Department of
Sustainability and
Environment

National Recovery Plan for the Snowy River Westringia *Westringia cremnophila*

Oberon Carter and Neville Walsh

Australian Government

Victoria
The Place To Be

Prepared by Oberon Carter (Department of Sustainability and Environment, Victoria) and Neville Walsh (Royal Botanic Gardens, Melbourne).

Published by the Victorian Government Department of Sustainability and Environment (DSE) Melbourne, November 2006.

Authorised by the Victorian Government, 8 Nicholson Street, East Melbourne.

ISBN 1 74152 378 8

This is a Recovery Plan prepared under the Commonwealth *Environment Protection and Biodiversity Conservation Act* 1999, with the assistance of funding provided by the Australian Government.

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

An electronic version of this document is available on the DSE website www.dse.vic.gov.au

For more information contact the DSE Customer Service Centre 136 186

Citation: Carter, O. and Walsh, N. 2006. National Recovery Plan for the Snowy River Westringia *Westringia cremnophila*. Department of Sustainability and Environment, Melbourne.

Table of Contents

Summary **3**
Species Information 3
Description 3
Distribution 3
Population Information 3
Habitat 4
Threats **4**
Recovery Information **4**
Overall Objective 4
Program Implementation 4
Program Evaluation 4
Recovery Actions and Performance Criteria 5
Management Practices 7
Affected interests 7
Role and interests of indigenous people 7
Benefits to other species/ecological communities 7
Social and economic impacts 8
Acknowledgments **8**
Bibliography **8**
Priority, Feasibility and Estimated Costs of Recovery Actions **9**

Figures

Figure 1. Distribution of *Westringia cremnophila* in Victoria 3

Summary

Species Information

The Snowy River Westringia *Westringia cremnophila* is listed as Vulnerable under the Commonwealth *Environment Protection and Biodiversity Conservation Act* 1999. The species is endemic to Victoria, where it is known from a single population containing a maximum of 14 plants, growing in the Snowy River gorge in East Gippsland. This national Recovery Plan for *W. cremnophila* details the species' distribution and biology, conservation status, threats, and recovery objectives and actions necessary to ensure its long-term survival.

Description

The Snowy River Westringia *Westringia cremnophila* is a low spreading shrub growing to 0.5 m in height. Stems are covered in slightly appressed white hairs, and larger stems develop a thick furrowed bark. Leaves are oblong to almost linear, 10–20 mm long and 1–2 mm wide, and occur in sets of 2–4 in whorls along stems. Leaf ends are rounded to pointed, and margins are entire and curl under at the edges. Silky hairs cover leaves when young but disappear with growth leaving a slightly rough surface. Inflorescences grow as racemes with one flower per stalk, the flower composed of a 10 mm long mauve tinged, white corolla with yellow-brown dots in its throat, surrounded by a calyx with five sharply pointed lobes, the lobes 0.6–0.7 times the length of the tube. The outer surface of the calyx is very hairy (description from Wakefield 1957; Walsh & Entwisle 1999). *Westringia cremnophila* can be distinguished from other *Westringia* species by its distinctly spreading habit and the length of the tubular-shaped corolla and the length of the calyx lobes in relation to the tube (Walsh & Entwisle 1999).

Distribution

Westringia cremnophila is endemic to the Snowy River gorge in East Gippsland in Victoria, east of Butchers Ridge (Walsh & Entwisle 1999), in the South east Coastal Plain IBRA Bioregion (DEH 2000).

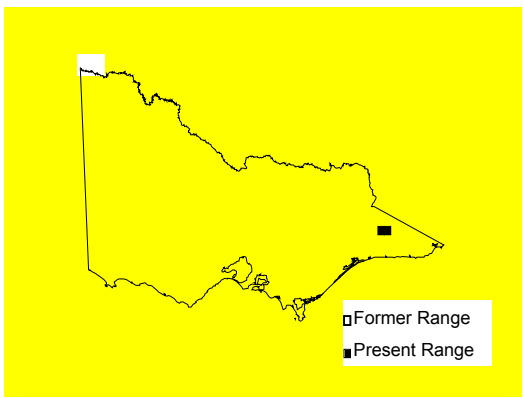

Figure 1. Distribution of *Westringia cremnophila* in Victoria

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

Population Information

The single population of *Westringia cremnophila* occurs in the Snowy River National Park, in Tuloch Ard Gorge, where 14 plants have been seen since 1998 (Walsh unpubl.).

Habitat

The single known population of *Westringia cremnophila* occurs in rocky outcrop open shrubland associated with *Platysace lanceolata*, *Olearia iodochroa*, *Derwentia perfoliata*, *Calytrix tetragona* and *Babingtonia pluriflora*. Plants occur on an extremely exposed sheer (or nearly so) rock face, growing on narrow ledges and between crevices in very little soil. The rock face has an east to north-north easterly aspect and occurs at about 140 m above sea level. Recovery actions include survey and mapping of habitat that will lead to the identification of habitat critical to the survival of the species.

Threats

Westringia cremnophila is known only from one very small area in East Gippsland. As there is no information on past distribution or abundance, and no evidence of any declines in the existing population, it is not possible to determine if the species has suffered any decline in range and/or abundance. Threats are generally rated as low, although, given the extremely limited distribution and very low numbers of plants, the risk from stochastic events, especially rockfall, is probably high. The population is in a remote location within a national park, and unlikely to be otherwise threatened.

Recovery Information

Overall Objective

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

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

- Acquire accurate information for conservation status assessments.
- Identify habitat that is critical, common or potential.
- Manage threats to populations.
- Determine the growth rates and viability of populations.
- Establish populations in cultivation.

Program Implementation

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

Program Evaluation

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

Recovery Actions and Performance Criteria

Action	Description	Performance Criteria
Specific objective 1		
Acquire accurate information for conservation status assessments		
1.1	Acquire baseline population data by conducting detailed field surveys including (a) identification of the area and extent of populations; (b) estimates of the number, size and structure of populations and (c) inference or estimation of population change. **Responsibility: DSE**	• Determination or update of conservation status for inclusion on state and national threatened species lists. • Population accurately mapped.
Specific objective 2		
Identify habitat that is critical, common or potential		
2.1	Accurately survey known habitat and collect floristic and environmental information describing community ecology and condition. **Responsibility: DSE**	• Requirements for completion of essential life history stages, recruitment and dispersal identified at known sites. • Habitat critical to the survival of the species is mapped.
2.2	Identify and survey potential habitat, using ecological and bioclimatic information indicating habitat preference. **Responsibility: DSE**	• Predictive model for potential habitat developed and tested.
Specific objective 3		
Identify key biological functions		
3.1	Evaluate current reproductive/regenerative status, seed bank status and longevity, fecundity and recruitment levels. **Responsibility: DSE**	• Seed bank/regenerative potential quantified.
3.2	Determine seed germination requirements by conducting laboratory and field trials aimed to identify key stimuli. **Responsibility: DSE**	• Stimuli for recruitment identified. • Management strategies identified to maintain, enhance or restore processes fundamental to reproduction and survival.

Action	Description	Performance Criteria
Specific objective 4		
Determine the growth rates and viability of populations		
4.1	Measure population trends and responses against recovery actions by collecting demographic information including recruitment and mortality, timing of life history stages and morphological data. **Responsibility: DSE**	• Techniques for monitoring developed and implemented. • Annual census data.
4.2	Collate, analyse and report on census data and compare with management histories. **Responsibility: DSE**	• Population growth rates determined.
Specific objective 5		
Establish populations in cultivation		
5.1	Establish cultivated plants *ex situ** for inclusion in living collections to safeguard against any unforeseen destruction of wild populations. * Note that with such low population size of this species in the wild, the quantity of seed collected should be minimised, to ensure wild population viability. **Responsibility: DSE, RBG**	• Development of effective propagation and cultivation techniques. Propagation of *Westringia cremnophila* has been attempted by RBG. • At least 30 mature plants in cultivation.
5.2	Establish a seed bank and determine seed viability. **Responsibility: DSE**	• Seed from important populations in storage.

Abbreviations

DSE Department of Sustainability and Environment, Victoria
PV Parks Victoria
RBG Royal Botanic Gardens, Melbourne

Management Practices

The philosophy of the strategy for recovery is habitat conservation, restoration and management combined with an understanding of the biological and physiological requirements of *Westringia cremnophila*. The emphasis is on using knowledge to better implement *in situ* management techniques that protect populations and promote regeneration and recruitment. To achieve this, recovery actions are primarily structured to (i) acquire baseline data, (ii) assess habitat condition including ecological and biological function, (iii) protect populations to maintain or improve population growth and (iv) to engage the community in recovery actions.

On-ground site management will aim to mitigate threatening processes and thereby ensure against extinction. *Westringia cremnophila* may be threatened by rock falls, however this is likely to be a rare event and no strategy is advised to alleviate this low potential threat. This species is otherwise apparently secure in a remote location within a National Park.

Broadscale protection measures applicable to all populations include legal protection of sites, habitat retention and liaison with land managers including private landholders. In addition, searches of known and potential habitat should continue to better define the distributions and size of populations.

The Recovery Plan also advocates strategies to fill some of the major gaps in our knowledge to date. These include an understanding of the mechanisms underlying recruitment and regeneration. Successful *in situ* population management will be founded on understanding the relationships between *Westringia cremnophila* and associated flora, and its response to environmental processes. These are directly linked to biological function and are thus vital to recovery. Demographic censusing will be necessary to gather life history information and to monitor the success of particular management actions.

In addition to the above, *ex situ* conservation measures will be required and will include seed storage and plant cultivation. Cultivating *ex situ* populations will also aim to increase the amount of seed available for reintroduction to sites.

Community participation in recovery actions will be sought, particularly in regard to recovery team membership and implementation of on-ground works.

Affected interests

The single known population of *Westringia cremnophila* occurs on land managed by Parks Victoria, who have approved the actions outlined in this recovery plan, subject to the availability of sufficient funding.

Role and interests of indigenous people

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

Benefits to other species/ecological communities

The Recovery Plan includes a number of potential biodiversity benefits for other species and vegetation communities in Victoria. Principally, this will be through the protection and management of habitat. The adoption of broad-scale management techniques and collection of baseline data will also benefit a number of other plant species growing in association with *Westringia cremnophila*, particularly those species with similar life forms and/or flowering responses.

The Recovery Plan will also provide an important public education role as threatened flora have the potential to act as ‘flagship species’ for highlighting broader nature conservation and biodiversity issues such as land clearing, grazing, weed invasions and habitat degradation.

Social and economic impacts

The implementation of this Recovery Plan is unlikely to cause significant adverse social and economic impacts. The single population occurs in a national park managed by Parks Victoria, in a remote location, and any protection works required will have minimal impact on any current recreational or commercial activities in the area.

Acknowledgments

The authors would like to thank Allison Marion (Parks Victoria) and Gary Backhouse (DSE) for their contributions to this Recovery Plan.

Bibliography

DEH 2000. *Revision of the Interim Biogeographic Regionalisation of Australia (IBRA) and the Development of Version 5.1. - Summary Report*. Department of the Environment and Heritage, Canberra.

Wakefield, N.A. 1957. Flora of Victoria: New Species and other Additions-12. *The Victorian Naturalist* 73(11): 186.

Walsh, N.G. & Entwisle, T.J. 1999. *Flora of Victoria, Vol 4: Dicotyledons: Cornaceae to Asteraceae*. Inkata Press, Melbourne.

Priority, Feasibility and Estimated Costs of Recovery Actions

Action	*Description*	*Priority*	*Feasibility*	*Responsibility*	*Cost estimate*					
					Year 1	Year 2	Year 3	Year 4	Year 5	**Total**
1	**Conservation status**									
1.1	Collect baseline data	1	100%	DSE	$10,000	$0	$0	$0	$0	**$10,000**
2	**Habitat requirements**									
2.1	Survey known habitat	1	100%	DSE	$10,000	$0	$0	$0	$0	**$10,000**
2.2	Identify, survey potential habitat	1	75%	DSE	$10,000	$0	$0	$0	$0	**$10,000**
3	**Identify key biol. functions**									
3.1	Evaluate reproductive status	3	75%	DSE	$0	$12,000	$12,000	$0	$0	**$24,000**
3.2	Seed germination	3	75%	DSE	$0	$10,000	$10,000	$0	$0	**$20,000**
4	**Growth rates, pop. viability**									
4.1	Conduct censusing	2	100%	DSE	$15,000	$15,000	$15,000	$15,000	$15,000	**$75,000**
4.2	Collate, analyse and report	2	100%	DSE	$0	$0	$0	$0	$5,000	**$5,000**
5	**Establish pops. in cultivation**									
5.1	Establish cultivated plants	3	50%	DSE, RBG	$0	$0	$15,000	$15,000	$15,000	**$45,000**
5.2	Establish a seed bank	2	50%	DSE	$0	$0	$4,000	$4,000	$4,000	**$12,000**
				TOTAL	**$45,000**	**$37,000**	**$55,000**	**$33,000**	**$39,000**	**$211,000**