

FLORA AND FAUNA GUARANTEE - SCIENTIFIC ADVISORY COMMITTEE
FINAL RECOMMENDATION ON A NOMINATION FOR LISTING

Loss of hollow-bearing trees from Victorian native forests
(Potentially Threatening Process)

Date of receipt of the nomination: 7 December 1989
Date of preliminary recommendation: 22 January 1991
Date of final recommendation: 22 May 1991

File No.: 89/4658

Validity:

The nomination is for a valid item and the prescribed information was provided. The nominated process was adequately defined and described.

Evidence was provided that tree hollows tend to occur in mature, senescent, and dead trees. The minimum age at which sizeable hollows begin to form depends on the tree species; ages of 120 years, 144-194 years and 300-400 years have been cited (Mansergh & Norris 1982, Mackowski 1984).

The loss of hollow-bearing trees has two components; activities which remove or destroy hollow-bearing trees, and processes which affect younger trees and seedling recruitment, preventing or reducing the replacement of hollows lost through natural attrition.

Practices which lead to loss of hollow bearing-trees are:

1. Logging and associated operations which can remove and damage trees with hollows and leave insufficient younger trees to replace losses due to natural mortality and to ensure a continuing supply of hollows; and
2. Prevention of recruitment of hollow-bearing trees. Mature and over-mature trees in remnant fringes, patches and paddocks will generally not be replaced when they fall, where saplings and understorey vegetation are cut, burnt for fire protection or grazed.

The SAC is satisfied that the potentially threatening process is widespread in its distribution, operating in all major forest types in Victoria and in woodlands.

The range of flora or fauna affected or potentially affected was adequately stated in the nomination.

Significance of the threat which the potentially threatening process poses or has the potential to pose was adequately stated in the nomination.

Eligibility for listing as a potentially threatening process under the Flora and Fauna Guarantee

The nominated item satisfies at least one criterion of the set of criteria prepared and maintained under Section 11 of the *Flora and Fauna Guarantee Act 1988* and stated in Schedule 1 of the *Flora and Fauna Guarantee Regulations 1990*.

Evidence that criteria are satisfied:

Criterion 5.1. *the potentially threatening process, in the absence of appropriate management, poses or has the potential to pose a significant threat to the survival of a range of flora or fauna.*

Evidence:

Hollow-bearing trees are an essential habitat requirement for many arboreal mammal and bird species (Strahan 1983, Emison *et al.* 1987, Robinson 1989 and other references). If this habitat requirement is not satisfied, then the dependent species decline or disappear. Surveys (e.g. Smith & Lindenmayer 1988) have provided evidence of declining numbers of hollow-dependent fauna species in areas where hollow-bearing trees are declining or have been removed, and also of an increase in number of possums and gliders with increasing number of hollows. Therefore the dependence of a range of species on hollow-bearing trees for survival is well documented. Examples of animals requiring large tree hollows for nesting and roosting sites are: arboreal marsupials such as the Yellow-bellied Glider and the Leadbeater's Possum; the Red-tailed Black Cockatoo; and raptorial birds such as the Sooty Owl and Masked Owl, and some bat species.

Clear evidence was presented that the process is operating in all forest types, including in the Central Highlands, open woodlands of the north and west, and forests of the Otways and South and East Gippsland.

Sub-criterion 5.1.1 *the potentially threatening process poses or has the potential to pose a significant threat to the survival of two or more taxa.*

Evidence:

Logging operations will remove trees well before they reach the age when hollows form; the Timber Industry Strategy recommends 80-150 years rotation (CFL 1986), and logging in the Central Highlands averages 80 years rotation.

Species dependent on hollow-bearing trees include Leadbeater's Possum, Masked Owl, Sooty Owl, Red-tailed Black Cockatoo, Squirrel Glider, Regent Parrot, Superb Parrot, Yellow-bellied Sheath-tail-bat and Great Pipistrelle. All of these are included on lists of threatened wildlife (Baker-Gabb 1991). The process is operating in the areas where these species occur.

Sub-criterion 5.1.2 *the potentially threatening process poses or has the potential to pose a significant threat to the survival of a community of flora and fauna.*

Evidence:

Loss of hollow-bearing trees leads to fragmentation of habitats. The disappearance or decline of large fauna from the forest community may adversely affect other components of the community to an unknown degree. Species which are predators on hollow-dependent species will be affected by their decline (e.g. Robinson 1989).

Criterion 5.2 *the potentially threatening process, in the absence of appropriate management, poses or has the potential to pose a significant threat to the evolutionary development of a range of flora or fauna.*

Evidence:

Habitat fragmentation caused by loss of hollow-bearing trees is clearly documented. This fragmentation threatens evolutionary development, by increasing the susceptibility of isolated populations to extinction, and causing both loss of genetic variation and inbreeding in isolated populations (Gilpin & Soule 1986).

Background Information:

- Of the species dependent on hollow-bearing trees, at least five have already received the SAC's final recommendation for listing; Leadbeater's Possum (endangered), Masked Owl (indeterminate), Sooty Owl (rare), Red-tailed Black Cockatoo (vulnerable) and Squirrel Glider (rare). (Conservation status from Baker-Gabb 1991).
- There is evidence from other countries of faunal behavioural changes caused by loss of old and dead trees and subsequent habitat fragmentation.
- More research is needed on the density of hollows required to maintain viable populations of species which are directly and indirectly dependent on them, to enable appropriate management. Further research should be encouraged.
- Natural stag fall without replacement is an aspect of the process which is not fully addressed in the actual nomination.
- Land clearance controls do not restrict removal of dead trees, and FFG flora controls currently do not apply to private land.
- Forest prescriptions along watercourses do not provide for protection of some animals e.g. retention of streamside refuges are not adequate protective measures for Leadbeater's Possum.

Advertisement for public comment

In accordance with the requirements of Section 14 of the *Flora and Fauna Guarantee Act 1988*, the preliminary recommendation was advertised for public comment for a period of at least 30 days.

The preliminary recommendation was advertised in:

"The Age" on 6 February 1991

"Weekly Times" on 6 February 1991

Government Gazette on 6 February 1991

Submissions closed on 8 April 1991.

Further evidence provided:

No public comments were received by the Scientific Advisory Committee.

No evidence was provided to warrant a review of the Scientific Advisory Committee's preliminary recommendation that the potentially threatening process is eligible for listing.

Documentation

The published information, research data and additional evidence provided to the SAC have been assessed. To the best of their knowledge, the SAC believes that the data presented are not the subject of scientific dispute and the inferences drawn are reasonable and well supported.

Final Recommendation of the Scientific Advisory Committee:

The Scientific Advisory Committee concludes that on the evidence available the nominated item is eligible for listing in accordance with Section 11(3) of the Act because primary criteria 5.1 and 5.2 are satisfied.

The SAC also concludes that sub-criteria 5.1.1 and 5.1.2 have been satisfied and that no evidence exists to suggest that primary criterion 5.1 cannot be satisfied as a consequence of sub-criteria 5.1.1 and 5.1.2 being satisfied.

The Scientific Advisory Committee recommends that the nominated item be supported for listing on Schedule 3 of the *Flora and Fauna Guarantee Act 1988*.

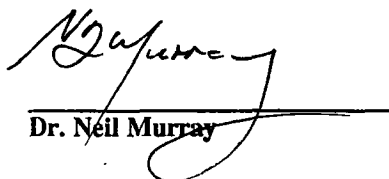
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Endorsement by the Convenor of the Scientific Advisory Committee

Date


Dr. Neil Murray

19 June, 1991