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

INTERIM RECOVERY PLAN NO. 307

Stylidium semaphorum

INTERIM RECOVERY PLAN

2011-2016

February 2011
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 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, which was prepared using Specific Nature Conservation Project funding, will operate from February 2011 to January 2016 but will remain in force until withdrawn or replaced. It is intended that, if the taxon is still ranked as Critically Endangered (CR), this IRP will be reviewed after five years and the need for further recovery actions assessed.

This IRP was given regional approval on 24 January 2011 and was approved by the Director of Nature Conservation on 2 February 2011. 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 February 2011.

IRP PREPARATION

This IRP was prepared by Robyn Luu[1] and Andrew Brown[2].

[1] Project Officer, DEC Species and Communities Branch, Locked Bag 104, Bentley Delivery Centre, WA 6983.
[2] Threatened Flora Coordinator, DEC Species and Communities Branch, Locked Bag 104, Bentley Delivery Centre, WA 6983.

ACKNOWLEDGMENTS

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

Nick Casson	Senior Ecologist, DEC Species and Communities Branch
Anne Cochrane	Senior Research Scientist, Threatened Flora Seed Centre, DEC Science Division
Stefan De Haan	District Manager, DEC Perth Hills District
Fred and Jean Hort	WAHERB Research Associates, DEC Volunteers
Amanda Shade	Assistant Curator (Nursery) Botanic Gardens and Parks Authority
Marnie Swinburn	Flora Conservation Officer, DEC Perth Hills District

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 Jean Hort.

CITATION

This IRP should be cited as:

Department of Environment and Conservation (2011) *Stylidium semaphorum* Interim Recovery Plan 2011-2016. Interim Recovery Plan No. 307. Department of Environment and Conservation, Western Australia.

SUMMARY

Scientific Name:	***Stylidium semaphorum***	**Common Name:**	
Family:	Stylidiaceae	**Flowering Period:**	September to October
DEC Region:	Swan	**DEC District:**	Perth Hills
Shire:	Chittering	**NRM Region:**	Swan
Recovery Team:	Swan Region Threatened Flora and Communities Recovery Team (SRTFCRT)		

Illustrations and/or further information: Lowrie, A. and Kenneally, A. (1997) A Taxonomic review of *Stylidium* subgenus *Forsteropsis* (Stylidiaceae). *Nuytsia* 11(3): 353-364; Western Australian Herbarium (1998−) *FloraBase − The Western Australian Flora*. Department of Environment and Conservation. http://florabase.dec.wa.gov.au/.

Current status: *Stylidium semaphorum* was declared as Rare Flora under the Western Australian *Wildlife Conservation Act 1950* in June 2006. It is currently ranked as Critically Endangered (CR) under World Conservation Union (IUCN 2001) criteria B1&2a,b(v); C2a(i,ii): D due to its small extent of occurrence and its area of occupancy being less than 1 km^2; it being known from no more than one location; there being a continuing decline in the number of mature individuals (at the time of assessment), and the population size estimated to contain less than 50 mature individuals (at the time of assessment). Given the recent increases in the population size, this species no longer meets these criteria, and so will require re-assessment. The species is not currently listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act 1999). The main threats to the species are narrow distribution, weeds and inappropriate fire regimes.

Description: *Stylidium semaphorum* is an erect perennial, herb 0.15 to 0.2 m high. The leaves, which are adpressed to stem, are lanceolate, 0.2 to 0.4 cm long and 0.7-0.9 mm wide. The apex is mucronate, margin hyaline or margin hyaline and fimbriate, glabrous. The inflorescence is racemiform. Flowers are white and pink occurring from September to October (description from Florabase 1998−).

Habitat requirements: *Stylidium semaphorum* is known from one population north of Bindoon. Habitat is lateritic gravel on a hill summit with *Banksia sessilis*.

Habitat critical to the survival of the species, and important populations: Given that *Stylidium semaphorum* is ranked as Critically Endangered, it is considered that all known habitat for the wild population is habitat critical to the survival of the species, and that the wild population is an important population. Habitat critical to the survival of *S. semaphorum* includes the area of occupancy of the 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 *Stylidium semaphorum* will also improve the status of associated native vegetation. The species is not known to occur in association with other Threatened or Priority species or in a threatened ecological community.

International obligations: Although 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, *Stylidium semaphorum* is not listed under any specific international treaty and this IRP does not affect Australia's obligations under any other international agreements.

Indigenous Consultation: The Aboriginal Sites Register maintained by the Department of Indigenous Affairs does not list any significant sites in the vicinity of known populations of this species. However, input and involvement is being sought through the South West Aboriginal Land and Sea Council (SWALSC) and Department of Indigenous Affairs to determine if there are any issues or interests. As this is not expected to be completed before the approval of the IRP, further consultation has been included as a recovery action to ensure there has been Indigenous engagement in relation to the recovery actions posed in this plan.

Social and economic impacts: The implementation of this recovery plan is unlikely to cause adverse social and economic impact as the known population of the species occurs on a Nature Reserve.

Affected interests: There are no significant stakeholders likely to be affected by the implementation of this plan.

Evaluation of the Plan's Performance: The DEC in conjunction with the SRTFCRT 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. Surveys have been undertaken for *Stylidium semaphorum* in the New Norcia and Bindoon areas by Fred Hort and Allen Lowrie with no new populations discovered.
2. In December 2008, *Stylidium semaphorum* seed was collected from Population 1 and stored in DEC's Threatened Flora Seed Centre (TFSC) at –18°C. The seed has yet to be tested for viability.
3. The SRTFCRT are overseeing 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 IRP 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 have increased by twenty 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 have decreased by twenty percent or more over the term of the plan.

Recovery actions

1. Coordinate recovery actions
2. Re-assess conservation status
3. Conduct further surveys
4. Develop and implement disturbance trials
5. Collect seed
6. Monitor population
7. Start the translocation process
8. Undertake weed control
9. Develop and implement a fire management strategy
10. Map habitat critical to the survival of *Stylidium semaphorum*
11. Liaise with Indigenous groups
12. Promote awareness
13. Obtain biological and ecological information
14. Nominate *Stylidium semaphorum* for listing under the Commonwealth EPBC Act
15. Review this IRP and assess the need for further recovery actions

1. BACKGROUND

History

The first known collection of *Stylidium semaphorum* was made north of Bindoon by Rica Erickson in 1966.

The single known population of 118 mature individuals is in a Nature Reserve.

Description

Stylidium semaphorum is an erect perennial, herb 0.15 to 0.2 m high. The leaves, which are adpressed to the stem, are lanceolate, 0.2 to 0.4 cm long and 0.7-0.9 mm wide. The apex is mucronate, margin hyaline or margin hyaline and fimbriate, glabrous. The inflorescence is racemiform. Flowers are white and pink occurring from September to October (description from Florabase 1998−).

The name *semaphorum* comes from the Greek *sema* (=sign) and *phoros* (=bearing) referring to the signalling method of sending messages by semaphore, in which a person holding a flag in each hand angles the flags to code positions to relay visual messages. *Stylidium semaphorum* displays its upper corolla tubes to signal its position to attract pollinators from their flight paths. Interestingly, the upper corolla lobes are also positioned in a V-shape which is the semaphore code for "U" and "attention" (Lowrie and Kenneally 1997).

Stylidium semaphorum differs from other members of the subgenus *Forsteropsis* in having sepals with a short, brownish apical mucro (Lowrie and Kenneally 1997).

Distribution and habitat

Stylidium semaphorum is known from one population north of Bindoon. Habitat is lateritic gravel on a hill summit with *Banksia sessilis*. Associated species include *Hakea undulata*, *H. trifurcata*, *Banksia dallanneyi*, *B. nivea*, *Hibbertia hypericoides* and *Stylidium brunonianum*.

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

Pop. No. & Location	DEC District	Shire	Vesting	Purpose	Manager
1. N of Bindoon	Perth Hills	Chittering	Conservation Commission of Western Australia	Conservation of Flora and Fauna	DEC

The population in **bold text** is considered to be an important population.

Biology and ecology

Stylidium semaphorum flowers from September to October. The species has deciduous leaves which die back to a stoloniferous rhizome over summer, making the plant very hard to find when searching outside its flowering period. Observations suggest that the species grows in clumps with new growth sprouting from old plants.

Threats

Stylidium semaphorum was declared as Rare Flora under the Western Australian *Wildlife Conservation Act 1950* in June 2006. It is currently ranked as Critically Endangered (CR) under World Conservation Union (IUCN 2001) criteria B1&2a,b(v); C2a(i,ii): D due to its small extent of occurrence and its area of occupancy being less than 1 km^2; it being known from no more than one location; there being a continuing decline in the number of mature individuals (at the time of assessment), and the population size estimated to contain less than 50 mature individuals (at the time of assessment). Given the recent increases in the population size, this species no longer meets these criteria, and so will require re-assessment. The species is not currently listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act 1999). The main threats to the species are narrow distribution, weeds and inappropriate fire regimes.

- **Narrow distribution.** The species is known from one population, placing the taxon under serious threat from a single threatening process.

- **Weeds** are considered a minor threat to the species. The species occurs on the edges of a of an old blue metal dump which contains some weeds.
- **Inappropriate fire regimes** are a minor threat to the species. The species may need disturbance such as fire to stimulate germination from soil-stored seed. However frequent fire may kill plants before they reach maturity and replenish the seed bank. Fire may also facilitate weed invasion and should be followed up with appropriate weed control. Until the ideal fire frequency for optimal response of the species has been determined fire should, as much as possible, be prevented from occurring in the area of the population.

The intent of this plan is to provide actions that will deal with immediate threats to *Stylidium semaphorum*. 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. of plants	Current Condition	Threats
1. N of Bindoon	Nature Reserve	2002 1 2003 2 2004 0 2005 55 2008 118	Healthy	Narrow distribution, weeds, inappropriate fire regimes

Guide for decision-makers

Section 1 provides details of current and possible future threats. Development and/or land clearing in the immediate vicinity of *Stylidium semaphorum* will require assessment. On-ground works 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 *Stylidium semaphorum* is ranked as Critically Endangered, it is considered that all known habitat for the wild population is habitat critical to its survival, and that the wild population is an important population. Habitat critical to the survival of *S. semaphorum* includes the area of occupancy of the 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 *Stylidium semaphorum* 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 threatened ecological communities.

International obligations

Although 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, *Stylidium semaphorum* is not listed under any specific international treaty and this IRP does not affect Australia's obligations under any other international agreements.

Indigenous Consultation

The Aboriginal Sites Register maintained by the Department of Indigenous Affairs does not list any significant sites in the vicinity of the known populations of this species. However, input and involvement is being sought through the South West Aboriginal Land and Sea Council (SWALSC) and Department of Indigenous Affairs to determine if there are any issues or interests. As this is not expected to be completed before the approval of the

IRP, further consultation has been included as a recovery action to ensure there has been Indigenous engagement in relation to the recovery actions posed in this plan.

Social and economic impacts

The implementation of this recovery plan is unlikely to cause significant adverse social and economic impact as the only population of the species occurs on a Nature Reserve.

Affected interests

There are no significant stakeholders likely to be affected by implementation of this plan.

Evaluation of the Plan's Performance

The DEC in conjunction with the Swan Region Threatened Flora and Communities Recovery Team (SRTFCRT) 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 Interim Recovery Plan (IRP) is to abate identified threats and maintain or enhance *in situ* populations 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 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 have decreased by twenty percent or more over the term of the plan.

3. RECOVERY ACTIONS

Existing recovery actions

Surveys for *Stylidium semaphorum* were undertaken near New Norcia and Bindoon by Fred Hort (DEC volunteer) and Allen Lowrie (botanist) with no new populations found.

In December 2008, *Stylidium semaphorum* seed was collected from Population 1 and stored in DEC's Threatened Flora Seed Centre (TFSC) at –18°C. The seed has yet to be tested for viability.

The SRTFCRT are overseeing 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 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 SRTFCRT will continue to oversee the implementation of recovery actions for *Stylidium semaphorum* and will include information on progress in their annual report to DEC's Corporate Executive and funding bodies.

Action: Coordinate recovery actions
Responsibility: DEC (Swan Region) through the SRTFCRT
Cost: $6,000 per year

2. Re-assess conservation status

The recorded increase in plant numbers at the population demonstrate there is no continuing decline in plant numbers, and the current plan numbers exceed the threshold level for Critically Endangered. The conservation status of this species needs to be re-assessed to amend the criteria, and determine if it still meets the ranking of Critically Endangered.

Action: Re-assess conservation status
Responsibility: DEC (Species and Communities Branch (SCB))
Cost: $1,000 in year 1

3. Conduct further surveys

It is recommended that areas of potential habitat be surveyed for the presence of *Stylidium semaphorum* during its flowering period in September and October. The species has deciduous leaves that die back to a stoloniferous rhizome over summer making it difficult to spot at other times of the year. All surveyed areas will be recorded and the presence or absence of the species documented to increase survey efficiency and reduce unnecessary duplicate surveys. Where possible, volunteers from the local community, Landcare groups, wildflower societies and naturalists clubs will be encouraged to become involved.

Action: Conduct further surveys
Responsibility: DEC (Perth Hills District) through the SRTFCRT
Cost: $5,000 per year

4. Develop and implement disturbance trials

Natural disturbance events (physical or fire) may be the most effective means of germinating seed of *Stylidium semaphorum* in the wild. Different disturbance techniques should be investigated (i.e. soil disturbance and fire), to determine the most successful and appropriate method. Records will need to be maintained for future research. Disturbance trials will need to be undertaken in conjunction with weed control.

Action: Develop and implement disturbance trials
Responsibility: DEC (Science Division, Perth Hills District) through the SRTFCRT
Cost: $7,000 in years 1 and 3, $2,000 in years 2, 4 and 5

5. Collect seed

Seed has been collected from the population. However, further collections by DEC's TFSC are required to ensure the genetic diversity of the species is captured and material is available for propagation for translocation.

Action: Collect seed
Responsibility: DEC (Perth Hills District, TFSC) through the SRTFCRT
Cost: $5,000 per year

6. Monitor population

Monitoring of factors such as weed invasion, habitat degradation, hydrology, population stability (expansion or decline), pollinator activity, seed production, recruitment, and longevity is essential.

Action: Monitor population

Responsibility: DEC (Perth Hills District) through the SRTFCRT
Cost: $5,000 per year

7. Start the translocation process

Translocation may be deemed necessary for the conservation of this species if surveys fail to locate new populations and the existing population is thought to be threatened or requires enhancement. 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 the Department's Policy Statement No. 29 *Translocation of Threatened Flora and Fauna*, and meet the standards set in Guidelines for the Translocation of Threatened Australian Plants (Vallee *et al* 2004). 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
Responsibility: DEC (Perth Hills District, Science Division) through the SRTFCRT
Cost: $5,000 in year 3

8. Undertake weed control

Weeds are a minor threat to the population and if control is required the following actions will be implemented:

1. Determine which weeds are present and map them.
2. Select appropriate technique; herbicide, mowing or hand weeding.
3. Control invasive weeds by hand removal and/or spot spraying around the *Stylidium semaphorum* plants when weeds first emerge.
4. Monitor the success of the treatment on weed death, and the tolerance of *Stylidium semaphorum* and associated native plant species to the treatment.
5. Report on the method and success of the threatment, and effect on *Stylidium semaphorum* plants and associated species.

Action: Undertake weed control
Responsibility: DEC (Perth Hills District, Science Division) through the SRTFCRT
Cost: $6,000 per year, as required

9. Develop and implement a fire management strategy

Fire will be prevented from occurring in the habitat of populations, 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 in association with the management of the reserve.

Action: Develop and implement a fire management strategy
Responsibility: DEC (Perth Hills District) through the SRTFCRT; relevant authorities
Cost: $10,000 in first year and $2,000 in subsequent years

10. Nominate *Stylidium semaphorum* for listing under the Commonwealth EPBC Act

Staff from DECs SCB will develop a Species Profile and Threats (SPRAT) and/or EPBC Act nomination for this species. The nomination will be forwarded to the Commonwealth Department of Environment, Water, Heritage and the Arts for referral to the Threatened Species Scientific Committee (TSSC) for endorsement under the EPBC Act.

Action: Nominate *Stylidium semaphorum* for listing under the Commonwealth EPBC Act
Responsibility: DEC (SCB)
Cost: $3,000 in year 1

11. Map habitat critical to the survival of *Stylidium semaphorum*

It is a requirement of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) that spatial data relating to habitat critical to the survival of the species be determined. Although this habitat is alluded to in Section 1, it has not yet been mapped and will be addressed under this action. If additional populations are located, then habitat critical to their survival will also be determined and mapped.

Action: Map habitat critical to the survival of *Stylidium semaphorum*
Responsibility: DEC (SCB, Perth Hills District) through the SRTFCRT
Cost: $6,000 in year 2

12. Liaise with Indigenous groups

Indigenous consultation will take place to determine if there are any issues or interests in areas that are habitat for *Stylidium semaphorum*.

Action: Liaise with Indigenous groups
Responsibility: DEC (Perth Hills District) through the SRTFCRT
Cost: $2,000 per year

13. Promote awareness

The importance of biodiversity conservation and the protection of *Stylidium semaphorum* 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 information sheet that includes a description of the plant, its habitat type, threats and management actions, and photos will be produced. Formal links with local naturalist groups and interested individuals will also be encouraged.

Action: Promote awareness
Responsibility: DEC (Perth Hills District, SCB, Strategic Development and Corporate Affairs Division) through the SRTFCRT
Cost: $4,000 in year 1 and $2,000 in years 2-5

14. Obtain biological and ecological information

Increased knowledge of the biology and ecology of the species will provide a scientific basis for management of *Stylidium semaphorum* in the wild. Research will include:

1. Study of the soil seed bank dynamics and the role of various factors including disturbance, competition, drought, inundation and grazing in recruitment and seedling survival.
2. Determination of reproductive strategies, phenology and seasonal growth.
3. Investigation of the mating system and pollination biology.
4. Investigation of population genetic structure, levels of genetic diversity and minimum viable population size.
5. The impact of changes in hydrology in the habitat.

Action: Obtain biological and ecological information
Responsibility: DEC (Science Division, Perth Hills District) through the SRTFCRT
Cost: $10,000 per year

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

If *Stylidium semaphorum* is still ranked as Critically Endangered 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 this IRP and assess the need for further recovery actions
Responsibility: DEC (SCB, Perth Hills District) through the SRTFCRT

Cost: $3,000 in year 5

Table 3. Summary of Recovery Actions

Recovery Action	Priority	Responsibility	Completion Date
Coordinate recovery actions	High	DEC (Swan Region) through the SRTFCRT	Ongoing
Re-assess conservation status	High	DEC (SCB)	2012
Conduct further surveys	High	DEC (Perth Hills District) through the SRTFCRT	Ongoing
Develop and implement disturbance trials	High	DEC (Science Division, Perth Hills District) through the SRTFCRT	2016
Monitor population	High	DEC (Perth Hills District) through the SRTFCRT	Ongoing
Develop and implement a fire management strategy	High	DEC (Perth Hills District) through the SRTFCRT; relevant authorities	Developed by 2013 with implementation ongoing
Nominate *Stylidium semaphorum* for listing under the Commonwealth EPBC Act	High	DEC (SCB)	2012
Start the translocation process	Medium	DEC (Perth Hills District, Science Division) through the SRTFCRT	Ongoing
Map habitat critical to the survival of *Stylidium semaphorum*	Medium	DEC (SCB, Perth Hills District) through the SRTFCRT	2014
Collect seed	Medium	DEC (Perth Hills District, TFSC) through the SRTFCRT	2016
Undertake weed control	Medium	DEC (Perth Hills District) through the SRTFCRT	Ongoing
Liaise with Indigenous groups	Medium	DEC (Perth Hills District) through the SRTFCRT	Ongoing
Promote awareness	Medium	DEC (Perth Hills District, SCB, and Strategic Development and Corporate Affairs Division) through the SRTFCRT	Ongoing
Obtain biological and ecological information	Medium	DEC (Science Division, Perth Hills District) through the SRTFCRT	2016
Review this IRP and assess the need for further recovery actions	Medium	DEC (SCB, Perth Hills District) through the SRTFCRT	2016

4. TERM OF PLAN

This IRP will operate from February 2011 to January 2016 but will remain in force until withdrawn or replaced. If the species is still ranked Critically Endangered after five years, the need for further recovery actions will be determined.

5. REFERENCES

Smith, M. (2010) *Declared Rare and Priority Flora List for Western Australia*. Department of Environment and Conservation, Perth, Western Australia.

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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.

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6. TAXONOMIC DESCRIPTION

Stylidium semaphorum

Lowrie, A. and Kenneally, A. (1997) A Taxonomic review of *Stylidium* subgenus *Forsteropsis* (Stylidiaceae). *Nuytsia* 11(3): 353-364.

Perennial herb, with erect divided stems covered with appressed, tile-like leaves spirally arranged around the stem. *Leaves* basifixed, green, narrowly ovate, 2-2.3 mm long, 0.5-0.7 mm wide, with silvery white apical mucro 1.2-2 mm long, pilose at the base, hyaline margins silvery white, dentate-laciniate. *Racemes* terminal, spike-like; pedicels 1.5-2.5 mm long; bracts silvery white, fringed, *c*. 2.5 mm long, with *c*. 1.5 mm long mucro; bracteoles similar, *c*. 2 mm long, with *c*. 0.7 mm long mucro. *Hypanthium* obovoid at anthesis, *c*. 2.5 mm long, *c*. 1 mm wide, glandular. *Sepals* free to base, narrowly ovate, *c*. 2.5 mm long, mostly glabrous except for the base; hyaline margin silvery white, fringed, with a short brownish apical mucro. *Corolla* pale pink, rarely white, with laterally-paired lobes, but these appearing vertically paired in relation to the plant, with the lower lobes (a combination of an anterior and posterior lobe) placed together to provide an insect pollinator's landing platform, the upper lobes spread apart in a semaphore-like arrangement; anterior lobes *c*. 5 mm long, *c*. 2.3 mm wide; posterior lobes *c*. 5 mm long, *c*. 2.3 mm wide. *Labellum* subulate, reddish, *c*. 2.5 mm long, *c*. 0.5 mm wide, margins bearing long hair-like stalked glands, with 2 basal subulate appendages; appendages *c*. 0.8 mm long, papillose; boss narrowly ovate, white, smooth, *c*. 0.9 mm long, *c*. 0.3 mm wide. *Throat appendages* 6, the 2 near the labellum pink and *c*. 0.7 mm long, the remaining 4 white and *c*. 0.4 mm long, followed by 4 dark pink throat markings. *Gynostemium* column *c*. 5 mm long; anthers dark brown, pollen white; stigma conical, capitate.