

INTERIM RECOVERY PLAN NO. 280

# WOOLLY LYSIOSEPALLUM

*(Lysiosepalum abollatum)*

## INTERIM RECOVERY PLAN

### 2008-2013



September 2008

Department of Environment and Conservation  
Kensington

  
**Natural Heritage Trust**  
*Helping Communities Helping Australia*  
An Australian Government Initiative



## FOREWORD

Interim Recovery Plans (IRPs) are developed within the framework laid down in Department of Conservation and Land Management (CALM) Policy Statements Nos. 44 and 50. Note: the Department of CALM formally became the Department of Environment and Conservation (DEC) in July 2006. DEC will continue to adhere to these Policy Statements until they are revised and reissued.

IRPs outline the recovery actions that are required to urgently address those threatening processes most affecting the ongoing survival of threatened taxa or ecological communities, and begin the recovery process.

DEC is committed to ensuring that Threatened taxa are conserved through the preparation and implementation of Recovery Plans (RPs) or IRPs, and by ensuring that conservation action commences as soon as possible and, in the case of Critically Endangered (CR) taxa, always within one year of endorsement of that rank by the Minister.

This IRP will operate from September 2008 to August 2013 but will remain in force until withdrawn or replaced. It is intended that, if the species is still ranked as CR at the end of the five-year term, this IRP will be reviewed and the need for further recovery actions assessed.

This IRP was given regional approval on 10 November 2008 and was approved by the Director of Nature Conservation on 19 November 2008. The provision of funds identified in this IRP is dependent on budgetary and other constraints affecting DEC, as well as the need to address other priorities.

Information in this IRP was accurate at September 2008.

## IRP PREPARATION

This IRP was prepared by Craig Douglas<sup>1</sup>, Lorraine Duffy<sup>2</sup>, Joel Collins<sup>3</sup> and Kym Pryor<sup>4</sup>.

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## ACKNOWLEDGMENTS

The following people have provided assistance and advice in the preparation of this IRP:

Andrew Brown	Threatened Flora Coordinator, Species and Communities Branch, DEC
Andrew Crawford	Technical Officer, Threatened Flora Seed Centre, DEC
Amanda Shade	Assistant curator of displays and development, Botanic Gardens Parks Authority

Thanks also to the staff of the W.A. Herbarium for providing access to Herbarium databases and specimen information, and DEC's Species and Communities Branch for assistance.

**Cover photograph by** Anne Cochrane.

## CITATION

This IRP should be cited as:

Department of Environment and Conservation. (2008). Woolly *Lysiosepalum* (*Lysiosepalum abollatum*) Interim Recovery Plan 2008-2013. Interim Recovery Plan No. 280 Department of Environment and Conservation, Western Australia.

## SUMMARY

<b>Scientific Name</b>	<i>Lysiosepalum abollatum</i>	<b>Common Name</b>	Woolly Lysiosepalum
<b>Family</b>	Sterculiaceae	<b>Flowering Period</b>	August - October
<b>DEC Region</b>	Wheatbelt	<b>DEC District</b>	Avon-Mortlock
<b>Shire</b>	Wongan-Ballidu	<b>Recovery Team</b>	Avon-Mortlock District Threatened Flora and Communities Recovery Team
<b>NRM Region</b>	Avon		

**Illustrations and/or further information:** Stack, G., Willers, N., Fitzgerald, M. and Brown, A. (2006). Western Australian Wildlife Management Program No. 39: *Declared rare and poorly known flora largely restricted to the Shire of Wongan-Ballidu*. Department of Conservation and Land Management, Perth, Western Australia; Johnston, W., Thomas, S., Dougall, S., Hamersley, C., Phillips, L. and Smith, I. (2006). *Threatened, poorly known and other flora of Wongan-Ballidu*. Department of Environment and Conservation, Perth, Western Australia. pp 94; Wilkins, C.F. and Chappill, J.A. (2001). A taxonomic revision of the Western Australian genus *Lysiosepalum* (Malvaceae: Lasiopetaleae). *Nuytsia*. **13(3)**: 571-584; Western Australian Herbarium (2007). *FloraBase 2 – Information on the Western Australian Flora* (Accessed 2007). Department of Environment and Conservation, Western Australia. <http://www.florabase.calm.wa.gov.au>.

**Current status:** *Lysiosepalum abollatum* was declared as Rare Flora in 2002 under the Western Australian *Wildlife Conservation Act 1950* and is currently ranked as Critically Endangered (CR) under World Conservation Union (IUCN 2001) Red List criteria B1ab(iii,iv,v)+B2ab(iii,iv,v); C2a(ii) due to being known from fewer than 250 mature individuals with at least 90% in one population, the extent of occurrence being less than 100 km<sup>2</sup>, the area of occupancy less than 10 km<sup>2</sup> and there being a decline in habitat quality and number of mature individuals. The species is not currently listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act 1999).

*Lysiosepalum abollatum* has a severely restricted distribution in the Wongan Hills area where it is known from a single population on Private Property. The main threats are poor recruitment and drought.

**Description:** *Lysiosepalum abollatum* is a dense shrub to 1.5 high by 1.5 m across. White woolly hairs cover young growth and inflorescences. Leaves are small, narrow and mid-green in colour with hairs covering both sides. Inflorescences are between 40 and 90 mm in length, and contain up to eight flowers with flat, dark pink petals. The petals are surrounded by an enlarged, ovate to elliptic calyx that is mauve to pink in colour.

**Distribution and habitat:** *Lysiosepalum abollatum* is confined to the Wongan Hills where it grows under open mallee-heath in orange-brown, sandy clay over laterite at the base and lower slopes of hills.

**Habitat critical to the survival of the species, and important populations:** Given that *Lysiosepalum abollatum* is ranked as CR, it is considered that all known habitat for the wild population is critical to the survival of the species, and that the wild population is an important population.

**Benefits to other species or ecological communities:** Recovery actions implemented for *Lysiosepalum abollatum* will improve the status of associated native vegetation. *Acacia pharangites* (CR) and *Acacia congesta* subsp. *wonganensis* (Priority 2) occur in association with *L. abollatum* and will also benefit from recovery actions.

**International obligations:** This plan is fully consistent with the aims and recommendations of the Convention on Biological Diversity, ratified by Australia in June 1993, and will assist in implementing Australia's responsibilities under that convention. *Lysiosepalum abollatum* is not listed under any specific international treaty and this IRP does not affect Australia's obligations under any international agreements.

**Indigenous Consultation:** Involvement of the Indigenous community is being sought through the South West Aboriginal Land and Sea Council (SWALSC) and the Department of Indigenous Affairs, to assist in the identification of cultural values for land occupied by *Lysiosepalum abollatum* or groups with a cultural connection to land that is important for the species' conservation and to determine whether there are any issues or interests identified in the plan. A search of the Department of Indigenous Affairs Aboriginal Heritage Sites Register has identified that there are no sites of Aboriginal significance at or near the population of the species covered by this IRP. Where no role is identified for the indigenous community associated with this species in the

development of the recovery plan, opportunities may exist through cultural interpretation and awareness of the species. Indigenous involvement in the implementation of recovery actions will be encouraged.

Continued liaison between DEC and the indigenous community will identify areas in which collaboration will assist implementation of recovery actions.

**Social and economic impact:** The implementation of this recovery plan may have some social and economic impact as *Lysiosepalum abollatum* occurs on private land. Where populations are located on private land recovery actions refer to continued liaison between stakeholders.

**Affected interests:** Stakeholders potentially affected by the implementation of this plan are the owners of the private property on which the species occurs.

**Evaluation of the plan's performance:** The Department of Environment and Conservation, in conjunction with the Avon-Mortlock District Threatened Flora and Communities Recovery Team (AMDTFCRT) will evaluate the performance of this IRP. In addition to annual reporting on progress and evaluation against the criteria for success and failure, the plan will be reviewed following five years of implementation.

**IRP objective:** The objective of this IRP is to abate identified threats and maintain or enhance a viable *in situ* population to ensure the long-term preservation of the species in the wild.

#### Recovery criteria

**Criteria for success:** The number of populations have increased and/or the number of mature individuals have increased by twenty five percent or more over the term of the plan.

**Criteria for failure:** The number of mature individuals have decreased by twenty five percent or more over the term of the plan.

**Existing Recovery Actions:** The following recovery actions have been or are currently being implemented:

1. The private land owners have been made aware of the threatened nature of this species, its location and their legal obligations to protect it.
2. DEC's Threatened Flora Seed Centre (TFSC) has seed of *Lysiosepalum abollatum* in storage.
3. The Botanic Gardens and Parks Authority (BGPA) have twelve cloned plants of *Lysiosepalum abollatum* in their nursery, sourced from three wild plants.
4. *Lysiosepalum abollatum* has been fenced to exclude stock and other herbivores.
5. The AMDTFCRT is overseeing the implementation of this IRP and will include it in its annual report to DEC's Corporate Executive and funding bodies.
6. Staff from DEC's Avon-Mortlock District are monitoring the population.

#### Recovery actions

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| <ol style="list-style-type: none"> <li>1. Coordinate recovery actions</li> <li>2. Liaise with relevant land managers and indigenous groups</li> <li>3. Monitor population</li> <li>4. Collect seed and other material to preserve genetic diversity</li> <li>5. Develop and implement fire disturbance trials</li> <li>6. Promote awareness</li> </ol> | <ol style="list-style-type: none"> <li>7. Map habitat critical to the survival of <i>Lysiosepalum abollatum</i></li> <li>8. Conduct further surveys</li> <li>9. Obtain biological and ecological information</li> <li>10. Develop and implement a translocation proposal</li> <li>11. Review the Plan and need for further recovery actions</li> </ol> |
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## 1. BACKGROUND

### History

*Lysiosepalum abollatum* was first collected by Robert Coveny and Bruce Maslin in 1976, and was formally described by C.F. Wilkins and J.A. Chappill in 2001 (Wilkins and Chappill 2001).

In 1988 and 1991 the Department of Conservation and Land Management (CALM) commissioned two flora and vegetation surveys covering parts of the Wongan Hills. Neither survey found *Lysiosepalum abollatum*. However, the 1988 survey in the Mt O'Brien area by Anne Coates referred to the presence of *Lysiosepalum nigrosum* which is likely to be a misspelling of *L. rugosum*, by which name *L. abollatum* would have been known at that time (Wilkins 2001).

Between 1992 and 1999 staff from CALM conducted additional threatened flora surveys in the Wongan Hills area. During a survey in 1993 a specimen collected north-west of Mt O'Brien was formally identified as *Lysiosepalum abollatum* by Western Australian Herbarium staff.

In 1996 staff from the Botany Department at the University of Western Australia conducted a review of the Western Australian genus *Lysiosepalum* and concluded that *L. abollatum* is only found in the Mt. O'Brien area, while the closely related *L. rugosum* occurred in other parts of the Wongan Hills.

The area of occupancy of *Lysiosepalum abollatum* prior to clearing for agriculture is unknown. However, it is possible that the species once occurred over a larger range as some areas of bushland surrounding the population have been cleared.

Despite many searches, *Lysiosepalum abollatum* has only been found at a single site in the Wongan Hills where it is currently known from a population of 129 mature individuals.

### Description

*Lysiosepalum abollatum* is an erect shrub to 1.5 m high and wide. Young growth and inflorescences are covered in stellate hairs and have a woolly appearance. The mid-green, narrow oval-shaped leaves may be erect or spreading and are typically 10-16 mm long by 2-3 mm wide, with stellate hairs on both surfaces. The inflorescence consists of up to eight flowers and is 40-90 mm long. Flowers are supported by a peduncle 10-35 mm long. Calyx lobes are 6-12 mm long by 3-3.5 mm wide and are ovate to elliptic in shape with an acute apex. Horizontal, flat dark red petals 0.8-1.5 mm long by 0.8-1.3 mm wide are usually present (Wilkins and Chappill 2001).

### Distribution and habitat

*Lysiosepalum abollatum* is confined to the Wongan Hills.

Habitat is orange-brown, sandy clay over laterite in open mallee woodland. Species associated with *Lysiosepalum abollatum* include *Eucalyptus ebbanoensis*, *Acacia pharangites* and *A. congesta* subsp. *wonganensis* over *Halgania*, *Allocasuarina*, *Leptospermum* and *Hibbertia* species.

### Summary of population land vesting, purpose and tenure

Pop. No. & Location	DEC District	Shire	Vesting	Purpose	Manager
<b>1a. NW of Wongan Hills</b>	Avon-Mortlock	Wongan-Ballidu	Freehold	Private Property	Landholders
<b>1b. NW of Wongan Hills</b>	Avon-Mortlock	Wongan-Ballidu	Freehold	Private Property	Landholders

Populations in **bold text** are considered to be important populations

## Biology and ecology

*Lysiosepalum abollatum* is a member of the Sterculiaceae family. Currently, its response of to fire is unknown but is likely to be similar to other Sterculiaceae that respond well to fire by recruiting from soil-stored seed (Roy-Chowdhury 2003).

Scarification of *Lysiosepalum abollatum* seed produces good germination under laboratory conditions and it is therefore likely that soil disturbance or fire is required for natural germination. This is supported by field observations that show seedlings to mainly occur on ant mounds and where water erosion has disturbed soil.

Under laboratory conditions fresh *Lysiosepalum abollatum* seed has a high viability with a germination rate of 96%.

## Threats

*Lysiosepalum abollatum* was declared as Rare Flora in 2002 under the Western Australian *Wildlife Conservation Act 1950* and is currently ranked as Critically Endangered (CR) under World Conservation Union (IUCN 2001) Red List criteria B1ab(iii,iv,v)+B2ab(iii,iv,v); C2a(ii) due to it being known from fewer than 250 mature individuals in one population, the extent of occurrence being less than 100 km<sup>2</sup>, the area of occupancy less than 10 km<sup>2</sup> and there being a decline in habitat quality and number of mature individuals. The species is not currently listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act 1999). Threats include:

- **Inadequate recruitment.** Subpopulation 1a, possibly as a result of little natural disturbance such as fire, produces very few seedlings and Subpopulation 1b, which currently contains only one plant, has never produced seedlings.
- **Drought.** The poor health of many associated native plant species through recent drought has resulted in a decline in habitat quality.

The intent of this plan is to provide urgent recovery actions for *Lysiosepalum abollatum*. Although climate change may have a long-term effect on the species, actions taken directly to prevent the impact of climate change are beyond the scope of this plan.

## Summary of population information and threats

Pop. No. & Location	Land Status	Year/No. plants	Current Condition	Threats
<b>1a. NW of Wongan Hills</b>	Private Property	1999 99 (9) 2001 130 (9) 2003 128 (1) [11]	Healthy	Poor recruitment
<b>1b. NW of Wongan Hills</b>	Private Property	1996 1 2001 1 2003 1	Healthy	Poor recruitment

Populations in **bold text** are considered to be important populations; Note: ( ) = number of seedlings, [ ] = number dead

## Guide for decision-makers

Section 1 provides details of current and possible future threats. Developments or land clearing in the immediate vicinity of any of the populations of *Lysiosepalum abollatum* require assessment. No developments or clearing should be approved unless the proponents can demonstrate that their actions will not have a significant impact on the species, its habitat or potential habitat or on the local surface hydrology, such that drainage in the habitat of the species would be altered.

## Habitat critical to the survival of the species, and important populations

Given that *Lysiosepalum abollatum* is ranked as CR, it is considered that all known habitat for the wild population is critical to the survival of the species, and that the wild population is an important population.

Habitat critical to the survival of *Lysiosepalum abollatum* includes the area of occupancy of the known population, areas of similar habitat surrounding the known population, these providing potential habitat for population expansion and for pollinators, additional occurrences of similar habitat that may contain undiscovered populations of *Lysiosepalum abollatum* or be suitable sites for future translocations, and the local catchment for the surface and/or groundwater that maintains the habitat of the species.

### **Benefits to other species or ecological communities**

Recovery actions implemented for *Lysiosepalum abollatum* will improve the status of associated native vegetation. *Acacia pharangites* (CR) and *Acacia congesta* subsp. *wonganensis* (Priority 2) occur in association with *L. abollatum* and will also benefit from recovery actions.

### **International obligations**

This plan is fully consistent with the aims and recommendations of the Convention on Biological Diversity, ratified by Australia in June 1993, and will assist in implementing Australia's responsibilities under that convention. *Lysiosepalum abollatum* is not listed under any specific international treaty and this IRP does not affect Australia's obligations under any other international agreements.

### **Indigenous Consultation**

Involvement of the Indigenous community is being sought through the South West Aboriginal Land and Sea Council (SWALSC) and the Department of Indigenous Affairs, to assist in the identification of cultural values for land occupied by *Lysiosepalum abollatum* or groups with a cultural connection to land that is important for the species' conservation and to determine whether there are any issues or interests identified in the plan. A search of the Department of Indigenous Affairs Aboriginal Heritage Sites Register has identified that there are no sites of Aboriginal significance at or near the population of the species covered by this IRP. Where no role is identified for the indigenous community associated with this species in the development of the recovery plan, opportunities may exist through cultural interpretation and awareness of the species. Indigenous involvement in the implementation of recovery actions will be encouraged.

Continued liaison between DEC and the indigenous community will identify areas in which collaboration will assist implementation of recovery actions.

### **Social and economic impact**

The implementation of this recovery plan may have some social and economic impact as *Lysiosepalum abollatum* occurs on private land. Where populations are located on private land, recovery actions refer to continued liaison between stakeholders.

### **Affected interests**

Stakeholders potentially affected by the implementation of this plan are the owners of the private property on which the species occurs.

### **Evaluation of the plan's performance**

The Department of Environment and Conservation, in conjunction with the Avon-Mortlock District Threatened Flora and Communities Recovery Team (AMDTCRT) will evaluate the performance of

this IRP. In addition to annual reporting on progress and evaluation against the criteria for success and failure, the plan will be reviewed following five years of implementation.

## 2. RECOVERY OBJECTIVE AND CRITERIA

### Objective

The objective of this IRP is to abate identified threats and maintain or enhance a viable *in situ* population to ensure the long-term preservation of the species in the wild.

**Criteria for success:** The number of populations have increased and/or the number of mature individuals have increased by twenty five percent or more over the term of the plan.

**Criteria for failure:** The number of mature individuals have decreased by twenty five percent or more over the term of the plan.

## 3. RECOVERY ACTIONS

### Existing recovery actions

The private land owners have been made aware of the threatened nature of the species, its location and their legal obligations to protect it.

DEC's Threatened Flora Seed Centre (TFSC) has *Lysiosepalum abollatum* seed in storage from collections made in November 2000 and December 2005. Initial germination rates for the 2000 collection was 96% (the 2005 collection is yet to be tested).

The Botanic Gardens and Parks Authority (BGPA) have twelve cloned *Lysiosepalum abollatum* plants in their nursery, sourced from three wild plants.

*Lysiosepalum abollatum* has been fenced to exclude stock and other herbivores.

In 2000, similar nearby habitat was surveyed for *Lysiosepalum abollatum* and included parts of Mount Matilda, Rogers Nature Reserve and Bald Hill. No new populations were found.

The AMDTFCRT is overseeing the implementation of this IRP and will include it in its annual report to DEC's Corporate Executive and funding bodies.

Staff from DEC's Avon-Mortlock District are monitoring the known population.

### Future recovery actions

Where recovery actions are implemented on lands other than those managed by DEC, permission has been or will be sought from the appropriate land managers prior to actions being undertaken. The following recovery actions are roughly in order of descending priority, influenced by their timing over the term of the plan. However this should not constrain addressing any recovery action if funding is available and other opportunities arise.

#### 1. Coordinate recovery actions

The Avon Mortlock District Threatened Flora and Communities Recovery Team (AMDTCRT) will coordinate recovery actions for *Lysiosepalum abollatum* and other Declared Rare Flora in the District. They will include information on progress in their annual report to DEC's Corporate Executive and funding bodies.

**Action:** Coordinate recovery actions

**Responsibility:** AMDTFCRT  
**Cost:** \$1,400 annually.

## 2. Liaise with relevant land managers and indigenous groups

Staff from DEC's Avon-Mortlock District will liaise with land managers to ensure that the population is not accidentally damaged or destroyed. Input and involvement will also be sought from indigenous groups if they have an active interest in the area that is habitat for *Lysiosepalum abollatum*.

**Action:** Liaise with relevant land managers and indigenous groups  
**Responsibility:** DEC (Avon-Mortlock District) through the AMDTFCRT  
**Cost:** \$500 annually.

## 3. Monitor population

Annual monitoring of factors such as habitat degradation (including weed invasion, erosion and grazing), population stability (expansion or decline), pollinator activity, seed production, recruitment, longevity and predation is essential and will be met under this action.

**Action:** Monitor population  
**Responsibility:** DEC (Avon-Mortlock District) through AMDTFCRT  
**Cost:** \$500 annually.

## 4. Collect seed and other material to preserve genetic diversity

Preservation of genetic material is essential to guard against extinction of the species if the wild population is lost. Collections should aim to sample and preserve the maximum range of genetic diversity possible and should be determined by an appropriate molecular technique such as genetic fingerprinting. The "Germplasm Conservation Guidelines for Australia" produced by the Australian Network for Plant Conservation (ANPC) should be used to guide this process (ANPC 1997).

**Action:** Collect seed and other material to preserve genetic diversity  
**Responsibility:** DEC (Avon-Mortlock District) through AMDTFCRT  
**Cost:** \$2,800 in years 1, 3 and 5.

## 5. Develop and implement fire disturbance trials

DEC's Avon-Mortlock District will, with the permission of private landowners, conduct research into the effectiveness of fire disturbance in stimulating the germination of soil stored seed of *Lysiosepalum abollatum*. Care will be taken to avoid competition with existing live plants. The results of trials will be monitored and if successful further recovery burns undertaken. Attention will be given to the following to ensure maximum recruitment, while at the same time maintaining the integrity of the population.

Burn discrete dead plants.

**Action:** Develop and implement fire disturbance trials  
**Responsibility:** DEC (Science Division, Avon-Mortlock District) through the AMDTFCRT, and relevant authorities  
**Cost:** \$3,400 in the first year, \$700 in years 2 and 4 and \$2,500 in years 3 and 5.

## 6. Promote awareness

The importance of biodiversity conservation and the protection of *Lysiosepalum abollatum* will be promoted to the public. This will be achieved through an information campaign using local print and electronic media and by setting up poster displays. An A4 sized information sheet that provides a description of the species and information about threats and recovery actions will be developed for *L. abollatum* and will be distributed to local land owners, relevant authorities and volunteer organizations, libraries and schools. It is hoped that the poster will result in the discovery of new populations. Formal links with local naturalist groups and interested individuals should also be encouraged.

To minimize the risk of accidental or deliberate destruction and to respect the privacy of the land owner, it is recommended that the exact location of *Lysiosepalum abollatum* be kept from the general public. Such information should, however, be given to relevant land managers and government authorities.

**Action:** Promote awareness  
**Responsibility:** DEC (Avon-Mortlock District, Species and Communities Branch (SCB) and Strategic Development and Corporate Affairs Division) through the AMDTFCRT  
**Cost:** \$1,600 in the first year and \$1,000 in years 2 to 5.

## 7. Map habitat critical to the survival of *Lysiosepalum abollatum*

It is a requirement of the EPBC Act that spatial data relating to critical habitat be determined. Although habitat critical to the survival of *Lysiosepalum abollatum* is described in Section 1, the areas described have not yet been mapped and that will be addressed under this action. If additional populations are located, critical habitat will also be determined and mapped for them.

**Action:** Map habitat critical to the survival of *Lysiosepalum abollatum*  
**Responsibility:** DEC (Avon Mortlock District and SCB) through AMDTFCRT  
**Cost:** \$3,100 in the first year.

## 8. Conduct further surveys

Areas of potential habitat will be surveyed for the presence of *Lysiosepalum abollatum* during the plants flowering period (August to October). All surveyed areas will be recorded and the presence or absence of *L. abollatum* documented to increase survey efficiency and reduce duplicate surveys. Where possible, volunteers from the local community, wildflower societies and naturalists clubs should be involved in surveys, supervised by DEC staff.

**Action:** Conduct further surveys  
**Responsibility:** DEC (Avon-Mortlock District) through AMDTFCRT  
**Cost:** \$3,900 in years 1, 3 and 5.

## 9. Obtain biological and ecological information

Improved knowledge of the biology and ecology of *Lysiosepalum abollatum* will provide a better scientific basis for managing the wild population and will include.

1. Investigating the life history characteristics of the species.
2. Investigating the species' response to disturbance.
3. Investigating the pollination biology of the species.
4. Investigating conditions necessary for germination

## 5. Determining the longevity of plants, and time taken to reach maturity

<b>Actions:</b>	Obtain biological and ecological information
<b>Responsibility:</b>	DEC (Science Division, TFSC, Avon-Mortlock District) and BGPA through the AMDTFCRT
<b>Cost:</b>	\$13,000 in years 1 to 3 and \$18,000 in year 4

## 10. Develop and implement a translocation proposal

*Lysiosepalum abollatum* has a restricted area of occurrence, making the species particularly vulnerable to stochastic events. A translocation proposal for the species will be prepared and implemented to establish a second population of the species in the wild.

Information on the translocation of threatened animals and plants in the wild is provided in CALM's *Policy Statement No. 29: Translocation of Threatened Flora and Fauna* (CALM 1995). All translocation proposals require endorsement by the Director of Nature Conservation.

<b>Action:</b>	Develop and implement a translocation proposal
<b>Responsibility:</b>	DEC (Avon-Mortlock District) through the AMDTFCRT
<b>Cost:</b>	\$5,000 in year 2 and \$1,000 per annum for monitoring and management in subsequent years.

## 11. Review the Plan and need for further recovery actions

If *Lysiosepalum abollatum* is ranked as CR at the end of the fifth year of this IRP, the plan will be reviewed and the need for further recovery actions assessed.

<b>Action:</b>	Review the Plan and need for further recovery actions
<b>Responsibility:</b>	DEC (SCB, Avon-Mortlock District) through AMDTFCRT
<b>Cost:</b>	\$1,500 in year 5.

## Summary of recovery actions

Recovery Actions	Priority	Responsibility	Completion date
Coordinate recovery actions	High	AMDTFCRT	Ongoing
Liaise with relevant land managers and indigenous groups	High	DEC (Avon-Mortlock District) through the AMDTFCRT	Ongoing
Monitor population	High	DEC (Avon-Mortlock District) through AMDTFCRT	Ongoing
Collect seed and other material to preserve genetic diversity	High	DEC (Avon-Mortlock District) and BGPA through AMDTFCRT	Ongoing
Develop and implement fire and disturbance trials	High	DEC (Science Division, Avon-Mortlock District) through the AMDTFCRT, and relevant authorities	Developed by 2008 with implementation ongoing
Promote awareness	High	DEC (Avon-Mortlock District, SCB and Strategic Development and Corporate Affairs Division) through the AMDTFCRT	Ongoing
Map habitat critical to the survival of <i>Lysiosepalum abollatum</i>	High	DEC (Avon-Mortlock District, Species and Communities Branch (SCB)) through AMDTFCRT	2008
Conduct further surveys	High	DEC (Avon-Mortlock District) through AMDTFCRT	2012
Obtain biological and ecological information	High	DEC (Science Division, TFSC, Avon-Mortlock District) and BGPA through the AMDTFCRT	2011
Develop and implement a translocation proposal	Moderate	DEC (Avon-Mortlock District) through the AMDTFCRT	2009 with ongoing monitoring and management
Review the Plan and need for further recovery actions	Moderate	DEC (SCB, Avon-Mortlock District) through AMDTFCRT	2012

#### 4. TERM OF PLAN

This IRP will operate from September 2008 to August 2013 but will remain in force until withdrawn or replaced. If the species is still ranked CR after five years, the need for further recovery actions and an update of this IRP will be assessed.

#### 5. REFERENCES

- Australian Network for Plant Conservation. (1997). *Germplasm Conservation Guidelines for Australia, An introduction to the principles and practices for seed and germplasm banking of Australian Species*. Canberra, Australian Network for Plant Conservation Germplasm Working Group.
- Beeston, G., Mlodowski, G., Sanders, A. and True, D. (1996). Remnant Vegetation Inventory on the Southern Agricultural Areas of Western Australia. Department of Agriculture, Western Australia. Resource Management Report No. 149.
- CALM (1995). Policy Statement No. 29 *Translocation of Threatened Flora and Fauna* Department of Conservation and Land Management, Perth, Western Australia.
- Western Australian Herbarium (2007). *FloraBase 2 – Information on the Western Australian Flora* (Accessed 2007). Department of Environment and Conservation, Western Australia. <http://www.florabase.calm.wa.gov.au>.
- IUCN (2001). *IUCN Red List Categories: Version 3.1*. Prepared by the IUCN Species Survival Commission. IUCN, Gland, Switzerland and Cambridge, UK.
- Johnston, W., Thomas, S., Dougall, S., Hamersley, C., Phillips, L. and Smith, I. (2006). Threatened, poorly known and other flora of Wongan-Ballidu. Department of Environment and Conservation, Perth, Western Australia. p 94.
- Roy-Chowdhury, K. (2003). Regeneration Project Proposal – *Lysiosepalum abollatum*, Department of Conservation and Land Management, Merridin, Western Australia.
- Stack, G., Willers, N., Fitzgerald, M. and Brown, A. (2006). Western Australian Wildlife Management Program No. 39: Declared rare and poorly known flora largely restricted to the Shire of Wongan-Ballidu. Department of Conservation and Land Management, Perth, Western Australia.
- Wilkins, C.F. (2001) Declared Rare Flora Nomination Form for *Lysiosepalum abollatum*. Department of Conservation and Land Management, Perth, Western Australia. p 7.
- Wilkins, C.F. and Chappill, J.A. (2001). A taxonomic revision of the Western Australian genus *Lysiosepalum* (Malvaceae: Lasiopetaleae). *Nuytsia*. **13(3)**: 571-584.

#### 6. TAXONOMIC DESCRIPTION

Excerpt from: Wilkins, C.F. and Chappill, J.A. (2001). A taxonomic revision of the Western Australian genus *Lysiosepalum* (Malvaceae: Lasiopetaleae). *Nuytsia*. **13(3)**: 571-584.

*Shrub* to 1.5 x 1.5 m, scent absent; young growth and inflorescences (young branches, stipules, petioles, bracts, peduncles and pedicels) with white woolly appearance from large stellate hairs; indumentum of scattered 4-12-armed stellate hairs 1-2.3 mm diameter, with a red stalk 0.2-0.6 mm long and arms white with tan-centre, overlying sessile or subsessile, stellate hairs 0.25-1.0 mm diameter and white clavate glands c. 0.1 mm long. *Stipules* usually present, sessile, 0.6-1.5 x 0.6-1.3 mm (c. 4 x 1.5 mm in young growth). *Leaves* erect or spreading; petiole 0.5-1 mm long; blade mid green, discolourous, narrowly ovate, 10-16 x 2-3 mm (c. 35 x 4 mm in young growth), base subcordate, apex clavate glands but no underlying sessile hairs; abaxial surface with a dense indumentum; adaxial surface strongly rugose, with scattered hairs. *Inflorescence* 40-90 mm long, 4- or 5(8)-flowered; peduncle 10-35 mm long. *Bracts* linear-oblong or spatulate, 5-10 x 0.3-1 mm, margins fringed with stalked stellate hairs. *Pedicels* 5-12 mm long. *Epicalyx* bracts shortly fused at base to 0.3 mm, ovate, 6.5-9 x 3-6.5 mm, apex acuminate, margins fringed with stalked, stellate hairs; adaxial surface red, with scattered sessile, fine, white, stellate and simple hairs and clavate glands c. 0.1 mm

long; abaxial surface green base and purple apex with medium density, long-stalked stellate hairs to 3 mm diameter, which protrude from margins, overlying white clavate glands c. 0.1 mm long. *Flowers* 6-merous. *Calyx lobes* ovate, elliptic or oblong, 6.5-11.5 x 3.2-3.5 mm, apex acute; abaxial surface with sessile and stalked, white stellate hairs c. 0.4 mm diameter and scattered short, clavate glands c. 0.1 mm long, ribs with additional scattered, stalked, white tan-centred, stellate hairs to 1 mm diameter. *Petals* usually present, usually horizontal, rarely erect, flat, dark red, 0.8-1.5 x 0.8-1.3 mm. *Androecium* dark red; staminodes absent. *Filaments* free or shortly fused into staminal tube 0.2-0.4 mm long; free portion 0.5-0.7 x 0.6 mm. *Anthers* 3-4.8 x 0.8-1 mm; pores becoming extended as longitudinal slits when mature. *Ovary* with arms of the stellate hairs shortly fused at base. *Style* 2.5-3.7 mm long, extending c. 3 mm beyond anthers; base with a dense indumentum of sessile, white, stellate hairs. *Fruit* not observed.

