



Proteaceae

THE SOCIETY'S 2023 WILDLIFE OF THE YEAR

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The Proteaceae family contains more than 1,766 species in eighty genera. Its predominantly southern hemispheric distribution is an attribute of its ancient evolution from the Cretaceous period (145 to 66 million years ago), when Australia, Africa, and South America were one interlocking landmass called Gondwana.

There are presently 1,154 species described from forty-seven genera native to Australia. Though taxonomy is not a static discipline, this will continue to change with time as new species are discovered. On the cover of this issue is a vibrant red *Telopea speciosissima*, commonly known as the

waratah, which is endemic to New South Wales and is the state's floral emblem. *Telopea* has four other species, all of which are endemic to the east coast of Australia.

Proteaceae is important because the family is so diversified, encompassing species that grow in sclerophyllous forests such as the *Banksia* and *Grevillea* to species that are restricted to rainforests such as *Hollandaea* and *Buckinghamia*. Furthermore, *Macadamia integrifolia* provides a source of income to the Australian economy. But what makes it important is not its economic value but its indispensable environmental value. The speciose

family also provides food and shelter to many of Australia's native wildlife. Hence, protecting threatened Proteaceae species also protects habitats that Australia's wildlife call home.

There are currently 1,374 plants listed as threatened by extinction in the *Environment Protection and Biodiversity Conservation Act 1999*. Of the 226 critically endangered and 564 endangered species, Proteaceae makes up nineteen percent of the critically

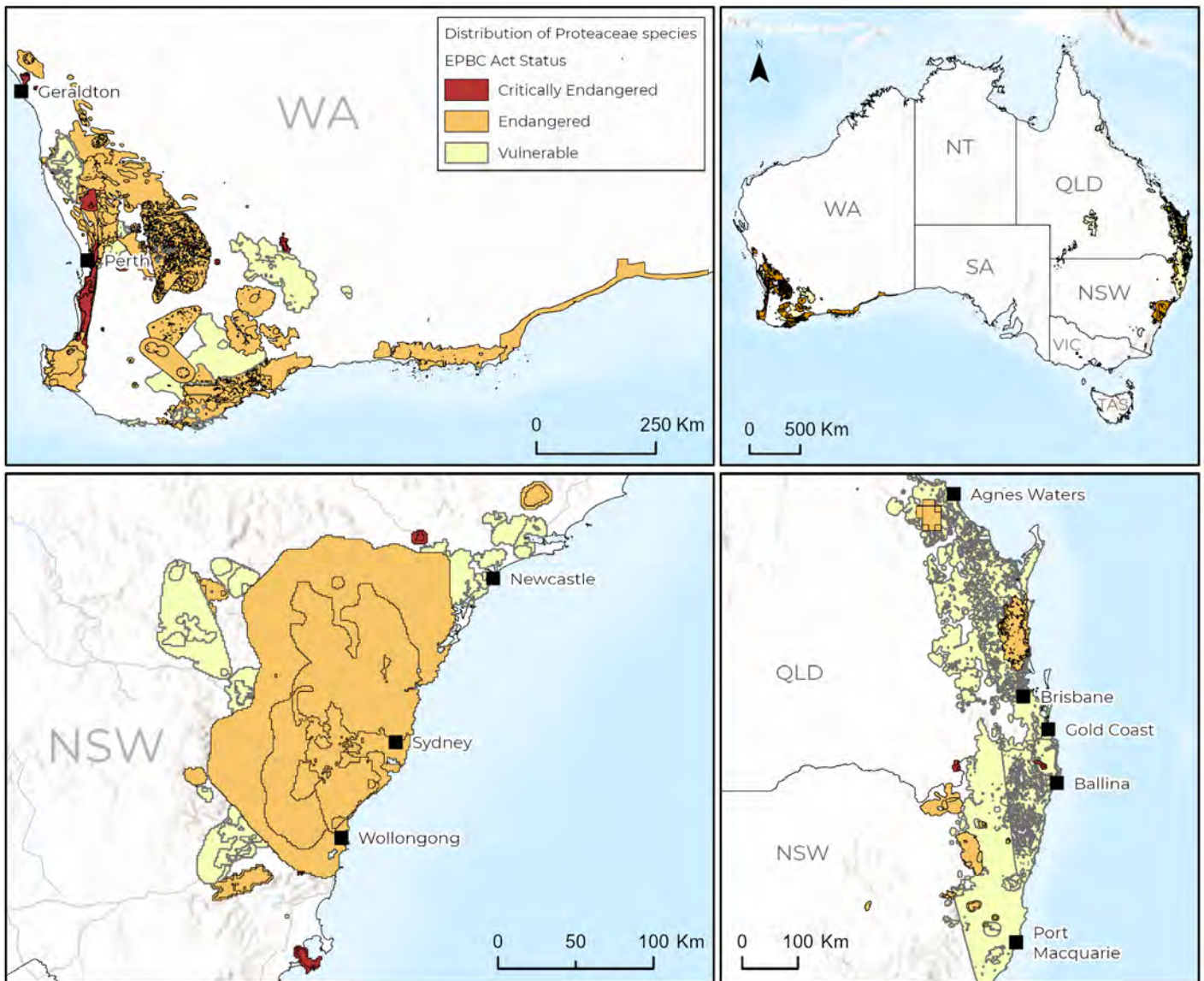
Top: Scarlet banksia (*Banksia coccinea*) are frequently displayed in bouquets and native gardens. Image: Annie Nguyen.



A rainbow lorikeet (*Trichoglossus moluccanus*) amongst *Grevillea*. Image: Malcolm Paterson.

endangered and twenty percent of the endangered species in the *Environment Protection Biodiversity Act 1999* list.

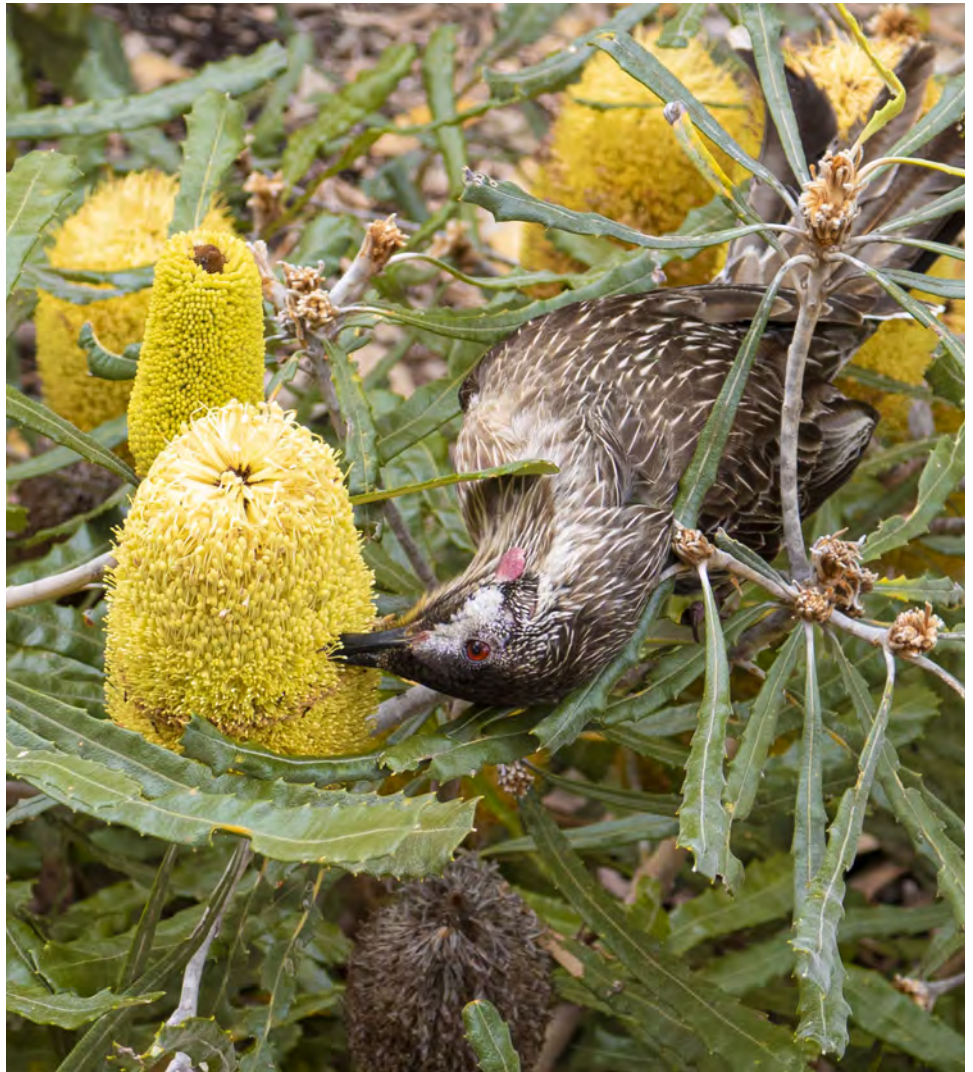
Lomatia tasmanica, possibly the oldest living plant, is a critically endangered species in Tasmania that has less than five hundred individuals left. Unable to produce seeds, *Lomatia tasmanica* are found in a single population that is a clone of itself dating back to at least 43,000 years old. The species is threatened by inappropriate fire regimes and 'root rot' caused by mould (*Phytophthora cinnamomi*) infections. Another ancient species is the *Cenarrhenes nitida* or the native plum. The native plum is the only species in its genus and is endemic to western parts of Tasmania. Macrofossil plant material of *C. nitida* has been found in Eocene assemblages dating back to ~ 30 million years old. Along with *Bellandena montana*, the native plum tree requires cool, moist shady conditions to thrive. However, forest fragmentation and changing climates could see further contractions in these paleoendemics.



A map of threatened Proteaceae species by state. Image: Annie Nguyen.

The Australian government has recently launched the *Threatened Species Action Plan 2022-2032*, which will focus on 110 priority species through \$12 million in funding to community-led projects helping to conserve and manage those species. The Plan includes thirty plant species, of which four are in the Proteaceae family; these are the bulberin nut (*Macadamia janseni*), Foote's grevillea (*Grevillea calliantha*), small-flowered snottygobble (*Persoonia micranthera*), and stirling range dryandra (*Banksia montana*). The priority species are chosen based on six fundamental principles, including their risk of extinction and benefit to other species. Keen individuals are encouraged to participate in these community projects by looking up the complete list of grant proponents from the Environment Restoration Fund on the Department of Climate Change, Energy, the Environment and Water website.

Other actions readers can take to increase biodiversity and support local fauna is by planting native species of Proteaceae such as *Grevillea*, *Banksia*, and *Hakea*. Planting native species is a great way to support the birds, beetles, bees, and butterflies in your neighbourhood.



A red wattlebird (*Anthochaera carunculata*) enjoys the delicious nectar from a *Banksia*. Image: Julia Kalinkina.



The critically endangered *Grevillea caleyi* is restricted to an eight-kilometre square area around Terrey Hills, Sydney. Image: Annie Nguyen.



Little drumsticks (*Isopogon anemonifolius*) can be found in many nurseries and attracts butterflies, birds, and bees. Image: Annie Nguyen.