Department of
Sustainability and
Environment

National Recovery Plan for the Buxton Gum *Eucalyptus crenulata*

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Australian Government

Victoria
The Place To Be

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This Recovery Plan has been developed with the involvement and cooperation of a range of stakeholders, but individual stakeholders have not necessarily committed to undertaking specific actions. The attainment of objectives and the provision of funds may be subject to budgetary and other constraints affecting the parties involved. Proposed actions may be subject to modification over the life of the plan due to changes in knowledge.

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Cover photograph: Stand of Buxton Gum *Eucalyptus crenulata*, by Gary Backhouse.

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Summary

The Buxton Gum *Eucalyptus crenulata* is listed as Endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act* 1999 and Threatened under the Victorian *Flora and Fauna Guarantee Act* 1988. The species is endemic to Victoria, where there there are fewer than 670 plants remaining in two wild populations, to the north-east of Melbourne. Major threats include hybridisation, waterlogging and changes to hydrology, weeds and pathogens, insect attack and grazing. This national Recovery Plan for *E. crenulata* details the species' distribution and biology, conservation status, threats, and recovery objectives and actions necessary to ensure its long-term survival.

Species Information

Description

The Buxton Gum *Eucalyptus crenulata* Blakely & de Beuzev. also known as Silver Gum or Buxton Silver Gum, is a distinctive small tree of irregular form, growing to 12 m in height. The bark of the mature tree is persistent and rough over most of the lower trunk, giving way to smooth bark on the upper trunk and branches. The leaves are small, to 6 cm long, sessile, ovate, stem-clasping, crenulate and initially glaucous (blue green in colour with a hoary surface of white wax particles) but ageing to glossy dark green on the upper surface. The species is one of the few *Eucalyptus* that retain distinctive juvenile-type foliage throughout its life. The highly glaucous buds are ovoid with a beaked apex and are borne in clusters of up to eleven, in the axils of the upper leaves. The fruits are 4 mm long and 4 mm wide, cup shaped and sessile or shortly stalked. During spring, the species has clusters of cream, honey-scented flowers (description from Blakely & de Beuzeville 1939; Brooker & Slee 1996; Potts & Wiltshire 1997).

The Buxton Gum species occupies a monotypic series in the Eucalypts, *Crenulatae*. It is a biogeographically interesting species. It is one of a suite of glaucous, cold-adapted *Eucalyptus* species (sub-genus *Symphyomyrtus*) of the Section Maidenaria Pryor & Johnson that have highly restricted and/or disjunct distributions in eastern Australia. At least 25 species of *Eucalyptus* belonging to Maidenaria are considered rare or threatened in southeastern Australia. These species or their progenitors, were presumably more widespread in colder periods in the past climate of southern Australia (Pryor 1981).

Distribution

The Buxton Gum is endemic to south central Victoria, in the South Eastern Highlands IBRA Bioregion (DEH 2000). The species is known from only two natural populations that are about 64 km apart, and separated by the Great Dividing Range. One population occurs on the periodically swampy alluvial flats of the Acheron River valley near Buxton, and the second on the floodplain of the Yarra River at Yering.

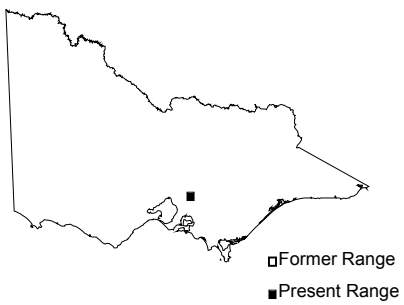

Figure 1. Distribution of *Eucalyptus crenulata* in Victoria

Maps showing the detailed distribution of Buxton Gum are available from the Department of Sustainability and Environment Flora Information System (DSE-FIS). The FIS is a state-wide repository for flora grid and site distribution data, photographs and text descriptions. This information is available on request in a variety of formats for natural resource management purposes.

Population Information

The Buxton Gum is rare in terms of both abundance and distribution. There are only two wild populations, at Buxton and Yering, occupying a total area of less than 10 ha, with fewer than 700 plants. The Buxton population is comprised of three small sub-populations that were presumably part of a more or less continuous distribution of the species in the area. These are now isolated from one another by clearing for pasture. The largest of these isolates, comprises approximately 600 individuals (Adams & Simmons 2000) and covers about 4 ha, of the 16.9 ha Buxton Silver Gum Reserve that is managed by Parks Victoria. The other smaller sub-populations are on freehold land. One consists of nine scattered trees on grazed land immediately adjacent to the reserve (sub-population B) and the other contains fewer than 50 individuals within a small remnant of vegetation approximately 0.5 km distant (sub-population C). The second population consists of approximately 8 mature trees scattered over 4 ha on the Yarra flats at Yering near the confluence of Olinda Creek and the Yarra River. The remaining individuals of the original population of Buxton Gum at this location are on freehold land. Numerous individuals have been established through planting of tubestock on the adjacent Spadonis Reserve that is managed by Parks Victoria.

The Buxton Gum is an attractive tree and is commonly grown as an ornamental across southeastern Australia, and there are now far more individuals in cultivation than in the wild. The Buxton Gum is naturalised at a number of locations outside its natural range, notably at Flowerdale (Victoria), but also as far afield as the Southern Tablelands of NSW (Carr 1993; Geoff Carr, Ecology Australia Pty. Ltd. pers. comm.).

Reserves
Buxton Silver Gum Reserve: 600 plants
Spadonis Reserve: 8 remnant plants (plus 200 planted)

Private Land
Buxton: two sub-populations of 9 and 50 plants
Yering: one sub-population of 10 plants

Habitat

The Yering population of Buxton Gum is on the floodplain of the Yarra River, in low-lying, wet/swampy habitats that are seasonally cold, having a high number of frosts per year. The soils are deep alluvial loams and the general topography is flat with scattered, periodically inundated depressions. Dominant associated overstorey species include *Melaleuca ericifolia* (Swamp Paperbark), *Eucalyptus ovata* (Swamp Gum) and *Eucalyptus viminalis* (Manna Gum). *Poa labillardieri*, introduced pasture grasses and herbs dominate the understorey (Adair 1978). Other notable plant species at the site includes *Pimelea pauciflora* (Poison Rice-flower) which is Rare in Victoria (Rosengren *et al.* 1983; Ross 2000). The site has been partially cleared for pasture and significant alterations have been made to the drainage patterns across the floodplain.

At Buxton, *E. crenulata* occupies a poorly drained hollow on the alluvial terraces adjacent to the Acheron River. The site is an open forest dominated by *E. ovata* with *Eucalyptus camphora* (Mountain Swamp Gum) on the wettest sites and *E. radiata* (Narrow-leaf Peppermint) on the drier raised areas. Buxton Gum grows as an understorey tree beneath *E. ovata*, but is the dominant overstorey species in a particularly waterlogged area. The relief is low and the soils are predominantly stiff clays derived from the weathering of Devonian marine sediments. The site is botanically rich and unusual. Of particular interest is the preponderance of *Gymnoschoenus sphaerocephalus* (Button Grass) and *Sphagnum cristatum* (Sphagnum Moss) in the understorey of the poorly drained parts of the reserve (Carr 1978; M. White unpubl. data). An outlying stand (sub-population C) in the Buxton area grows as an understorey tree in a remnant stand of *E. ovata* that occupies a broad swampy drainage line.

Threats

The Buxton Gum is likely to have been naturally rare and probably highly restricted prior to European settlement. However, the species has declined in the past 150 years as a consequence of clearing for farming. Evidence for decline through clearing at both Yering and Buxton is largely anecdotal. However, Pryor (1981) noted that the species had disappeared from several sites where it was previously recorded, and Willis (1972) notes the destruction of individual trees at the Buxton site. There is no evidence that the species existed in the wild at locations other than Yering and Buxton. Although deliberate clearing of wild *E. crenulata* has not been documented or observed in the last 25 years, the construction of a walking track at Buxton in the 1970s probably resulted in the loss of some individuals. Recent studies of aerial photography from 1952 to the present indicates that the area occupied by *E. crenulata* at Buxton has not decreased significantly over the last 50 years (Adams & Simmons 2000).

The Buxton Gum is currently threatened by a range of disturbances. Both remaining populations are extremely localised and are susceptible to weed invasion and other catastrophic events such as disease and wildfire. In addition, altered disturbance regimes may have impaired the ability of the species to effectively recruit new adult plants. Of acute concern at Buxton is the presence of the pathogenic soil-borne Cinnamon fungus (*Phytophthora cinnamomi*) (Adams & Simmons 2000) and an infestation by the twining hemiparasitic plant *Cassytha melantha* (Coarse Dodder-laurel). Insect attack (possibly an indicator of tree stress) has occurred at both sites, although infestations at Yering have been more severe. At Yering, the site has been grossly modified by past land use, river regulation and floodplain works. It is unlikely that the array of environmental parameters that maintained a self-sustaining population of *E. crenulata* at this site is still extant. Trees at both sites have exhibited poor health and a general loss of vigour. Hybridisation has occurred to a greater degree at Yering in comparison with Buxton, and should be considered a greater threat at this site. Cinnamon Fungus *Phytophthora cinnamomi* is present at the Buxton site could pose additional pressures on tree health and the health of species in the community. Grazing is a threat to the trees remaining on private land. The main threats are summarised as follows:

Hybridisation and genetic issues

At Yering, the mature Buxton Gums are thought to be hybrids between *E. crenulata* and *E. ovata* (Adams & Simmons 2000), and the characteristics of individual trees may not be entirely consistent with the species description in the botanical literature (Blakely & de Beuzeville 1939). Hybridisation between related *Eucalyptus* species is common and widely documented (Pryor & Johnson 1971, 1981; Griffin *et al.* 1988). Undoubtedly the exchange of genetic material facilitated by hybridisation has been important in the evolution of this large genus (Potts & Wiltshire 1997). However, for highly restricted relictual species such as *E. crenulata*, hybridisation and subsequent 'genetic swamping' may pose a long-term threat to the species. The threat of genetic degradation or swamping of small populations of endangered *Eucalyptus* species by related associated taxa has been documented by Potts (1989) and Prober *et al.* (1990).

Most of the wild 'Buxton Gums' at the Yering site are now thought to be introgressed hybrids between *E. ovata* and *E. crenulata* (Simmons & Parsons 1976; Adams & Simmons 2000). A limited number of 'pure' *E. crenulata* were recorded from the site in the 1970s (Simmons & Parsons 1976) and early 1980s (Albrecht 1983). However, pure breeding *E. crenulata* are thought to be no longer present at Yering (Adams & Simmons 2000). Genetic analysis of the population is required to confirm this. Hybrids between *E. crenulata* and *E. ovata* have been recorded at the Buxton site (Simmons & Parsons 1976) but were not observed during detailed site surveys carried out in 1999 (Adams & Simmons 2000).

The two populations of *E. crenulata* (note that all extant 'Buxton Gum like' trees at Yering may be the result of hybridisation with *E. ovata*) at Yering and Buxton are genetically isolated from one another as a consequence of natural processes. Further fragmentation of the Buxton population has resulted from clearing for pasture. This is likely to have resulted in a reduction in gene-flow between these 'sub-populations'.

Both populations are small with a limited number of individuals. There are a number of potential genetic consequences of population decline, isolation and fragmentation. Small 'effective populations' of plants may be subject to random genetic drift and inbreeding depression. Over

successive generations both these processes can result in a reduction in genetic diversity. Ultimately, reduced genetic diversity can affect the ability of populations to respond to environmental change or disease. However, the Buxton population of *E. crenulata* has persisted as a comparatively small, isolated population over an extended period of time and the potentially deleterious genetic consequences of in-breeding depression and genetic drift are not manifest at present.

Population dynamics and recruitment

Limited natural recruitment of seedlings has been observed within the remaining stands of Buxton Gum (Jelinek 1991; Albrecht 1983). The environmental conditions required for successful germination and establishment of the species in the wild are unknown. However, episodic perturbation of the environment that results in reduced competition, would appear to be one critical element towards the recruitment of adult plants. Whether this is facilitated by prolonged inundation, drought, fire or some other localised disturbance (or an efficacious combination or sequence of various disturbances) is unknown.

Approximately half of the *E. crenulata* population at Buxton was deliberately burnt in an attempt to promote seedling recruitment in 1992 (Jelinek 1993). The 'fire response' of mature *E. crenulata* included both the production of epicormic shoots and vegetative resprouting from 'lignotuber-like' basal swellings. Nine years after this fire, the presence of few if any of the limited number of seedlings found within the burnt area is attributable to promotion by the burn. Most of the initial flush of seedlings succumbed quickly, possibly as a consequence of parisitisation (by *Cassytha melantha*) and inter and intra specific competition by other plants (including adult *E. crenulata*).

Stem diameter has been used as a surrogate for age within the Buxton *E. crenulata* population (Adams & Simmons 2000). The results of the analysis of these data show that the population structure is consistent with that which one would expect of a long-lived, slow-growing species with infrequent recruitment and establishment events. The last significant recruitment of mature *E. crenulata* individuals would appear to have occurred at Buxton before systematic observation of the site began in the 1970s (Adams & Simmons 2000). Only 20 seedlings (individuals less than 1 m in height) were observed at the Buxton site in a recent comprehensive survey of the population (Adams & Simmons 2000). However, the lack of seedlings and young trees may not be cause for concern given that the species is long-lived. The population continues to produce significant amounts of viable seed (Steve Fletcher, Yarra Valley Tree Group pers. comm. 2000), although much of is assumed to be suitable habitat for *E. crenulata* is currently occupied by established adult trees.

A lack of natural recruitment of individual Buxton Gums (or hybrids) at the Yering site is not surprising given the degree to which the site has been disturbed and modified. The population currently consists of old remnant paddock trees, planted seedlings and young trees established in the 1980s and 1990s.

Tree decline

A relatively high proportion of *E. crenulata* at Buxton have been recorded as having crown 'die-back' and/or severely reduced canopy (Adams & Simmons 2000). The potential causes of poor canopy health are myriad and it is likely that several factors acting in concert are contributing to stand decline. Known or potential causes of tree decline other than natural senescence are listed below:

The hemi-parasitic climbing plant *Cassytha melantha* is known to infest approximately 40% of the trees at Buxton and of these individuals 48% were recorded as having poor canopy health (Adams & Simmons 2000). Cinnamon Fungus (*Phytophthora cinnamomi*) has recently been recorded from the Buxton site (Adams & Simmons 2000). This is a root parasite widely associated with the decline and mortality of a wide range of plant taxa in Australia. *Eucalyptus crenulata* has been recorded as 'generally tolerant' to the disease in nursery trials (Marks & Smith 1991). The impact of the fungus on the species in the field however, is unknown. In addition, *P. cinnamomi* potentially threatens a range of associated plant species at the site.

Severe insect attacks on *E. crenulata* have been noted at both localities. In May 1978, the Buxton population was severely damaged by an unidentified lepidopterous leaf miner that destroyed as much as 30% of the leaf tissue on some trees. Larvae of the Gum-leaf Skeletoniser (*Uraba lugens*) have attacked the species on several occasions at the Yering site.

While high levels of poor canopy health and low vigour characterise the Buxton population of *E. crenulata*, mortality is a rare occurrence. However, the Yering population of Buxton Gum is in a protracted decline. At least 7 of the original 15 mature trees have died at this site over the last 20 years. While a range of factors may have exacerbated decline or accelerated the on set of senescence, it is difficult to identify a specific cause. This is further exacerbated by the consequences of past land use (eg. soil compaction as a consequence of grazing and increased insect attack resulting from reduced numbers of resident insectivorous bird species).

Weed invasion

Introduced plants occur at both sites and several are serious environmental weeds, including Blackberry *Rubus fruticosa* species aggregate (a Weed of National Significance) at both sites and Japanese Honeysuckle *Lonicera japonica* at the Yering site. At Yering, a dense growth of aggressive introduced pasture grasses including *Phalaris aquatica* (Canary Grass) and *Holcus lanatus* (Yorkshire Fog) severely restricts germination.

Changes to hydrology

The Buxton Gum occurs in damp situations along river flats. Clearing and drainage of river flats at both sites, plus regulation of river flow in the Yarra River have most likely altered hydrology of the sites where the species occurs, perhaps leading to a long-term drying of sites, especially at Yering.

Recovery Information

Directions for recovery of *E. crenulata* include habitat conservation, restoration and management, combined with an understanding of the species' ecological and biological requirements. To achieve this, recovery actions are primarily structured to (i) acquire baseline data, (ii) assess habitat condition including ecological and biological function, (iii) protect populations to maintain or improve population growth and (iv) to engage the community in recovery actions.

Overall Objective

The **overall objective** of recovery is to minimise the probability of extinction of *Eucalyptus crenulata* in the wild and to increase the probability of important populations becoming self-sustaining in the long term.

Within the life span of this Recovery Plan, the **specific objectives** of recovery for *Eucalyptus crenulata* are to:

- Identify habitat that is critical, common or potential.
- Ensure that all populations and their habitat are legally protected
- Manage threats to populations
- Identify key biological functions
- Determine the growth rates and viability of populations
- Build community support for conservation

Program Implementation

The Recovery Plan will run for five years from the time of implementation and will be managed by the Department of Sustainability and Environment. A Threatened Flora Recovery Team, consisting of scientists, land managers and field naturalists will be established to oversee threatened flora recovery in Victoria in general. Technical, scientific, habitat management or education components of the Recovery Plan will be referred to specialist sub-committees on research, *in situ* management, community education and cultivation. Regional Recovery Teams will be responsible for preparing work plans and monitoring progress toward recovery.

Program Evaluation

The Recovery Team will be responsible for annual assessments of progress towards recovery. This Recovery Plan will be reviewed within five years of the date of adoption.

Recovery Actions and Performance Criteria

Action	Description	Performance Criteria
Specific objective 1		
Identify habitat that is critical, common or potential		
1.1	Accurately survey known habitat and collect floristic and environmental information relevant to community ecology and condition. **Responsibility: DSE**	• Completion of requirements for essential life history stages, recruitment and dispersal identified at known sites. • Habitat critical to the survival of the species is mapped.
Specific objective 2		
Ensure that all populations and their habitat are legally protected		
2.1	Ensure that State Government agencies including DSE, Local Government and other land management agencies will not support any application to clear, lop or harm wild *Eucalyptus crenulata.* **Responsibility: DSE**	• No permits to be granted to allow clearing, lop or harm of wild *E. crenulata.*
2.2	Initiate private land management agreements in consultation with private land owners under the *Victorian Conservation Trust Act* 1972, the *Conservation, Forests and Lands Act* 1987 and the *Wildlife Act* 1975 at Buxton. **Responsibility: DSE**	• Establish a private land protected area network for threatened taxa at Buxton
Specific objective 3		
Manage threats to populations		
3.1	Control threats from pest plants, predators and visitation by using integrated weed control and allowing vegetation to grow over the board-walk at Buxton and Yering sites. **Responsibility: PV**	• Measurable seedling recruitment/vegetative regeneration at the Buxton and Yering sites. • Reduction in plant mortality at the Buxton and Yering sites

Action	Description	Performance Criteria
Specific objective 4		
Identify key biological functions		
4.1	Evaluate current reproductive and regenerative status by determining longevity, fecundity and recruitment levels. **Responsibility: DSE**	• Regenerative potential quantified for each population.
4.2	Determine seed germination requirements by conducting laboratory and field trials aimed to identify key stimuli. **Responsibility: DSE**	• Stimuli for recruitment/regeneration identified. • Management strategies identified to maintain, enhance or restore processes fundamental to reproduction and survival.
Specific objective 5		
Determine the growth rates and viability of populations		
5.1	Continue to census the population at Buxton at 5 yearly intervals, using the methodology established by Adams & Simmons (2002). Incidental monitoring of the site to be carried out at least once a year. **Responsibility: DSE/PV**	• Annual census data.
Specific objective 6		
Build community support for conservation		
6.1	Identify opportunities for community involvement in the conservation of Buxton Gum. **Responsibility: DSE/PV**	• Liaison with community nature conservation groups.

Abbreviations

DSE Department of Sustainaibility and Environment
PV Parks Victoria

Management Practices

Management practices that will aid recovery

On-ground site management will aim to mitigate threatening processes to prevent declines and create conditions for maintenance or increase of population size. Major threats requiring management include accidental destruction, competition from pest plants, inappropriate fire regimes and grazing by pest animals. A range of strategies will be necessary to alleviate these threats including weed control, fire management, fencing, and control of pest animals. In addition, some *ex situ* conservation measures including seed storage and germination trails, will be required. Addressing major knowledge gaps is also required, especially determining the mechanisms underlying recruitment and regeneration. Successful *in situ* population management will be founded on understanding the relationships between *E. crenulata* and associated flora, and its response to environmental processes. These are directly linked to biological function and are thus vital to recovery. Demographic censusing will be necessary to gather life history information and to monitor the success of particular management actions. Surveys of known and potential habitat should continue to better define the distributions and size of populations. Providing information to land owners, managers and the broader community in the region will increase awareness of the species, provide for increased protection of existing populations, an increased likelihood on new populations being found, and reducing the risk of inadvertent damage occurring.

Management practices that will avoid significant adverse impacts

Providing land owners and managers with information on the location, distribution, habitat and ecology of *E. crenulata* will help to protect existing populations from inadvertent damage, and raising general awareness that may result in the location of any new populations. Negotiation with landowners with populations or suitable habitat on their properties will be required for protection of populations. Surveys in potential habitat likely to be impacted by any development proposals (including roadworks) will be required to avoid damage to or destruction of any currently unknown populations. Identification and protection of current and potential habitat such as through planning scheme overlays and restrictions on clearance of native vegetation is a high priority.

Affected interests

The two main populations at the Buxton Silver Gum Nature Conservation Reserve and Spadonis Reserve are both reserved for conservation purposes. The Buxton Silver Gum Nature Conservation Reserve is managed by DSE whilst the Spadonis Reserve is managed by Parks Victoria. Two populations occur on private land, and DSE is responsible for maintaining relationships with private landholders and will continue to undertake community liaison for this purpose. All parties including private landholders are aware of the presence of the species on the aforementioned sites. All agencies mentioned in this Recovery Plan are aware of and have approved the *Eucalyptus crenulata* Recovery Plan. The Friends of Cathedral Ranges State Park are currently seeking funding to assist with management of the Buxton Gum and will align their activities with recovery plan implementation as appropriate.

Role and interests of indigenous people

Indigenous communities on whose traditional lands *Eucalyptus crenulata* occurs will be advised, through the relevant DSE Regional Indigenous Facilitator, of the preparation of this Recovery Plan and invited to provide comments if so desired. Indigenous communities will be invited to be involved in the implementation of the Recovery Plan.

Benefits to other species/ecological communities

The Recovery Plan includes a number of potential biodiversity benefits for other species and vegetation communities in Victoria. Principally, this will be through the protection and management of habitat. The vegetation at Buxton is particularly diverse and unusual, whilst the site at Yering is also important habitat to the for two other threatened species, *Pimelea pauciflora* and *Pomaderris vaccinifolia*. Conservation actions to preserve *Eucalyptus crenulata*

at these sites will also contribute towards the conservation of the unusual habitat that the species occupies.

Social and economic impacts

The implementation of this Recovery Plan is unlikely to cause significant adverse social and economic impacts. Actions associated with the recovery of *Eucalyptus crenulata* are unlikely to affect any existing industry or private party. The largest and most important stand of *E. crenulata* is on publicly owned land, permanently reserved for nature conservation. In total less than 2 ha of freehold land supports wild individuals. The Victorian Government will not permit the clearing or indirect destruction of remaining stands of *E. crenulata* on freehold land. This may present an insignificant cost to two landholders in the Buxton area with very small remnant stands on their land. Where Buxton Gum occurs on freehold land, proposed changes to land use to promote conservation outcomes, will only be sought by voluntary agreement. In addition, where agreement is reached with landholders, Government will bear the full cost of proposed research and works.

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Priority, Feasibility and Estimated Costs of Recovery Actions

Action	*Description*	*Priority*	*Feasibility*	*Responsibility*	*Cost estimate*					
					Year 1	Year 2	Year 3	Year 4	Year 5	Total
1	**Habitat requirements**									
1.1	Survey known habitat	2	100%	DSE	$0	$10,000.	$0	$0	$0	**$10,000**
2	**Legal protection of habitat**									
2.2	Protect species from damage	1	75%	DSE	$10,000	$5,000.00	$0	$0	$0	**$15,000**
2.3	Protect private land habitat	1	50%	DSE	$0	$8,000	$6,000	$0	$0	**$14,000**
3	**Manage threats**									
3.1	Control threats	1	75%	PV	$10,000	$8,000	$8,000	$8,000	$8,000	**$42,000**
4	**Identify key biol.l functions**									
4.1	Evaluate reproductive status	1	75%	DSE	$12,000	$12,000	$12,000	$10,000	$0	**$46,000**
4.2	Seed germination	1	75%	DSE	$12,000	$12,000	$12,000	$10,000	$0	**$46,000**
5	**Growth rates, pop. viability**									
5.1	Conduct censusing	1	100%	DSE/PV	$15,000	$15,000	$15,000	$15,000	$15,000	**$75,000**
5.2	Collate, analyse and report	2	100%	DSE	$0	$0	$0	$0	$10,000	**$10,000**
6	**Education, communication**									
6.1	Community extension	3	100%	DSE	$3,000	$3,000	$3,000	$3,000	$3,000	**$15,000**
	TOTAL				**$68,000**	**$79,000**	**$62,000**	**$52,000**	**$42,000**	**$303,000**