

# DELINEATION of IMPORTANT HABITATS of THREATENED PLANT SPECIES in SOUTH-EASTERN NEW SOUTH WALES



RESEARCH REPORT  
to the  
Australian Heritage Commission

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**Eucalyptus recurva** Crisp

Family: Myrtaceae

Conservation Status: Endangered (Code 2E/N/55)



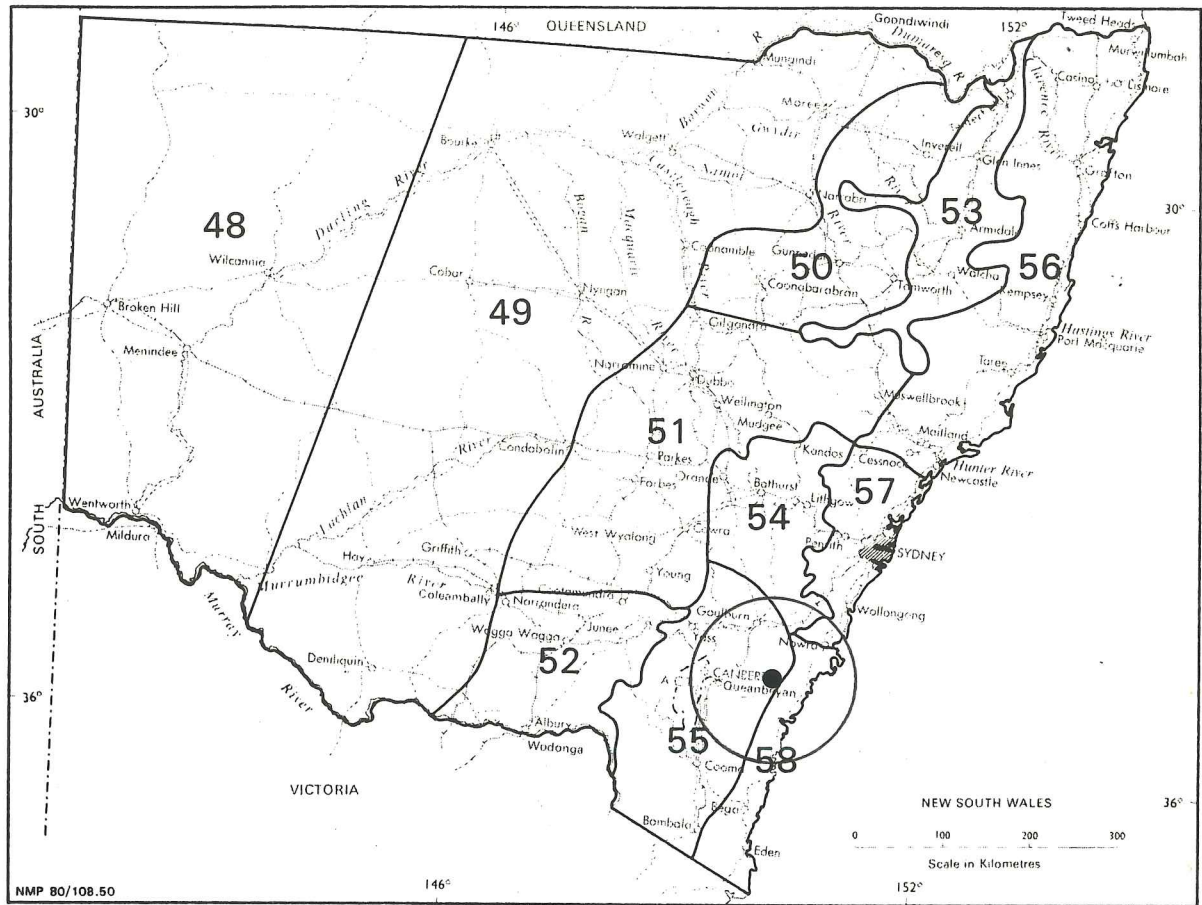
Flowering branchlet of *E. recurva* showing the short, opposite leaves with recurved tips characteristic of the species.

**Description**

A short mallee to 1.7 m tall with smooth, orange-brown to grey stems arising from a substantial lignotuber. *Leaves* opposite with each adjacent pair at right angles to the next, narrow-elliptic, tapered to both ends and the tips conspicuously recurved, to 2.8 cm long and 0.7 cm broad, with abundant oil glands. *Flowers* white, arranged in clusters of three on a common stalk to 5.5 mm long arising singly in the leaf axils. *Buds* broad-ovoid, up to 6 mm long and 5 mm broad and stalkless or almost so. *Fruit* an almost stalkless, depressed-hemispherical woody capsule 2.5 - 3.5 x 4.5 - 6 mm. There are 3 or 4 valves just below the capsule summit.

**Flowering:** January.

# Distribution of *Eucalyptus recurva*





This mallee clump is the only known population of *E. recurva*.

### **Distribution**

Known only from the one site north of Mongarlowe on the Southern Tablelands of New South Wales. It was discovered in 1985 by a local landholder, Mrs R. Jean. The population consists of 5 distinguishable clusters of stems which could either represent 5 discrete individuals or could all be just a single individual with the stem clusters arising from an extensive underground lignotuber. Allozyme studies of the 5 stem clusters by Moran have failed to reveal any distinguishable genetic differences amongst these clusters (Crisp, 1988). Although these studies cannot prove that the clusters are identical because of the limited number of isozymes that can be tested for, they do strengthen the hypothesis that *E. recurva* is represented by just one individual. Crisp (1988) reports that limited ground surveys in the vicinity of the Mongarlowe site have failed to locate anymore individuals of *E. recurva*. Crisp also notes that although there are similar heathland sites in the area most of these have been explored by botanists and it seems unlikely that further stands of *E. recurva* await discovery. Nevertheless, further surveys are warranted in the hope that more individuals can be discovered. Future surveys would be most efficiently conducted using a helicopter.

### **Habitat Summary**

Gentle north-facing slope with pale clay-loam supporting a low heathland which grades into low woodland.

### **Threat**

The major threat to the species arises from its curiosity value and the resulting visitation pressures, both on the plant directly through collection of foliage specimens and seed and through trampling and compaction of the vegetation and soil immediately around the plant. In addition, a vehicular track actually runs over the lignotuber on one side of the clump and regular use of this track by fisherman and others is suppressing spread of the plant in that direction. The track also provides easy access to the plant. Because of these threats the exact location of the site has not been detailed in this report but is on file at the Australian Heritage Commission.

Crisp (1988) notes that even in the absence of external threats *E. recurva* must be considered Endangered because of its extremely narrow genetic base. He reported that *E. recurva* is suffering the effects of inbreeding manifested by the production of very few seeds, low germination and establishment ( $\pm 10\%$ ) and poor seedling vigour. Therefore the chances of recruitment of new individuals in the field is low and survival of the species following a fire will depend upon regeneration from the lignotuber.

The size and spread of the *E. recurva* lignotuber suggests the plant is of considerable age (probably several hundred years) and that this mallee must have regenerated many times following past fires. Care will need to be taken that future fire frequency does not increase to levels which could adversely affect the plants survival.

### **Reservation**

Not reserved.

### **Cultivation**

Not yet successfully established in cultivation. As discussed under the Threat section of this report seed production and seedling vigour is very low. Although a few seedlings have been established at the Australian National Botanic Gardens, Canberra, all have subsequently died (M. Crisp, pers. comm.). It is possible the species may depend upon a symbiotic mycorrhizal relationship and it may be necessary to obtain soil samples from the site and

mix this soil with the potting medium so as to introduce the required microorganisms. Another possibility of propagating the species may be through tissue culture techniques. If the species can be successfully propagated it would be very popular with native plant enthusiasts as a garden specimen because of its natural rarity and relatively small size.

### **Recommendations**

The plant and a surrounding buffer area should be fenced off from visitors. An agreement with the landholder similar to that possible under the Heritage Agreement Scheme in South Australia needs to be drawn up for the longer term protection of the site.

Further research is warranted on ways to propagate the species. A means for successful propagation would reduce the threat from collectors on the plant in the field.

### **SITE DETAILS**

#### **Site 1 - Near Mongarlowe**

**Latitude and Longitude:** Information withheld.

**Altitude:** 640 m.

**Location:** Information withheld in this report due to the sensitive nature of the site but the location is on file at the Australian Heritage Commission.

**Land Status:** Private freehold.

**Area:** 18 m<sup>2</sup>.

**Population:** Probably only one individual.

#### **Habitat**

**Soil:** Pale gritty clay-loam.

**Substrate:** Not recorded.

**Topography:** Gentle slope in undulating terrain.

**Aspect:** North.

**Vegetation:** Low heath dominated by *Allocasuarina nana* and including stunted *Hakea dactyloides*, *Stylidium graminifolium*, *Boronia rhomboidea*, *Isopogon prostratus*, *Mirbelia oxylobioides*, *Dampiera* sp., *Goodenia* sp., *Lepidosperma* sp. and *Mitrasame* sp. The heath community grades into low *Eucalyptus pauciflora* - *E. mannifera* woodland.

**Survey Date:** 24/1/87.

**Voucher Specimen:** None taken due to the small population but collected previously by M. Crisp (C.B.G.).



Looking north towards the *E. recurva* clump (centre photo). The vehicular track running past the plant is clearly visible, as is the heath community and the low woodland surrounding the site.