Darwinia biflora

(Cheel) Briggs

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).

Survey

Surveys for *D. biflora* can be conducted at any time of the year, though it is easier to detect when flowering. It can be distinguished from other Darwinias in the region by the shape of the leaves (laterally compressed, not terete) and the width of the hypanthium (<1.5 mm diameter) (Harden 1991).

Life cycle of the species

Fire is an important factor in the life cycle of this species. If a proposal is likely to result in frequent fires, then this may lead to declines in the population, since an adequate seedbank will not be able to develop between fire events.

Threatening processes

Bushrock Removal and high frequency fire are the only processes to be listed that are relevant to this species. However, other more general threatening processes that have been identified as relevant to this species should also be considered. These include habitat loss and habitat degradation through inappropriate fire regimes, slashing for easement maintenance, illegal track creation and weed invasion (NSW NPWS 1999).

Viable local population of the species

Any individuals of *D. biflora* within 500 m of each other can be considered part of the same population. It is difficult to determine whether a population can be considered viable. *D. biflora* can be quite tolerant of occasional disturbances (such as fire or slashing) but may not survive intensive weed invasion. Isolation and fragmentation may also reduce viability. Small population size should not be used as an indicator of non-viability without an assessment of the potential amount of seed stored in the soil. The time since fire may give an indication of the size of the seedbank - i.e. after a long fire interval (say >20 years), the number of adults in the population declines and the size of the seedbank increases.

Fire is one of the most important factors that affects the viability of a population. A population may not be viable in the long term if a proposal is likely to reduce the opportunity for an appropriate fire regime to be imposed.

A significant area of habitat

The largest and most significant areas of habitat occur around the North Turramurra - North Wahroonga areas. Whether other areas of habitat could be classified as significant is difficult to determine. It should be noted that the species is not evenly distributed across its range, so the significance of populations should be assessed relative to other populations in the local area. The size of the population and the extent, security and quality of habitat of the subject site and other sites in the locality, are factors that can be used to determine significance of a site. Sites that are vegetatively linked to other areas or are at the edge of the range are also significant. Population size should not be

used as a sole indicator of the significance of a site, since numbers of individuals at a site vary dramatically with time since fire.

Isolation/fragmentation

The threat of inbreeding depression (resulting from isolation of sites) may not be an issue for *D. biflora*, as the species usually self-pollinates.

Fragmentation is a significant issue in the west of the species range, especially in Baulkham Hills Shire, where sites generally have very small population numbers. Management of *D. biflora* habitat and any proposals that affect the species should aim to maintain the continuity of habitat between individuals within sub-populations, and avoid artificially creating new sub-populations.

Regional distribution of the habitat

The distribution of *D. biflora* is confined to the Sydney Basin Bioregion.

Limit of known distributiom

The known northern, southern, eastern and western limits of the species are at Maroota, North Ryde, Berowra and Kellyville, respectively. Further survey may identify additional sites outside these areas.

Adequacy of representation in conservation reserves or other similar protected areas

At this stage, *D. biflora* is not considered to be adequately represented in conservation reserves, since the populations that occur in conservation reserves occur only around the east of the species' range, and so are not representative of the range of genetic diversity of the species.

Critical habitat

Critical habitat cannot be declared for this species, as it is not listed on Schedule 1 of the TSC Act. Therefore, this issue does not need to be considered.

For further information contact:

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References

Harden G.J. (1991). *Flora of New South Wales.* N.S.W. University Press, Kensington, N.S.W.

NSW NPWS (2003). Recovery Plan for *Darwinia biflora* working draft. NSW NPWS, Hurstville.

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