

Draft Revision (2009)

Flora and Fauna Guarantee Action Statement No. 48

Dwarf Lantern-flower *Abutilon fraseri*

Description

Dwarf Lantern-bush (*Abutilon fraseri* (Hook.) Walp) is a small, erect sub-shrub that grows to a height of 40 cm. It has alternate, round, ovate or cordate leaves about 1.5–5 cm long and covered with hairs of variable size. The calyx is broad and indented at the base with acute-lanceolate lobes that are longer than the tube. The corolla is yellow, about twice as long as the calyx with five petals borne singly on peduncles which lengthen to 2–4 cm as the fruit matures (Cunningham *et al.* 1981). The fruiting capsule has 10 fruitlets, each with two hairy seeds.

Distribution

The Dwarf Lantern-flower is known from six small populations around Merbein and Red Cliffs and another near Robinvale. The Dwarf Lantern-flower was first found in 1950 on private property at Sunny Cliffs, near Mildura. The area has since been planted with grapevines and it is unlikely that any plants remain.

Habitat

The Dwarf Lantern-flower occurs in the arid and semi-arid areas of all Australian mainland states (Jessop & Toelken 1986), although it appears to be restricted in Victoria to Belah Woodlands, a unique community type which was previously widespread in north-western Victoria and which has been extensively cleared for agriculture.

Life history and ecology

There is limited biological and ecological information about Dwarf Lantern-flower in Victoria. Parsons & Browne (1982) mention that the species can establish in large numbers after clearing or soil disturbance. This ability to colonise after disturbance, including fire, is shared with other malvaceous species from genera such as *Abutilon*, *Hibiscus* and *Sida* and means that representatives of the species may only be growing at a site for a few years in each century. The rest of the time, hard-coated seeds remain stored in the soil. Absence from potentially good sites therefore does not imply absence or abnormality, but does carry with it problems for future management.

The species is insect-pollinated and distance between populations is a management issue. The Red Cliffs, Robinvale and Merbein populations are now isolated, with pollinators not moving between populations (i.e. not further than 30 km).

Conservation status

Victorian conservation status

The Dwarf Lantern-flower has been listed as “threatened” under the *Flora and Fauna Guarantee Act 1988*.

The Dwarf Lantern-flower is considered “endangered” in Victoria according to DSE’s *Advisory List of Rare or Threatened Plants in Victoria – 2005* (DSE 2005).

Threats

The main threats to the species are the long-term reduction in annual rainfall, leading to reduced recruitment, and grazing by herbivores, notably Rabbits. However the plants appear to persist and resprout once grazing is removed.

<i>Standard threat</i>	<i>Source Of Threat</i>	<i>Explanation</i>
Habitat damage or loss.	Construction/maintenance - road, rail or utility	Roadside communities are potentially subject to habitat loss through major soil disturbance as part of road grading and vegetation management activities.

Herbivory.	Animals - introduced herbivores.	Entire plants and populations are consumed by Rabbits.
Human disturbance.	Recreational activities - motorised (4wds, trail bikes, boats etc).	Major impacts on or loss of habitat through soil disturbance/erosion are caused by off road usage by motor bikes and 4wd vehicles.

Important populations

<i>Location name</i>	<i>Land manager</i>	<i>Catchment</i>	<i>Bioregion</i>
Red Cliffs SR	Parks Victoria	Mallee	Murray Mallee
Merbein Cemetery	Merbein Cemetery Trust	Mallee	Murray Scroll Belt
Bushland Reserve I262	Parks Victoria	Mallee	Murray Mallee

There are also small populations in the state forest adjacent to Fahey's Rd, Merbein, a roadside on the Merbein - Fahey's Road adjacent to private property, Buloke St Red Cliffs and Mildura-Blass private land.

Past management actions

<i>Action</i>	<i>Result explanation</i>
Manage environmental weeds.	Numerous stands of African Boxthorn have been removed from the enclosure area of Merbein Cemetery.
Undertake periodic surveillance monitoring of populations.	Monitoring of populations has shown that erecting vermin proof fencing coupled with moderate levels of warren destruction can lead to natural regeneration of populations subject to suitable rainfall. A new population of 25 plants was discovered at Merbein Cemetery in 2009. These plants appear to be have sprouted following fencing and Rabbit control.
Develop, publish and distribute educational, technical or publicity material and/or displays.	A small pamphlet (created by the Flora Information System) including photographs, written description and distribution map of known records was used in the liaison with the local community.
Erect/maintain fence to exclude domestic stock.	Rabbit proof fencing was erected in 2004, protecting nine hectares of suitable habitat for the population remnant at the Merbein Cemetery. An inspection of the fence in 2009 revealed it continues to successfully exclude Rabbits.
Conduct enforcement activities.	Regular patrols of the Red Cliffs SR have been undertaken to exclude and/or control illegal off-road use of recreational vehicles.
Control introduced animals.	Twenty Rabbit warrens were ripped or fumigated at the Merbein Cemetery site in 2004. Follow-up warren control activities occurred in 2006. Grazing by rabbits still occurs within the enclosure but is greatly reduced and a newly identified population of Dwarf Lantern-flower was located in 2009.
Liaise with stakeholder groups.	Extensive consultation was held with the Merbein Cemetery Trust to engage a consultant to develop a management plan for the whole cemetery (not just the area containing Dwarf Lantern-flower). This led to a management plan and a renewed Public Land Management Agreement (PAMA) being signed between DSE and the Trustees.

Conservation objectives

Long term objective

To ensure that the Dwarf Lantern-flower can survive, flourish, and maintain its potential for evolutionary development in the wild.

Objectives of this Action Statement

- To maintain or improve condition of habitat.
- To secure populations or habitat from potentially incompatible land use or catastrophic loss.
- To increase knowledge of biology, ecology or management requirements.

Intended management actions

The intended management actions listed below are further elaborated in DSE's Actions for Biodiversity Conservation (ABC) system. Detailed information about the actions and locations, including priorities, is held in this system and will be provided annually to land managers and other authorities.

<i>Standard objective</i>	<i>Targets</i>	
To maintain or improve condition of habitat.	<ul style="list-style-type: none"> • Improved seedling recruitment and establishment of mature plants at all important locations, based on detailed annual monitoring. 	
<i>Action</i>	<i>Details</i>	<i>Responsible agents</i>
Control introduced animals.	Remove the last of the Rabbits from within the Merbein Cemetery fenced enclosure. Control rabbits as needed at Bushland Reserve I262 and the state forest locations.	DSE Statewide Services - North West, Parks Victoria
Erect/maintain fence to exclude domestic stock.	At locations of known occurrence, erect and maintain stock proof fencing.	DSE Statewide Services - North West
Manage environmental weeds.	At known locations undertake sensitive management of environmental weeds so as not to unduly disturb soil profiles.	Mildura Rural City, Parks Victoria

<i>Standard objective</i>	<i>Targets</i>	
To secure populations or habitat from potentially incompatible land use or catastrophic loss.	<ul style="list-style-type: none"> • All important populations are secured by formal agreements or planning overlays. 	
<i>Action</i>	<i>Details</i>	<i>Responsible agents</i>
Develop or amend planning scheme overlays and schedules	Establish overlays for Merbein - Fahey's Road and Buloke Street to protect the populations from utilities maintenance, infrastructure works and heavy machinery.	Mildura Rural City
Liaise with stakeholder groups	Undertake liaison with stakeholder groups and land managers to improve habitat by preventing soil disturbance and heavy grazing.	DSE Statewide Services - North West
Conduct enforcement activities	Discourage illegal activities such as rubbish-dumping, soil removal and off-road driving at Red Cliffs SR.	Parks Victoria

<i>Standard objective</i>	<i>Targets</i>	
To increase knowledge of biology, ecology or management requirements.	<ul style="list-style-type: none"> • Acceptable levels of grazing pressure (rabbits per ha or active warren entrances) to maintain viable populations of Dwarf Lantern-flower determined. • Taxonomy clarified population monitoring undertaken. 	

<i>Action</i>	<i>Details</i>	<i>Responsible agents</i>
Assess threats.	Assess the threat of rabbit grazing and the spread of introduced plants.	Parks Victoria
Clarify/review taxonomy.	Two subspecies may occur sympatrically. Determine taxonomy of individuals in the population when fresh seed is present.	Royal Botanic Gardens Melbourne, DSE Statewide Services - North West
Undertake periodic surveillance monitoring of populations.	Monitor, at any time, for the presence of individuals, and especially after rains (particularly but not exclusively after summer rains) for flowering and fruiting.	Mildura Rural City, DSE Statewide Services - North West

References

- Cunningham, G.M., Mulham, W.E., Milthorpe, P.L. & Leigh, J.H. (1981) *Plants of Western New South Wales*. NSW Government Printer: Sydney, Australia.
- DSE 2005 *Advisory List of Rare or Threatened Plants in Victoria - 2005*. Department of Sustainability and Environment: Victoria, Australia.
- Jessop, J.P. & Toelken, H.R. (1986) *Flora of South Australia. Part II Leguminosae – Rubiaceae*. South Australian Government Printing Division: Adelaide, Australia.
- Parsons, R.F. & Browne, J.H. (1982) Causes of plant species rarity in semi-arid southern Australia. *Biological Conservation* **24**: 183-92.
- Sluiter I.K. (2007) Surveys for Rare Plants in Northwest Victoria. 1. *Abutilon fraseri* (Hook.) Walp. and other Associated VROTS - April 2007. *Ogyris Ecological Report No. 2007/05*. Report to Department of Sustainability & Environment, Victoria