



# *Kunzea cabbagei*

Maiden and E. Betche

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

*Kunzea cabbagei* is best surveyed during the flowering and fruiting season. Surveys should concentrate on open heath or mallee communities on damp, sandy infertile soils and rocky outcrops above 600m altitude. Plants prefer open conditions along roadsides or in exposed rocky areas.

Although habit and habitat characteristics are reliable, sterile plants are superficially similar to many other myrtaceous plants that are common in heath communities.

*K. cabbagei* can be identified from other *Kunzea* species by the 2-locular ovary, flowers with a silky hypanthium and the distinctive prostrate to ascending habit.

Where present, *K. cabbagei* is generally a dominant shrub in the understorey and counting of plants is difficult due to extensive vegetative spread.

Information on the age structure of the population, extent of flowering and fruiting should be recorded. Information on fire history will help to interpret results and help estimate the potential population size, taking into account dormant seeds in the soil seedbank.

## Life cycle of the species

The biology and life cycle of *K. cabbagei* is poorly known. Records and observations suggest that colonies are fairly persistent in the short term, that is, over 30 years. *K. cabbagei* is capable of both vegetative spread and production of flowers/fruit and, presumably, viable seed. However, relatively few seedlings or immature plants are seen, probably due to unfavourable conditions for germination and subsequent growth. Low levels of population recruitment from seed may be indicative of low genetic variability and inbreeding.

Although seed germination appears to be minimal, any loss in seed production and storage in the soil seedbank should be avoided in view of the longer-term risks of low genetic variability.

Habitat destruction destroys individuals and may fragment and or isolate any populations remaining on adjacent land.

Fire is likely to play an important role in the lifecycle of *K. cabbagei*, particularly in creating open habitat conditions and triggering seed germination. The frequency and intensity of fire will be important in determining recruitment and loss of individuals from the population. High intensity fires may be lethal to younger plants or seeds in the soil seedbank, particularly if soils are shallow. Low intensity fires, however, may not be sufficiently hot to stimulate germination and reduced frequency may allow canopy development.

Habitat modification may result in the loss of individuals and a decline in fecundity and recruitment to the population. Habitat modification may include changed fire regimes, establishment of canopy trees and shrubs, altered soil characteristics and drainage conditions and weed invasion. Activities which accelerate the successional process e.g. planting, nutrient enrichment, dumping of fill, sedimentation or

**NSW  
NATIONAL  
PARKS AND  
WILDLIFE  
SERVICE**

improved drainage are particularly a threat in view of the open habitat requirements of *K. cambagei*.

### **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 of *K. cambagei*.

Other threats include road widening and habitat degradation such as rubbish dumping and trail bikes.

### **Viable local population**

Most populations are medium to large (20→50 plants) and isolated except along the Wingecarribee River west of Berrima where plants are more extensively distributed.

### **A significant area of habitat**

Four main populations of *K. cambagei* have been documented, with the number of plants recorded in each as varying between 20–150. Loss of older plants appears to be minimal and more than compensated by vegetative spread. The private land at West Berrima which supports *K. cambagei* populations is a significant area of habitat that requires some form of management.

### **Isolation/fragmentation**

Existing populations of *K. cambagei* are typically isolated, a reflection of the

specific habitat requirements of the species and possibly a contraction of range over time. Further isolation or fragmentation should be avoided due to risks of genetic isolation and inbreeding.

### **Regional distribution of the habitat**

*K. cambagei* is restricted to the Sydney Basin Bioregion where its habitat of heath and mallee/scrub occurs sporadically in isolated areas at higher altitudes.

### **Limit of known distribution**

Much of the known range of *K. cambagei* is in fairly remote areas. The northern and western limit of *K. cambagei* is the Loombah Plateau (Blue Mountains National Park) and the southern and eastern limit is along the Wingecarribee River near Berrima.

### **Adequacy of representation in conservation reserves**

*K. cambagei* is currently inadequately conserved across its geographical range. Only the Wangaderry population and part of the Loombah Plateau population are in conservation reserves. The largest population, at the southern limit, is on private land.

### **Critical habitat**

Critical habitat cannot be declared for *K. cambagei* 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](http://www.npws.nsw.gov.au).

#### **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.