

**DEPARTMENT OF CONSERVATION AND LAND
MANAGEMENT**

**SEDGELANDS IN HOLOCENE DUNE
SWALES RECOVERY TEAM**



**ANNUAL REPORT
2005**

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For the 'Sedgeland in Holocene Dune Swales' Recovery Team

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Summary

The Sedgeland in Holocene Dune Swales community was listed as a critically endangered threatened ecological community (TEC) in 1996. The community is also listed as Endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

The Recovery Team for the Sedgeland in Holocene Dune Swales was formed in June 1996. The Team coordinates the implementation of the Interim Recovery Plan that was completed in May 2002. This report outlines the progress made in implementing the Interim Recovery Plan between January–December 2005.

Members of the Team dealt with a series of issues in 2005 including negotiations and advice about areas that contain the sedgeland community and are the subject of proposals for reservation or development. The group worked in liaison with interested local groups, the Department of Conservation and Land Management's (CALM's) Regional Parks Unit and Swan Coastal District, and the Department of Environment in undertaking these negotiations.

Members of the Recovery Team have provided advice and recommendations with regard to the management requirements of two wetlands in Port Kennedy that contain the sedgeland community and are managed by the City of Rockingham. This advice included the need for weed control, rubbish removal, improved fencing to help exclude wind-blown rubbish, and the provision of information to landholders living adjacent to the wetlands. A pamphlet was then produced about the sedgelands, and was distributed to local landholders.

Members of the Recovery Team were involved with negotiations to minimise impacts with regard to development of land immediately adjacent to the sedgeland community at Lot 40 Forty Rd, Secret Harbour, and the Lark Hill Regional Sporting and Recreation Complex development. Advice for Lot 40 included ways to minimise the impact of slashing for unexploded ordnance (UXO), and developing appropriate monitoring and reporting methods. Advice for the Lark Hill development included recommendations to minimise hydrological impacts, and developing an appropriate hydrological and vegetation monitoring regime for the sedgeland TEC.

In liaison with CALM's Regional Parks Unit, the Recovery Team continued to provide advice with regard to management for the Waikiki Station site that contains the sedgeland TEC, including recommendations relating to hydrological issues and weed control.

Agreement was reached between Landcorp and members of the Recovery Team with regard to the location of a fence to help protect a Bush Forever additional site that contains the sedgeland community on Bakewell Drive, Port Kennedy. The fence will help prevent damage by four wheel drives, illegal rubbish dumping, and arson. Regional Parks Unit have agreed to coordinate the fencing project.

In liaison with CALM's Regional Parks Unit, the Recovery Team provided advice with regard to likely impacts of a proposed substation within Lake Walyungup and Lake Coo loongup Regional Parks. These sites were then excluded from the areas being considered by Western Power. The Recovery Team also provided advice to CALM's Swan Coastal District with regard to a residential development in Golden Bay.

A proposal developed by the Recovery Team for the use of Offset funds to implement recovery actions for the community including weed control, fencing, rehabilitation, fire control, signage, and an information pamphlet was approved by CALM's Director of Nature Conservation. A number of these projects were begun in 2005, and some including the pamphlet, were completed.

Trials to control *Euphorbia terracina* (Geraldton carnation weed), were undertaken in Port Kennedy Regional Park by CALM's Urban Nature group. This project was made possible with funding assistance from the Natural Heritage Trust, through the Swan Catchment Council.

Background

The Sedgeland in Holocene Dune Swales threatened ecological community (TEC) was listed as critically endangered in 1996. The community is also listed as Endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

The community occurs in linear damplands and occasionally sumplands (wetlands) between Holocene dunes formed over the last 7,000 years. Typical native species in the community include the shrubs *Muehlenbeckia adpressa*, *Acacia saligna* and *Xanthorrhoea preissii*, and the herbs *Baumea juncea*, *Isolepis nodosa*, and *Poa porphyroclados*.

When conserved as a representative unit the range of different ages of the wetlands along the coastal evolutionary sequence, in association with their geomorphic history, provide important opportunities for research on wetland evolution.

The community is recommended for separation into two subgroups; 'Sedgeland in Holocene dune swales of the southern Swan Coastal Plain' and 'woodlands over sedgelands in Holocene dune swales of the southern Swan Coastal Plain' meet the criteria for critically endangered. The process of endorsement of the separation of the community into these subgroups has not yet been completed.

There is a total of 56 occurrences of the Sedgeland in Holocene dune swales sub-group, and these occurrences covers about 51 ha. There are a total of 37 occurrences of the other sub-group – the woodlands over sedgelands in Holocene dune swales, and these occurrences cover about 109 ha.

The sedgeland community is threatened by clearing, changes to hydrological processes, weed invasion, inappropriate fire regimes, erosion by wind and water, disturbance due to recreational use/maintenance activities, and grazing by rabbits.

The Recovery Team for the Sedgeland in Holocene Dune Swales was formed in June 1996. The Team coordinates the implementation of the Interim Recovery Plan that was completed in May 2002. This report outlines the progress made in implementing the Interim Recovery Plan between January–December 2005.

Recovery Team

Members of the team include:

- Ms Valerie English (Chair) (WA Threatened Species and Communities Unit, CALM).
- Dr Neil Gibson (Woodvale Research, CALM)
- Dr Phil Jennings (Murdoch University)
- Mr Ian Barker (City of Rockingham) (replaced John Tucker from City of Rockingham in 2003)
- Mr Tim Bowra (Regional Parks Co-ordinator, CALM)

Dr Jenny Davis resigned from the Team in 2005, and has not yet been replaced.

The Recovery Team met on 17 February 2005. Members of the team dealt with a series of issues in 2005 including areas that contain the sedgeland community and are the subject of proposals for reservation or development.

IMPLEMENTATION OF RECOVERY ACTIONS DURING 2005

Sedgeland community in Port Kennedy Residential area

Members of the Recovery Team provided advice and recommendations with regard to management requirements of two wetlands in Port Kennedy that contain the sedgeland TEC and are managed by the City of Rockingham. This advice included the need for weed control, rubbish removal, and improved fencing to help exclude wind-blown rubbish. Advice also included the need for the provision of signage at the sites and that other information with regard to the importance of the wetlands be provided to the land owners living adjacent to the site. A pamphlet was produced by CALM's Species and Communities Branch, and this was distributed to relevant landowners by the City of Rockingham, and the Naragebup Environment Centre. The City of Rockingham was also provided advice about appropriate signage for the site.

Lot 40, Forty Rd, Secret Harbour

Members of the Recovery Team were involved with negotiations to minimise impacts with regard to development of land immediately adjacent to the sedgeland community at Lot 40 Forty Rd, Secret Harbour. This included minimal slashing for unexploded ordnance within the buffer around the wetland area, and no slashing within the wetland. Team members also provided advice on the monitoring and rehabilitation plan for the site through CALM's Swan Coastal District. The draft plan was subsequently amended by the proponents to reflect these recommendations. The recommended monitoring method included transects across the wetland, use of permanent markers, seeking a standard photographic record across the transects, GPS fixing the ends of the transects, the use of control transects in areas remote from similar human influences, and annual reporting.

Waikiki Station site, and rail line

In liaison with CALM's Regional Parks Unit, members of the Recovery Team continued to provide advice with regard to management for the Waikiki Station site that contains the sedgeland TEC, including consideration of hydrological issues and weed control. Specific issues discussed include appropriate locations for bores, and the frequency of hydrological monitoring.

Lark Hill Sporting and Recreation Complex

In liaison with CALM's Regional Parks Unit, members of the Recovery Team provided comment on the Lark Hill Regional Sporting and Recreation Complex, including recommendations to minimise hydrological impacts, and an appropriate hydrological and vegetation monitoring regime for the sedgeland community.

Additional Bush Forever site, Bakewell Drive, Port Kennedy

Agreement was reached between Landcorp and members of the Recovery Team with regard to the location of a fence to protect a Bush Forever additional site that contains the sedgeland community on Bakewell Drive, Port Kennedy. CALM's Regional Parks Unit have agreed to coordinate the fencing project, which will be designed to help prevent further damage from illegal access, rubbish and vehicle dumping, and fires lit by arsonists.

Conservation management projects

A proposal put forward by the Recovery Team for the use of Offset funds from a development in Port Kennedy to improve the conservation management of the community was approved by

the Director of Nature Conservation. The projects include weed control, fencing, rehabilitation, fire control, signage, and production of a pamphlet designed to increase awareness of the importance of the sedgelands TEC. A number of these projects were begun in 2005, and some, such as the pamphlet, were completed.

Other Development Proposals

Members of the Recovery Team attended a site visit with staff from Western Power and CALM's Regional Parks Unit to examine areas proposed for a substation within Lake Walyungup and Lake Coo롱up Regional Parks. All sites appeared likely to impact on the sedgeland community and/or important values in the Regional Park, and were then excluded from the areas being considered by Western Power.

Members of the Recovery Team provided advice to CALM's Swan Coastal District with regard to a residential development in Golden Bay. The Team provided mapping of the boundary of the sedgelands TEC within the proposed development area.

Implementing the Interim Recovery Plan

This section summarises progress on implementing actions in the Interim Recovery Plan during 2005.

3.4 *Minimise further clearing of the community*

Further clearing or destruction by other means especially of good examples of the older stages of the wetland will be minimised wherever possible by acquisition, negotiation and planning.

Members of the Recovery Team have provided advice and recommendations with regard the possible reservation of areas of the community on Lot 40 Forty Rd, Waikiki Station site, Lot 17 Bakewell Drive, Lark Hill, Additional Bush Forever site – Bakewell Drive Port Kennedy, Golden Bay, and other areas proposed for development. Negotiations are continuing for a number of the sites.

3.6 *Maintain hydrology and water quality*

A strategy will be designed to ensure watertable height and water quality remain appropriate to the natural wetland community, through monitoring and ongoing management. This strategy will be incorporated into the full Recovery Plan if required.

Members of the Recovery Team have continued to provide advice to decision making bodies such as DoE with regard to protection of the sedgeland community from impacts of hydrological change. Advice was provided on areas including Lark Hill, Waikiki Station, occurrences in Lake Walyungup and Coo롱up, and Lot 40 Forty Road.

3.9 *Design and implement a weed control strategy for the community*

For areas within the Rockingham Lakes Regional Park, this strategy will be done as part of the weed control strategy for the Regional Park. Weed removal and control is predominantly required in deeper wetlands (Typha) and on the edges of the threatened community.

Weed control projects using Offset funds have been approved for Port Kennedy, Lake Coo롱up and Lake Walyungup Regional Parks. This work will be an extension of a trial weed control program already underway for Port Kennedy Regional Park and will be coordinated by staff from CALM's Urban Nature Program. The weed control trial project

undertaken in 2005 was made possible with funding assistance from the Natural Heritage Trust, through the Swan Catchment Council.

3.10 Minimise damage to the community from UXO searches

Liaison will be maintained to prevent damage to the threatened community from slashing and other activities during searches for UXO.

Members of the Recovery Team provided advice with regard to suitable methods for UXO search at Lot 40, Forty Road Secret Harbour. Methods recommended involved no direct disturbance to the sedgeland community, and minimal disturbance to buffer areas.

3.11 Report on success of management strategies for wetlands

Annual reports will be prepared by the Recovery Team.

This report completes this action for 2005.

3.26 Negotiate for appropriate management of other occurrences in Port Kennedy, outside Port Kennedy Scientific Park

The land tenure of the occurrences of the sedgeland community north of Port Kennedy Drive, and between Bakewell Drive and Ennis Avenue will be identified. Appropriate management actions to conserve the community will then be determined, including negotiations for declaration of areas as conservation reserve if necessary.

In consultation with CALM's Regional Parks Unit and Swan Coastal District, members of the Recovery Team have provided advice and recommendations with regard to the possible reservation of areas of the community in Lark Hill, Lot 40 Forty Rd, Golden Bay, and Lot 17 Bakewell Drive. Negotiations are continuing for a number of these sites.

3.31 Incorporate management strategies into planning for the Lark Hill Regional Sport and Recreation complex

Planning for the Lark Hill Regional Sport and Recreation Complex needs to address reservation of wetland areas, and adequate buffers around each wetland site; controlling access through fencing; developing and implementing an appropriate fire regime; monitoring and responding to wetland condition, water levels and quality; and weed and rabbit control.

Members of the Recovery Team have provided advice and recommendations with regard to managing hydrology of the wetlands at this site.

ASSESSMENT OF PROGRESS TOWARDS MEETING CRITERIA FOR SUCCESS AS DESCRIBED IN THE RECOVERY PLAN

Criteria for success in the Interim Recovery Plan:

- *An increase in the area, number of occurrences, and completeness of a geomorphic age sequence of this community under conservation management.*

Ongoing - see above: members of the Recovery Team dealt are involved with ongoing negotiations and provision of advice about areas that contain the sedgeland community and are the subject of proposals for reservation.

- *Maintenance in terms of diversity and basic composition of native species (as described in Gibson et al. 1994).*

Ongoing - see above: Baseline data on condition have been collected for the sedgeland community in Port Kennedy Scientific Park, and permanent monitoring plots were previously placed in occurrences at Bakewell Drive. In addition, trials to control *Euphorbia terracina* (Geraldton carnation weed), were undertaken in Port Kennedy Regional Park by CALM's Urban Nature group in 2005, and this included collection of baseline information on condition.

- *Maintenance of water levels and quality in the wetlands that contain the community.*

Ongoing: Hydrological data are being continually being collected for areas that contain the community. Long terms trends are yet to be determined.

- *Maintenance or improvement in the condition and extent of the community including reduction of exotic species*

Ongoing - see above: Weed control trials were undertaken in 2005 in Port Kennedy Regional Park by CALM's Urban Nature group, included collection of baseline information on weed levels.

References:

Government of Western Australia (2000). *Bush Forever*. Department of Environmental Protection. Perth, Western Australia.

English, V., Blyth, J., Gibson, N., Pember, D., Davis, J., Tucker, J., Jennings, P., and Walker, B. (2002). *Sedgeland in Holocene Dune Swales. Interim Recovery Plan number 110. 2002-2007*. Department of Conservation and Land Management. Perth, Western Australia.