northland at Waipoua, Trounson, Omahuta, Puketi, Herekino, Warawara and Radar Bush forests. Despite its northerly limit this species has been successfully grown as far south as Oban, Stewart Island, and seedlings have been observed near planted adults in Wellington, Nelson and Christchurch.

HABITAT
The species forms its own forest type—kauri forest—which is typified by dense canopies of kauri. Common associates in the northern half of its range may include taraire (*Beilschmiedia tarairi*), northern rata (*Metrosideros robusta*), rimu (*Dacrydium cupressinum*), towai (*Pterophylla silvicola*), and makamaka (*Ackama rosifolia*). Historically kauri forest seems to have been best developed on river terraces, coastal plains and the generally flat flood basalts of the Tangihua complex, which make the dominant geology of Waipoua, Omahuta, Puketi, Trounson. Some people believe that the hill and range occurrences, which is where most stands can now be seen, are relictual stands not truly favoured by the species, but merely examples of where it can grow, and of course locations where it was usually left because log extraction was less feasible.

THREATS
Now listed as threatened because of the ongoing decline caused by *Phytophthora agathidicida* for which as yet there is no known effective preventive or treatment. Aside from ongoing losses caused by this disease, kauri on private land remain vulnerable to illegal logging, while trees are still peridoically removed (although only by permit or with approval) for cultural purposes, such as for making waka (canoes) or other Maori buildings and structures. Some small southerly populations are rather vulnerable to goat browse destroying regenerating seedlings and saplings.
Phytophthora agathidicida remains the main threat to kauri. This fungus-like organisim has caused the death of kauri trees throughout large parts of that species range and it is now a serious threat to the species (see the information and links provided below and see images above of lesions and thinning caused by the disease).

GENUS
Agathis

FAMILY
Araucariaceae

AUTHORITY
Agathis australis (D.Don) Lindl.

SYNONYMS
Dammara australis D.Don in Lamb., Podocarpus zamiaefolius Richard

ENDEMIC TAXON
Yes

ENDEMIC GENUS
No

ENDEMIC FAMILY
No

FLOWERING
Female cones produced from September–December. Male cones throughout the year but most common September–January.

FRUITING
Mature cones occur anytime from December through to May, with rare persistent examples found on trees right up to about August

LIFE CYCLE AND DISPERSAL
Winged seeds are dispersed by wind (Thorsen et al., 2009).

PROPAGATION TECHNIQUE
Easy from fresh seed. Very difficult from cuttings. Can be grafted onto seedling kauri.

KAURI DIEBACK
Kauri dieback is a microscopic fungus-like plant pathogen (a disease causing agent) that only affects kauri. Research has identified PTA as a distinct and previously undescribed species of Phytophthora. Kauri dieback is believed to be a soil-borne species spread by soil and soil water movement, plant to plant transmission through underground root-to-root contact, and human and animal vectors. Symptoms include yellowing of foliage, loss of leaves, canopy thinning (see image above) and dead branches. Affected trees can also develop lesions that bleed resin, extending to the major roots and sometimes girdling the trunk as a 'collar rot'. Kauri dieback can kill trees and seedlings of all ages.
Follow this link for an up-to-date FAQ (December 2017). Other information can be found here:

- Kauri dieback (Auckland Council biosecurity information)
- Give Kauri Space to Grow

PLANT OF THE MONTH
This plant has been featured as a Plant of the Month – see Trilepidea: NZPCN newsletter for January 2013 for the full story.

ETYMOLOGY
agathis: From the Greek agathis 'ball of thread'
australis: Southern

NVS CODE
AGAAUS

CHROMOSOME NUMBER
2n = 26

PREVIOUS CONSERVATION STATUSES
2017 | Threatened – Nationally Vulnerable | Qualifiers: DP
2012 | Not Threatened | Qualifiers: DP
2009 | Not Threatened
2004 | Not Threatened
Jump to current conservation status

REGIONAL CONSERVATION STATUSES
Auckland: 2025 | Regionally At Risk – Regionally Declining | Qualifiers: CI, CD, DPS, DPT, PF, Rel Help
Current regional threat status assessments prepared according to Crisp et al. (2025) are displayed when available. The Auckland conservation status information is sourced from the "Conservation status of vascular plant species in Tāmaki Makaurau / Auckland" Simpkins E et al. (2025) report.
Northland: 2026 | Regionally At Risk – Regionally Declining | Qualifiers: CD DPS DPT CI PF Rel Help
Current regional threat status assessments prepared according to Crisp et al. (2025) are displayed when available. The Northland conservation status information is sourced from the "Conservation status of indigenous vascular plants in Northland | Taitokerau" Ford et al. 2026 report.

REFERENCES AND FURTHER READING

Allan HH. 1961. Flora of New Zealand, Volume I. Indigenous Tracheophyta: Psilopsida, Lycopsida, Filicopsida, Gymnospermae, Dicotyledones. Government Printer, Wellington, NZ. 1085 p.
Ogden J. 1988. Kauri: Key to Auckland's past. *Auckland Botanical Society Journal 43*: 17–19.
Enright N, Cameron EK. 1988. The soil seed bank of a kauri (*Agathis australis*) forest remnant near Aukcland, New Zealand. *New Zealand Journal of Botany 26(2)*: 223–236. https://doi.org/10.1080/0028825X.1988.10410114.
Sem G, Enright NJ. 1995. The soil seed bank in *Agathis australis*(D. Don) Lindl. (kauri) forests of northern New Zealand. *New Zealand Journal of Botany 33(2)*: 221–235. http://dx.doi.org/10.1080/0028825X.1995.10410485
Mirams RV. 1957. Aspects of the natural regeneration of the kauri (*Agathis australis* Salisb.). *Transactions of the Royal Society of New Zealand 84(4)*: 661–680.
Sando, C.T. Notes on Agathis australis. NZ Journal of Forestry.
Dickie JB, Smith RD. 1995. Observations on the survival of seeds of *Agathis* spp. stored at low moisture contents and temperatures. *Seed Science Research 5(1)*: 5–14. https://doi.org/10.1017/S0960258500002531.
Wyse SV, Burns BR. 2013. Effects of *Agathis australis* (New Zealand kauri) leaf litter on germination and seedling growth differs among plant species. *New Zealand Journal of Ecology 37(2)*: 178–183.

ATTRIBUTION

Fact Sheet Prepared for NZPCN by P.J. de Lange May 2004. Description adapted from Allan (1961).
Some of this factsheet information is derived from Flora of New Zealand Online and is used under a Creative Commons Attribution 3.0 New Zealand licence.

MORE INFORMATION

https://www.nzpcn.org.nz/flora/species/agathis-australis/

PDF DATE

01 September 2026