



Epacris hamiltonii

Maiden & Betch

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 species profile.

Survey

Surveys for *E. hamiltonii* can be conducted at any time of the year. The plant is easily identified by its grey/green colouration and hairy leaves and branchlets, however it is easier to locate while the white flowers are visible from August to December.

Surveys should be conducted along creek lines at the cliff/slope interface within the range of this species. Where *E. hamiltonii* is present, population details and location should be recorded

Life cycle of the species

The biology of *E. hamiltonii* is described in the draft recovery plan and summarised in the attached profile. The lifecycle of *E. hamiltonii* is likely to be disrupted should any of the following occur:

- **Inappropriate fire regimes** are the major threat to the lifecycle of this species, with the potential to affect all lifecycle stages. Should fire occur in *E. hamiltonii* habitat at frequencies greater than the time taken for seedlings to establish fire resistant rootstock (and thus replace adults which died), flower and produces seed, populations of *E. hamiltonii*

can be expected to decrease in size. An intense fire could destroy the soil seed bank of this species.

- **Habitat alteration and degradation** directly impacts upon the lifecycle of *E. hamiltonii*. This species is dependent upon water seepage through the sandstone cliffs. As these areas are water-fed from the hanging swamps above, they are perennial even in short dry periods. Due to this dependence a prolonged drought event, with accompanying low rainfall and high temperatures will reduce or stop discharge from swamps and has the potential to affect *E. hamiltonii* and other wet gully species. Groundwater aquifer extraction also has the potential to affect the survival of this species and its habitat.

The nutrient enrichment of water sources due to increased urbanisation of the Blue Mountains Plateau can affect the lifecycle of *E. hamiltonii* directly or indirectly by encouraging weed growth and establishment. Sources of ground and surface water contamination such as sewerage and storm water runoff also pose potential threats.

Threatening processes

E. hamiltonii is listed on the final determination of high frequency fire as a Key Threatening Process, as a species likely to be adversely affected by that process. Additional threatening processes include trampling by walkers, habitat degradation by altered moisture regimes, increases in stream nutrient levels and weed invasion.

Viable local population of the species

There is little information available that would allow accurate determination of whether a population of *E. hamiltonii* is viable. In the absence of detailed

population viability analysis all population should be considered viable, until further information becomes available.

A significant area of habitat

The habitat of *E. hamiltonii* is restricted to deeply dissected creek lines on the plateau of the upper

Blue Mountains. As this habitat is very limited and highly vulnerable to impacts, all of the known habitat of *E. hamiltonii* should be considered significant.

Isolation/fragmentation

The aim in conservation management is to minimise fragmentation and disintegration of habitats within an area to maximise the species distribution and dispersal processes.

Isolation of populations will occur if a development restricts pollinator movement and seed dispersal between populations. For example, ridgetop development between known populations may reduce pollinator movement or seed dispersal by mammals (though some contact may still be maintained along creek lines).

Regional distribution of the habitat

The regional distribution of the habitat is confined to the distribution of the

For further information contact:

Threatened Species Unit Conservation Programs and Planning Division, Central Directorate NSW NPWS PO Box 1967, Hurstville NSW 2220 Phone 02 9585 6678.
www.npws.nsw.gov.au

References

Holland, W.N, Benson, D.H. & McCrae, H.D. (1992) Spatial and Temporal Variation in a Perched Headwater Valley in the Blue Mountains : Geology, Geomorphology, Vegetation, Soils and Hydrology. *Proceedings of the Linnean Society*, 113:4.

Keith, D. A.(1996) Fire-driven extinction of plant populations: a synthesis of theory and review of evidence from Australian vegetation. *Proceedings of Linnean Society*. 116: 37-78.

NSW NPWS. (1997) *Epacris hamiltonii* : Final Report 1997. *Report to EA*, Project No. 453.

dissected creek lines on the northern side of the Blue Mountains.

Limit of known distribution

The distribution of *E. hamiltonii* is limited to 3 Creeks in the upper Blue Mountains, within a radius of 5 km.

Adequacy of representation in conservation reserves or other similar protected areas

Forty-three (43) sites occur within the Blue Mountains National Park, other sites occur in Sydney Water (9 sites) and Council reserves (2 sites), which also provides some level of protection. The remaining sites on private land (13 sites) are zoned Environmental Protection and are also afforded a degree of protection. As 80% of this species known populations occur within conservation reserves, with the remainder protected with zoning restrictions, it is thought to be adequately represented within these areas.

Critical habitat

Critical habitat has not been declared for *E. hamiltonii*.

IMPORTANT DISCLAIMER

The NSW National Parks and Wildlife Service and the editor expressly disclaim all liability and responsibility to any person, whether a purchaser or reader of this document or not, in respect of anything done or omitted to be done by any person in reliance upon the contents of this document although every effort has been made to ensure that the information presented in this document is accurate and up to date.

May 2002