Persoonia glaucescens

Sieber ex Sprengel

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

Although *Persoonia glaucescens* is identifiable throughout the year, it is more readily detected during the flowering period in summer and early autumn.

Surveys should not be limited to areas within the existing distributional limits and should be conducted along disturbance margins as this is where the vast majority of specimens will be present. Populations at sites undisturbed for 10 years or so may not be representative of the potential population size. This is because of the important role that disturbance, including fire, plays in the germination of the seed bank and the reduction in native plant competition. Thus, one old plant in an area of preferred habitat may, when the habitat is suitably disturbed, lead to the establishment of several seedlings.

The recommended survey technique is to conduct transects along disturbance margins as this is where the vast majority of specimens will be present.

Substantial, though badly fragmented, areas of habitat have not been surveyed, particularly on private land.

Life cycle of the species

The life span of *P. glaucescens* is unknown but is likely to be at least 20 years. However, few plants seem to reach this age due to the frequency of fires and other lethal disturbance in the majority of its habitat.

If a proposal is likely to result in fire frequencies less than 10-15 years, this may lead to decline of the affected population, since an adequate seedbank will not be able to develop between fires. Alternatively, if a proposal is likely to reduce the incidence of fire beyond 20 years, this may also lead to population decline from reduced opportunity for recruitment.

P. glaucescens is primarily pollinated by the *Leioproctus* (subgenus *Cladocerapis*) and *Exoneura* genera of native bees (Bernhardt & Weston, 1996). *P. glaucescens* has relatively specific habitat requirements, particularly in terms of soil type. In combination with propagation difficulties and a lack of knowledge about the species' reproductive parameters these factors make translocation of plants or populations a particularly unsound proposal.

Similarly, frequent track maintenance and slashing will prevent seedbank establishment, thus preventing local populations from replicating and ultimately resulting in local extinction.

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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 *P. glaucescens*.

Viable local population of the species

The minimum size of a viable local population of *P. glaucescens* is unknown. However, in the absence of detailed population viability analysis, the NPWS considers that all populations should be considered viable until further information becomes available.

A significant area of habitat

The majority of known sites of *P. glaucescens* are small. This is because the suitable habitat is usually very narrow and can be discontinuous.

The species remains inadequately conserved as most populations are outside conservation estate. The inadequacy of reservation means that any area of known habitat is significant.

Isolation/fragmentation

The species' highly specific preference for particular soil conditions and the naturally restricted occurrence of these conditions means that its habitat was always of a linear to patchy nature. The habitat of this species is significantly fragmented by rural and rural-residential activities and by road and rail corridors. Populations closer than 500m are likely to be interbreeding (given that bees are pollen vectors). Any proposal which would prevent this interbreeding would result in further isolation of populations. An example of this might be a housing development between populations which discourages native bees from travelling between them.

Similarly, as seeds are probably dispersed by birds and marsupials, developments which prevent this dispersal between populations would also cause increased isolation.

Regional distribution of the habitat

P. glaucescens is endemic to the Central Coast and Central Tablelands Botanical Division of the Sydney Basin Bioregion. It is currently known from the Southern Highlands region between Picton and Berrima (Harden 1991).

Limit of known distribution

The historical distribution places the northern and eastern limit at Couridjah (Thirlmere Lakes), the southern limit at Fitzroy Falls and the western limit at the locality of High Range. However, recent surveys have indicated that the species no longer extends to Fitzroy Falls or Kangaloon and that the present southern limit is near Berrima. The northern limit appears to have contracted a few kilometres south to Buxton.

Adequacy of representation in conservation reserves

P. glaucescens is not adequately represented in conservation reserves or other protected areas. Only two populations have been recorded in Nattai National Park, with one record known from Thirlmere Lakes National Park and at least three records known from Bargo State Recreation Area. One population occurs in a Box Valley Tramway Crown Reserve at Welby whilst another was recently reported from Ironmines Reserve at Mittagong.

Critical habitat

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

For further information contact

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References

Bernhardt, P. & Weston, P.H. (1996) The pollination ecology of *Persoonia* (Proteaceae) in eastern Australia. *Telopea* 6(4): 775-804.

Harden, G. (Ed.) (1991) *Flora of NSW* Vol. 2. UNSW Press, Kensington.

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