



Government of **Western Australia**
Department of **Environment and Conservation**

INTERIM RECOVERY PLAN NO. 297

Eremophila ciliata

INTERIM RECOVERY PLAN

2010-2014



January 2010
Department of Environment and Conservation
Kensington

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: 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 threatened ecological communities, and begin the recovery process.

DEC is committed to ensuring that threatened taxa and threatened ecological communities 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 and communities, always within one year of endorsement of that rank by the Minister.

This IRP will operate from January 2010 to December 2014 but will remain in force until withdrawn or replaced. It is intended that, if the taxon is still ranked CR, this IRP will be reviewed after five years and the need for further recovery actions assessed.

This IRP was given regional approval 3 February 2010 and approved by the Director of Nature Conservation on 21 April 2010. The allocation of staff time and 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 as at January 2010.

IRP PREPARATION

This IRP was prepared by Robyn Luu¹ and Andrew Brown².

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ACKNOWLEDGMENTS

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

Emma Adams	Conservation Officer, DEC Esperance District
Andrew Crawford	Principal Technical Officer (Threatened Flora Seed Centre), DEC Science Division
Amanda Shade	Assistant Curator (Nursery), Botanic Garden and 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 Andrew Brown

CITATION

This IRP should be cited as:

Department of Environment and Conservation (2010) *Eremophila ciliata* Interim Recovery Plan 2010-2014. Interim Recovery Plan No. 297. Department of Environment and Conservation, Western Australia.

SUMMARY

Scientific Name:	<i>Eremophila ciliata</i>	Common Name:	NA
Family:	Myoporaceae	Flowering Period:	September
DEC Region:	South Coast	DEC District:	Esperance
Shire:	Esperance	Recovery Team:	Esperance District Threatened Flora Recovery Team (EDTFRT)
NRM Region:	South Coast		

Illustrations and/or further information: Chinnock, R. (2007) *Eremophila* and Allied Genera: A Monograph of the plant family Myoporaceae. Rosenberg Publishing Pty Ltd, New South Wales; Department of Environment and Conservation (2009) *Western Australian Herbarium FloraBase 2 – Information on the Western Australian Flora*. Department of Environment and Conservation, Perth, Western Australia. <http://www.dec.wa.gov.au/science/>.

Current status: *Eremophila ciliata* was declared as Rare Flora under the Western Australian *Wildlife Conservation Act 1950* in June 2006 and is currently ranked as Critically Endangered (CR) under World Conservation Union (IUCN 2001) criteria B1ab(ii,v)+B2ab(ii,v); C2a(i,ii) due to a decline in the area of occupancy and number of mature individuals. Although the species is not currently listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act 1999), a Species Profile and Threats (SPRAT) information sheet has been drafted and will be forwarded for assessment by the Commonwealth TSSC for future listing. The main threats to the species are small population size, limited recruitment, rabbits, inappropriate fire regimes and mineral exploration.

Description: *Eremophila ciliata* is a large, spreading shrub 1-4 metres tall, with erect or spreading branches with furrows extending down from leaf bases and prominently tuberculate with large amber-coloured tubercles. The leaves are sessile, alternate, thick, linear-oblongate, 5-12 x 1.2-2.5 mm and glabrous. There are one to three flowers per axil and are 1.5-3 mm long. Five sepals valvate, have outer and inner surface glabrous but margins are prominently ciliate. Fruit is ovoid in side view, prominently winged and the wings have numerous tubercles. The specific name is derived from the Latin *cilium* (eye-lash) refers to its calyx lobes which are fringed with fine hairs (Chinnock 2007).

Habitat requirements: *Eremophila ciliata* is known from a small geographic range approximately 70 km north north-west of Mount Ragged. It grows on well-drained red, sandy loam at the base of a very large granite outcrop among *Acacia*, *Melaleuca* and *Eucalyptus* species (Chinnock 2007).

Habitat critical to the survival of the species, and important populations: Given that *Eremophila ciliata* 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 *E. ciliata* includes the area of occupancy of the important population; areas of similar habitat surrounding the population (these providing potential habitat for population expansion and for pollinators); additional occurrences of similar habitat that may contain undiscovered populations of the species or be suitable 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 to improve the quality or security of the habitat of *Eremophila ciliata* will also improve the status of associated native vegetation. The species is not known to occur in association with any other Threatened or Priority species or ecological communities.

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. *Eremophila ciliata* is not listed under any specific international treaty, and therefore this plan does not affect Australia's obligations under any other international agreements.

Indigenous consultation: A search of the Department of Indigenous Affairs Aboriginal Heritage Sites Register has identified no sites of Aboriginal significance at or near populations of *Eremophila ciliata*. The involvement of the Indigenous community is currently being sought to determine if there are any indigenous issues identified in the Plan. If no role is identified for indigenous communities in the recovery of this species, opportunities may exist through cultural interpretation and awareness of the species.

The advice of the South West Aboriginal Land and Sea Council (SWALSC) and Department of Indigenous Affairs is being sought to assist in the identification of potential indigenous management responsibilities for land occupied by threatened species, or groups with a cultural connection to land that is important for the species' conservation.

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 is unlikely to cause significant adverse social and economic impacts as the population occurs on Unallocated Crown Land. There is however, potential for some economic impact should the owners of mineral exploration licences wish to conduct exploration and future mining in the area. Recovery actions refer to continued liaison between stakeholders with regard to the population.

Affected interests: Stakeholders potentially affected by the implementation of this plan are the holders of mineral exploration licences for land adjacent to where *Eremophila ciliata* occurs.

Evaluation of the plan's performance: DEC in conjunction with the Esperance District Threatened Flora Recovery Team (EDTFRT) 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.

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

1. The holders of mineral exploration licences over adjacent land have been made aware of the threatened nature of the *Eremophila ciliata*, its location and their legal obligations to protect it.
2. Since the type collection for *Eremophila ciliata* was made in September 1990, numerous surveys by DEC staff and volunteers have been undertaken of all nearby granite outcrops.
3. Seed was collected from approximately 50 *Eremophila ciliata* plants at Population 1 in February 2005.
4. Staff from DEC's Esperance District regularly monitor the population of this species.
5. The EDTFRT will oversee the implementation of this IRP and will include information on progress in their annual report to DEC's Corporate Executive and funding bodies.

IRP Objective: The objective of this Interim Recovery Plan is to abate identified threats and maintain or enhance *in situ* populations 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 in populations have increased by ten percent or more over the term of the plan.

Criteria for failure: The number of populations have decreased and/or the number of mature individuals in populations have decreased by ten percent or more over the term of the plan.

Recovery actions

1. Coordinate recovery actions
2. Implement rabbit control when necessary
3. Undertake post fire monitoring
4. Stimulate recruitment, if required
5. Develop and implement a fire management strategy
6. Monitor population
7. Map habitat critical to the survival of *Eremophila ciliata*
8. Obtain biological and ecological information
9. Conduct further surveys
10. Collect further seed and cutting material
11. Promote awareness
12. Achieve long-term protection of habitat
13. Start the translocation process, if necessary
14. Review this IRP and assess the need for further recovery actions

1. BACKGROUND

History

The first recorded population of *Eremophila ciliata*, consisting of approximately 50 plants, was discovered in an area approximately 70 km NNW of Mount Ragged by William and Barbara Archer in September 1990. Since then, numerous surveys of all nearby granite outcrops by DEC staff and volunteers have been made with no further populations being found. The population is senescing with little or no recruitment occurring. A wildfire in early 2008 burnt the population with just four or five plants surviving.

The species was formally described by Chinnock in 2007.

Description

Eremophila ciliata is an erect shrub 1-4 metres tall, with erect or spreading branches with furrows extending down from leaf bases and prominently tuberculate with large amber-coloured tubercles. The leaves are sessile, alternate, thick, linear-oblongate, 5-12 x 1.2-2.5 mm and glabrous. There are one to three flowers per axil and are 1.5-3 mm long. Five sepals valvate, have outer and inner surface glabrous but margins are prominently ciliate. Fruit is ovoid in side view, prominently winged and the wings have numerous tubercles. The specific name is derived from the Latin *cilium* (eye-lash) refers to its calyx lobes which are fringed with fine hairs (Chinnock 2007).

Eremophila ciliata is closely related to *E. dichroantha* and *E. dempsteri* but can be distinguished from the former by the branch features, flattened leaves with two rows of tubercles on the abaxial surface, fewer flowers per axil and prominently winged, glabrous fruit. From the latter it can be distinguished by the flattened leaves, smaller sepals lacking prominent venation at the fruiting stage, and shorter ciliate softer hairs and smaller flowers (Chinnock 2007).

Distribution and habitat

Eremophila ciliata is only known from a small geographic area approximately 70 km north north-west of Mount Ragged. It grows on well-drained red, sandy loam at the base of a large granite outcrop among *Acacia*, *Melaleuca* and *Eucalyptus* species (Chinnock 2007).

Table 1. Summary of population land vesting, purpose and manager

Pop. No. & Location	DEC District	Shire	Vesting	Purpose	Manager
1. North north-west of Mt Ragged	Esperance	Esperance	Non vested	Unallocated Crown Land	DEC

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

Biology and ecology

There is little known about the biology and ecology of the species, and recovery actions refer to a need for research.

Eremophila ciliata appears to be killed by fire. A wildfire burnt the population early in 2008 and only four or five plants remain alive.

Threats

Eremophila ciliata was declared as Rare Flora under the Western Australian *Wildlife Conservation Act 1950* in June 2006 and is currently ranked as Critically Endangered (CR) under World Conservation Union (IUCN 2001) criteria B1ab(ii,v)+B2ab(ii,v); C2a(i,ii) due to a decline in the area of occupancy and number of mature individuals. Although the species is not currently listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act 1999), a Species Profile and Threats (SPRAT) information sheet has been drafted and will be forwarded for assessment by the Commonwealth TSSC for future listing. The main threats to the species are small population size, limited recruitment, rabbits, inappropriate fire regimes and mineral exploration.

- **Small population size** increases the likelihood of the population being adversely impacted on by a single event. Small populations are also at a greater risk of loss of genetic diversity and inbreeding depression.
- **Limited recruitment** is observable in the population possibly due to a reduction of fire or other factors in the species habitat which may positively influence reproduction.
- **Rabbits** (*Oryctolagus cuniculus*) are a threat to the population. Grazing of plants by rabbits is likely to reduce recruitment at these sites. In addition digging, erosion, the addition of nutrients and introduction of weed seeds resulting from rabbit activity encourages weed invasion.
- **Inappropriate fire regimes** is a potential threat to *Eremophila ciliata* as it appears the species is killed by fire. Too frequent fire may deplete the soil seed bank if fires recurred before regenerating or juvenile plants reached maturity and replenished the soil seed bank. However, occasional fires or other disturbances are likely to be required for the species to propagate from soil stored seed.
- **Mineral exploration** is a potential threat to the population of *Eremophila ciliata*. The population is located adjacent to an area where a program of exploration work is pending. Any clearing in association with mineral exploration may directly or indirectly affect the population of *E. ciliata*.

The intent of this plan is to provide actions that will deal with immediate threats to *Eremophila ciliata*. 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.

Table 2. Summary of population information and threats

Pop. No. & Location	Land Status	Year/No. plants	Condition	Threats
1 North north-west of Mt Ragged	Unallocated	1990 50	Healthy	Small population size, limited recruitment, rabbits, inappropriate fire regimes, mineral exploration
	Crown Land	2003 25		
		2005 50		
		2008 4		

Populations in **bold text** are considered to be Important Populations.

Guide for decision-makers

Section 1 provides details of current and possible future threats. Development and/or land clearing in the immediate vicinity of the population of *Eremophila ciliata* will require assessment. Developments or clearing should not be approved unless the proponents can demonstrate that their actions will have no significant negative 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 *Eremophila ciliata* 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 *E. ciliata* includes the area of occupancy of the important population; areas of similar habitat surrounding the population (these providing potential habitat for population expansion and for pollinators); additional occurrences of similar habitat that may contain undiscovered populations of the species or be suitable 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 to improve the quality or security of the habitat of *Eremophila ciliata* will also improve the status of associated native vegetation. The species is not known to occur in association with any other Threatened or Priority species or ecological communities.

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. *Eremophila ciliata* is not listed under any specific international treaty, and therefore this plan does not affect Australia's obligations under any other international agreements.

Indigenous consultation

A search of the Department of Indigenous Affairs Aboriginal Heritage Sites Register has identified no sites of Aboriginal significance at or near the population of *Eremophila ciliata*. The involvement of the Indigenous community is currently being sought to determine if there are any indigenous issues identified in the Plan. If no role is identified for indigenous communities in the recovery of this species, opportunities may exist through cultural interpretation and awareness of the species.

The advice of the South West Aboriginal Land and Sea Council (SWALSC) and Department of Indigenous Affairs is being sought to assist in the identification of potential indigenous management responsibilities for land occupied by threatened species, or groups with a cultural connection to land that is important for the species' conservation.

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 is unlikely to cause significant adverse social and economic impacts as the population occurs on Unallocated Crown Land. There is however, potential for some economic impact should the owners of mineral exploration licences wish to conduct exploration and future mining in the area. Recovery actions refer to continued liaison between stakeholders with regard to the population.

Affected interests

Stakeholders potentially affected by the implementation of this plan are the holders of mineral exploration licences for land adjacent to where *Eremophila ciliata* occurs.

Evaluation of the plan's performance

DEC in conjunction with the Esperance District Threatened Flora Recovery Team (EDTFRT) 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 viable *in situ* populations to ensure the long-term preservation of *Eremophila ciliata* in the wild.

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

Criteria for failure: The number of populations have decreased and/or the number of mature individuals in populations have decreased by ten percent or more over the term of the plan.

3. RECOVERY ACTIONS

Existing recovery actions

The holders of mineral exploration licences over adjacent land have been made aware of the threatened nature of the *Eremophila ciliata*, its location and their legal obligations to protect it.

Since the type collection for *Eremophila ciliata* was made in September 1990, numerous surveys by DEC staff and volunteers have been undertaken of all nearby granite outcrops. However, no new populations have been discovered.

Seed was collected from approximately 50 *Eremophila ciliata* plants at Population 1 in February 2005. The seed is currently being stored in DEC's Threatened Flora Seed Centre (TFSC) awaiting processing.

Staff from DEC's Esperance District regularly monitor the population of this species.

The EDTFRT will oversee the implementation of this IRP and will include information on progress in their annual report to DEC's Corporate Executive and funding bodies.

Future recovery actions

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

1. Coordinate recovery actions

The EDTFRT will coordinate the implementation of recovery actions for *Eremophila ciliata* and will include information on progress in their annual reports to DEC's Corporate Executive and funding bodies.

Action: Coordinate recovery actions
Responsibility: DEC (Esperance District) through the EDTFRT
Cost: \$3,000 per year

2. Implement rabbit control when necessary

The level of threat posed by rabbits varies from year to year with conditions and rabbit numbers. When monitoring ascertains the threat is high, baiting using 1080 oats should be undertaken in summer months when less green feed is available as an alternative food source.

Action: Implement rabbit control when necessary
Responsibility: DEC (Esperance District) through the EDTFRT; relevant land managers
Cost: \$3,000 in first, third and fifth years

3. Undertake post fire monitoring

The population of *Eremophila ciliata* was burnt in early 2008 and requires post burn monitoring. Esperance District staff need to establish post burn monitoring plots to assess the response of the species to fire. Monitoring should be followed up with a survey in 2010 and then annual surveys thereafter.

Action: Undertake post fire monitoring
Responsibility: DEC (Esperance District) through the EDTFRT
Cost: \$2,000 in years 1, 2 and 3

4. Stimulate recruitment, if required

Depending on the outcome of post fire monitoring, fire may be found to be the most effective means of germinating *Eremophila ciliata* seed in the wild. If however, during post fire monitoring no recruitment occurs, different disturbance techniques may need to be investigated (i.e. soil disturbance), to determine the most successful and appropriate method for stimulating germination. Records will need to be maintained for future research.

Action: Stimulate recruitment, if required
Responsibility: DEC (Esperance District) through the EDTFRT
Cost: \$3,400 in years 3, 4 and 5

5. Develop and implement a fire management strategy

Fire will be prevented, if possible, from occurring in the habitat of the population, except where it is being used experimentally as a recovery tool. A fire management strategy will be developed that recommends fire frequency, intensity, season, and control measures.

Action: Develop and implement a fire management strategy
Responsibility: DEC (Esperance District) and relevant land managers through the EDTFRT
Cost: \$2,500 in year 1 for development and \$1,000 in years 2-5 for implementation

6. Monitor population

Monitoring of factors such as weed invasion, grazing, habitat degradation, population stability (expansion or decline), pollinator activity, seed production, recruitment, and longevity is essential. The population will be inspected annually and a Rare Flora Report Form completed.

Action: Monitor population
Responsibility: DEC (Esperance District) through the EDTFRT
Cost: \$2,200 per year

7. Map habitat critical to the survival of *Eremophila ciliata*

While this species is not currently listed under the EPBC Act, this is a future intention, and it is a requirement of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC) (Section 207A) that spatial data relating to critical habitat be determined. Although critical habitat to the survival of the species is alluded to in Section 1, all the areas described have not yet been accurately mapped and will be addressed under this action. If additional populations are located, habitat critical to their survival will also be determined and mapped.

Action: Map habitat critical to the survival of *Eremophila ciliata*
Responsibility: DEC (Esperance District) and SCB through the EDTFRT
Cost: \$2,000 in year 1

8. Obtain biological and ecological information

Improved knowledge of the biology and ecology of *Eremophila ciliata* will provide a better scientific basis for management of the wild populations. An understanding of the following is particularly necessary for effective management:

- The pollination biology of the species.
- The requirements of pollinators.
- Soil seed bank dynamics, including seedbank location and viability.
- The role of natural disturbances (fire and physical), competition, rainfall and grazing in germination and recruitment.
- The reproductive strategies, phenology and seasonal growth of the species.
- The population genetic structure, levels of genetic diversity and minimum viable population size.
- Longevity of plants and time taken to reach maturity.

Action: Obtain biological and ecological information
Responsibility: DEC (Esperance District, Science Division) through the EDTFRT
Cost: \$10,000 per year

9. Conduct further surveys

Further surveys by DEC staff and, where possible, volunteers from the local community, wildflower societies and naturalists clubs will be conducted during the flowering period of *Eremophila ciliata* (September). Surveys should be concentrated in the general area of the known population, but should also include other areas of similar habitat nearby and include searches for possible future translocation sites.

Summaries of areas surveyed will be sent to SCB and also retained at the relevant District Office as a record, regardless of whether the species is found.

Action: Conduct further surveys
Responsibility: DEC (Esperance District) through the EDTFRT
Cost: \$3,500 in years 1, 3 and 5

10. Collect further seed and cutting material

It is necessary to store germplasm as an insurance policy against extinction in the wild. The germplasm stored will include seed and live plants in cultivation. Some seed has been collected from the population, but additional collections are required to maintain an adequate representation of the genetic diversity of this species. Cuttings will also be collected to enhance the living collection at BGPA.

Action: Collect further seed and cutting material
Responsibility: DEC (TFSC, Esperance District) through the EDTFRT
Cost: \$4,500 per year, if required

11. Promote awareness

The importance of biodiversity conservation and the need for the long-term protection of the wild population of *Eremophila ciliata* will be promoted to the community through poster displays and the local print and electronic media. Formal links with local naturalist groups and interested individuals will also be encouraged. Input and involvement will also be sought from Indigenous groups that have an active interest in areas that are habitat for *E. ciliata*.

An information sheet will be produced, and will include a description of the plant, its habitat, threats, recovery actions and photos. This will be distributed to the public through DEC's Esperance District office and at the office and library of the Shire of Esperance. Such information distribution may lead to the discovery of new populations.

Action: Promote awareness
Responsibility: DEC (Esperance District) through the EDTFRT
Cost: \$1,700 in year 1, \$1,000 in years 2-5

12. Achieve long-term protection of habitat

Ways and means of improving the security of the population and its habitat through the reservation system will be investigated.

Action: Achieve long-term protection of habitat
Responsibility: DEC (Esperance District) through the EDTFRT
Cost: \$1,500 per year

13. Start the translocation process, if necessary

Translocation may be deemed desirable for the conservation of this species if surveys fail to locate new populations. A translocation proposal will be developed and suitable translocation sites selected. Information on the translocation of threatened plants and animals in the wild is provided in DEC's Policy Statement No. 29 *Translocation of Threatened Flora and Fauna* (CALM 1995). All translocation proposals require endorsement by DEC's Director of Nature Conservation. Monitoring of translocations is essential and will be included in the timetable developed for the Translocation Proposal.

Action: Start the translocation process, if necessary
Responsibility: DEC (Esperance District) through the EDTFRT
Cost: \$2,200 in year 5

14. Review this IRP and assess the need for further recovery actions

If *Eremophila ciliata* is still ranked as CR at the end of the five-year term of this IRP, the need for further recovery actions, or a review of this IRP will be assessed and a revised plan prepared if necessary.

Action: Review the IRP and the need for further recovery actions
Responsibility: DEC (Esperance District and SCB) through the EDTFRT
Cost: \$2,000 in year 5

Table 3. Summary of recovery actions

Recovery Actions	Priority	Responsibility	Completion date
Coordinate recovery actions	High	DEC (Esperance District) through the EDTFRT	Ongoing
Implement rabbit control when necessary	High	DEC (Esperance District) through the EDTFRT; relevant land managers	2013
Undertake post fire monitoring	High	DEC (Esperance District) through the EDTFRT	2011
Stimulate recruitment, if required	High	DEC (Esperance District) through the EDTFRT	2013
Develop and implement a fire management strategy	High	DEC (Esperance District) and relevant land managers through the EDTFRT	Developed by 2010 with implementation ongoing
Monitor population	High	DEC (Esperance District) through the EDTFRT	Ongoing
Map habitat critical to the survival of <i>Eremophila ciliata</i>	High	DEC (Esperance District) and SCB through the EDTFRT	2010
Obtain biological and ecological information	High	DEC (Esperance District, Science Division) through the EDTFRT	2013
Conduct further surveys	High	DEC (Esperance District) through the EDTFRT	2013
Collect further seed and cutting material	High	DEC (TFSC, Esperance District) through the EDTFRT	2013
Promote awareness	High	DEC (Esperance District) through the EDTFRT	2013
Achieve long-term protection of habitat	High	DEC (Esperance District) through the EDTFRT	Ongoing
Start the translocation process, if necessary	High	DEC (Esperance District) through the EDTFRT	Ongoing
Review this IRP and assess the need for further recovery actions	High	DEC (Esperance District and SCB) through the EDTFRT	2013

4. TERM OF PLAN

This IRP will operate from January 2010 to December 2014 but will remain in force until withdrawn or replaced. If the taxon is still ranked CR after five years, the need for further recovery actions will be assessed.

5. REFERENCES

- Chinnock, R. (2007) *Eremophila* and Allied Genera: A Monograph of the plant family Myoporaceae. Rosenberg Publishing Pty Ltd, New South Wales.
- Conservation and Land Management (1992) Policy Statement No. 44 *Wildlife Management Programs*. Department of Conservation and Land Management, Western Australia.
- Conservation and Land Management (1994) Policy Statement No. 50 *Setting Priorities for the Conservation of Western Australia's Threatened Flora and Fauna*. Department of Conservation and Land Management, Western Australia.
- Conservation and Land management (1995) Policy Statement No. 29 *Translocation of Threatened Flora and Fauna*. Department of Conservation and Land Management, Western Australia.
- Department of Environment and Conservation (2009) *Western Australian Herbarium FloraBase 2 – Information on the Western Australian Flora*. Department of Environment and Conservation, Perth, Western Australia. <http://www.dec.wa.gov.au/science/>.
- World Conservation Union (2001) *IUCN Red List Categories: Version 3.1*. Prepared by the IUCN Species Survival Commission. IUCN, Gland, Switzerland and Cambridge, UK.

6. TAXONOMIC DESCRIPTION

Excerpt from Chinnock (2007) *Eremophila* and Allied Genera: A Monograph of the plant family Myoporaceae, p 210-211.

Eremophila ciliata Chinnock

Erect shrub 1-1.5 m tall. *Branches* erect or spreading, terete to subterete but not flattened towards tips, with furrows extending down from leaf bases, prominently tuberculate, with large amber-coloured tubercles, glabrous, glandular-papillate, resinous; green at first but as branch expands then brown woody tissue interspersed with persistent green bands. *Leaves* sessile, alternate, thick, linear-oblongate, flattened to canaliculated, apex acute, recurved, unicate; margins entire; smooth above, prominently tuberculate below; 5-12 (-20) x 1.2-2.5 mm; abaxial surface with two rows of prominent tubercles; glabrous except for scattered eglandular-papillate, glabrous. *Flowers* 1-3 per axil; pedicel flattened, dilating distally, 1.5-3 mm long, obscurely pubescent with scattered eglandular hairs towards base, glandular-papillate, resinous. *Sepals* 5, valvate, subequal, obovate-oblongate or spatulate, broadly acute to obtuse, enlarging after flowering but veins not prominent, 2.5-3.5 x 0.5-1.2 mm; outer and inner surface glabrous but margins prominently ciliate, hairs longer towards base, glandular-papillate, resinous; green to purple. *Corolla* 5.5-7.5 mm long, lilac to mauve, tube whitish inside, purple spotted; outside surface of lobes densely eglandular-pubescent, tube glabrous or occasionally with some hairs in distal part; inside surface of lobes glabrous, tube villous occasionally with hairs extending to base of medial lobe of lower lip; lobes obtuse. *Stamens* 4, enclosed, glabrous. *Ovary* ovoid, 4-angled, 2-locular with 2 ovules per locule, 1.5-1.8 x ca 1 mm, glabrous or with some scattered appressed hairs restricted to grooves but very variable in number and position; style glabrous or with scattered eglandular hairs. *Fruit* crustaceous, ovoid in side view, rugose, prominently winged, wings with numerous amber-coloured tubercles, 2.2-2.5 x 1.5 mm, glabrous or rarely with a few hairs persisting. *Seed* unknown. *Chromosome number* unknown.