



Eucalyptus cannonii

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Common name: Capertee Stringybark

The following information is provided to assist authors of Species Impact Statements, development and activity proponents, and determining and consent authorities, who are required to prepare or review assessments of likely impacts on threatened species pursuant to the provisions of the *Environmental Planning and Assessment Act 1979*. These guidelines should be read in conjunction with the NPWS *Information Circular No. 2: Threatened Species Assessment under the EP&A Act: The '8 Part Test' of Significance* (November 1996) and with the accompanying "Threatened Species Information" sheet.

Survey

Identification of *Eucalyptus cannonii* is dependent on finding trees carrying mature buds and fruit. It is similar to the more widespread species *E. macrorhyncha* and putative hybrids between the two species are common across part of the range of *E. cannonii*. Care must be taken in identification. *E. cannonii* is distinguished from *E. macrorhyncha* on the basis of bud and fruit characters, with pedicel length and number of flowers per umbel being subsidiary characters which should be assessed. Other stringybarks, including *E. sparsifolia* and *E. blaxlandii*, may occur in close proximity to stands of *E. cannonii*. *E. sparsifolia* has small, rounded fruits and narrow, tapered juvenile leaves, and *E. blaxlandii* has smooth-barked upper branches and buds with sessile obovoid to clavate buds.

Life cycle of the species

Fire regime is important to the maintenance of the life cycle of this species. Although mature trees survive hot fires, resprouting from epicormic buds (Benson and McDougall 1998), frequent fires may kill seedlings and weaken mature trees. Populations under natural conditions consist of mainly mature or senescent plants with less than

10% of populations being juvenile plants (Lembit pers. comm.). The proportion of immature plants increases in disturbed areas, a reflection of the species' ability to re-establish from seed stocks stored on the plant. It is difficult to determine whether juvenile plants are purebreds or hybrids without laboratory analysis (e.g. allozyme or DNA testing).

Competition from other species, rather than seedling recruitment and/or survival, seems to be the more powerful determinant of the ability of the species to survive.

Threatening processes

"High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition" is listed in the NSW *Threatened Species Conservation Act 1995* as a key threatening process which may affect *E. cannonii*.

Other threats such as removal of timber for firewood and grazing are more difficult to assess, particularly in relation to their impacts on the relative success of hybrid v. purebred individuals. The impact of seasonality of fire is unknown.

Viable local population of the species

E. cannonii trees within 30m of each other should be considered part of the same population. The viability of small populations is difficult to determine in the absence of genetic information. The presence of hybrids with other stringybarks is a confounding factor.

Individual populations are known to have existed for at least 50 years, however information on population dynamics is not available.

In the absence of reliable data, small populations of the species should be considered to be viable.

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A significant area of habitat

Considering the species' current distribution and area of remaining habitat, any habitat supporting a population of this species should be considered significant. Populations at the edge of the species' range, or new populations which represent significant outliers from existing known populations, should be considered to be particularly significant.

Isolation/fragmentation

This species may be particularly sensitive to inbreeding depression as a consequence of isolation, which may lessen the ability of purebred individuals to compete with more vigorous hybrids.

Fragmentation is also an issue for the species as genetic material has a limited dispersal range. Areas of inter-connecting habitat and vegetated links should be retained wherever possible.

Regional distribution of the habitat

The species is found in the Central Tablelands, generally west of Wollemi National Park. Populations of the species occur in the Sydney Basin, South Eastern Highlands and NSW South-western Slopes bioregions.

Limit of known distribution

The northern limit of the species is at Mount Stormy, north of Rylstone. The

western limit is at Eskdale Gulf in Winburndale Nature Reserve. The southern limits are at Eskdale Gulf and Mount Piper near Wallerawang and the eastern limit is in the Wolgan Valley. It is likely that the species exists beyond its known limits, although there have been no comprehensive targeted searches in these areas, however it is not expected that the range would extend far beyond the known limits.

Adequacy of representation in conservation reserves

The species is adequately conserved in reserves, with over 6,000 plants estimated for Winburndale Nature Reserve (Hunter 1998) and 15,000 plants estimated for Gardens of Stone NP. There are also reserved populations of unknown size in Avisford Nature Reserve and Wollemi National Park. These reserved populations occur across the range of the species. A number of other sites where the species has been recorded are unlikely to be under threat. These include the populations at Mount Stormy and Mount Piper.

Critical habitat

Critical habitat cannot be declared for *E. cannonii* as it is not listed on Schedule 1 of the NSW *Threatened Species Conservation Act* 1995.

For further information contact

Threatened Species Unit, Central Directorate, NSW NPWS, PO Box 1967, Hurstville NSW 2220. Phone (02) 9585 6678 or visit our website www.npws.nsw.gov.au.

References

- Benson, D.H. and McDougall, L. (1998) Ecology of Sydney Plant Species Part 6: Dicotyledon family Myrtaceae. *Cunninghamia* 5(4): 808-988.
- Hunter, J.T. (1998) Threatened Endemic Eucalypts of the Central Tablelands report to Western Zone. NSW NPWS, Dubbo.

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