Prostanthera discolor

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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

Prostanthera discolor is most easily located and identified when flowering. When not in flower the species is difficult to locate, its open growth form merging into the surrounding vegetation.

Identification of seedlings and juvenile plants requires microscopic examination or chemical analysis. Surveys undertaken in habitat with a recent fire history will require intensive searches to determine presence /absence.

P. discolor is easily confused with *P. ovalifolia sens. Lat*, which occurs in the same area. The species is discernible from this taxon in the bud or fruiting stage, as well as by the distinctive aroma of its foliage. *P. discolor* flowers in short compact clusters whereas *P. ovalifolia sens. lat.* the clusters are more elongated.

Due to the habitat specialisation of this species, survey should include intensive searches of creeklines, intermittent drainage lines and sideslopes. Likely habitat areas are sites with an open canopy and/or landform features such as rock outcrops, especially boulder chokes, exposed rock platforms, ledges and cliff bases.

Life cycle of the species

Prostanthera seeds are thought to be stored in the upper layers of the soil profile. The dormancy mechanisms of *P. discolor* seed are unknown.

P. discolor is fire sensitive and adult plants are killed by fire.

The lifecycle of *P. discolor* is likely to be disrupted physical destruction of plants, by fires at intervals of less than 8 years, by seedbank disturbance and habitat modification such as weed invasion, reduced water quality/agricultural or residential runoff, nutrification of the soil due to animal excrement or the application of agricultural chemicals (especially fertiliser upslope of the habitat), altered hydrological function and erosion. Runoff, erosion and sedimentation are significant issues due to the sensitivity of *Prostanthera* to waterborne and soil pathogens.

Any activity which results in the modification or removal of associated vegetation is also likely to impact upon the life cycles of pollination vectors and therefore *P. discolor*.

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 and may affect *P. discolor*.

Viable local population

The minimum size of a viable local population of *P. discolor* is not known. Research by Tierney (1996) on *P. junonsis* indicates that relatively small populations are capable of successful reproduction, at least in the short term.

Significant area of habitat

In assessing whether a significant area of habitat is to modified or removed, the focus on assessment should be with reference to the areas of known habitat within the current distribution (ie is the area of habitat significant in relation to the existing distribution).

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The following factors should be considered in relation to determining whether a significant area of *P. discolor* habitat exists:

- the number, density and population dynamics (age) of the individuals occurring there;

the proximity of the habitat in question to existing *Prostanthera P. discolor* sub-populations; and

whether the habitat can be managed.

Isolation/fragmentation

Two areas of *P. discolor* habitat have been identified, both within the Goulburn River Catchment. The two populations are separated by approximately 40km of developed agricultural lands and rugged natural terrain. Potential habitat occurs within this expanse so it is likely that sub-populations of the species may be found here.

Gene flow is likely to be facilitated by pollen dispersal rather than by seed dispersal. Seed may also be dispersed by water. Fragmentation or isolation of *P. discolor* is likely to result in reduced reproductive success or inbreeding depression, from mating among close relatives.

Regional distribution of the habitat

P. discolor habitat occurs within the Sydney Basin Bioregion.

Limit of known distribution

The northern distributional limit of *P. discolor* occurs at Coxs Gap and the south-eastern limit is in the Baerami Valley.

Adequacy of representation in conservation reserves

Despite occurring entirely in Wollemi National Park, *P. discolor* is not considered to be adequately conserved due to its small population.

Critical habitat

Critical habitat cannot be declared for *P. discolor* 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

Tierney, D.A. (1996) *Prostanthera sp. Somersby; is recovery possible*? Unpublished report, Masters of Natural Resource Management, University of New England, Armidale.