

Action Statement

Flora and Fauna Guarantee Act 1988

No. 220

Kelleria

Kelleria laxa

This Action Statement is based on a draft Recovery Plan prepared for this species by DSE under contract to the Australian Government Department of the Environment, Water, Heritage and the Arts.

Description

Kelleria (*Kelleria laxa*) is a prostrate shrub to 3 cm tall and 40 cm (possibly to 200 cm) diameter. It freely produces roots along the stems. Stems are ~1 mm diameter with short hairs at leaf-bases. Leaves are grey-green, narrowly elliptic or lanceolate, alternate, 0.5–3.5 mm (mostly 2–3 mm) long and ~0.6–0.7 mm wide. There is usually one main vein and two lesser veins visible underneath the leaves. Flowers are produced at the branch-tips, singly or in heads of up to four. They appear in January and are cream to white, tubular, ~3 – 3.5 mm long (including the 4 apical lobes each ~1 mm long). Each flower head has 1 or 2 central vegetative buds, which grow out into leafy shoots after the flowers mature. The fruit is an ovoid seed, to 2 mm long enclosed within a thin, membranous sheath (the dried ovary wall) (Walsh & Entwisle 1996).

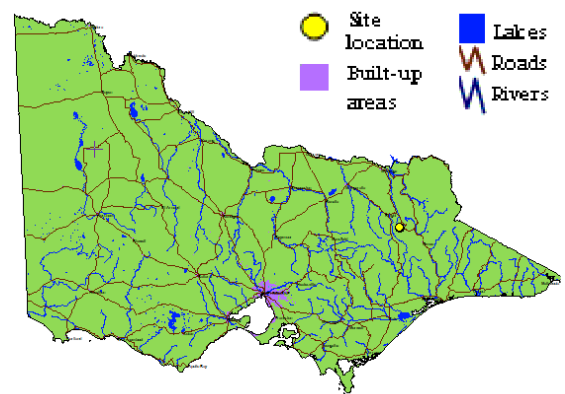
Australian plants of *Kelleria laxa* (confined to Victoria) and the closely related *K. dieffenbachii* (from New South Wales and Tasmania) were previously identified as *Drapetes tasmanica*. Following the treatment of the group by Heads (1990), *Drapetes* is now regarded as a genus confined to South America while *Kelleria* occurs only in Borneo, New Guinea, New Zealand and Australia. The taxonomy of *Kelleria laxa* (*sensu* Heads 1990) is unclear. Australian plants currently referred to that species are believed to be taxonomically distinct from those in New Zealand populations (Marks 2002). Taxonomic description in this Action Statement follows Walsh & Entwisle (1996).

Distribution

Kelleria laxa is known from only one population on the Bogong High Plains in Victoria, near Mt Jim, at approximately 1800 m above sea level.



Kelleria (Photo: Eichler)



Distribution in Victoria
(Flora Information System DSE 2007)

Habitat

The single population of *Kelleria laxa* (comprising 19 'patches' or subpopulations) occurs in Bog Snow-grass (*Poa costiniana*) grassland and Mud Pratia (*Lobelia surrepens*) - Alpine Stackhousia (*Stackhousia pulvinaris*) herbland. The topography is more-or-less flat or falling slightly to the north, south and east. Plants occur on alpine humus soils, typically ~40 cm deep, derived from basalt parent material and organic matter. Plants tend to occur in slightly depressed sites. It is suspected that semi-saturated soils are important for plant survival, and there is anecdotal evidence of decline on drier sites between 1993 and 2002 (N. Walsh pers obs.).

Abundance

It is estimated that approximately 1700 individuals exist, although it is very difficult to be sure of the boundaries of individual plants. These plants occur in 19 patches within a single population. The extent of range and abundance of *Kelleria laxa* prior to European settlement is unknown.

Important populations

The sole population of *Kelleria laxa* occurs in the Alpine National Park at Mt Jim.

Life history and ecology

There have been no targeted studies of the ecology of *Kelleria laxa* but some aspects of the species' ecology were addressed in an Honours study (Marks 2002).

Conservation status

National conservation status

Kelleria is listed as 'vulnerable' under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

Victorian conservation status

Kelleria is listed as 'threatened' under the Victorian *Flora and Fauna Guarantee Act 1988*.

Long term objective

To ensure that the *Kelleria* can survive, flourish and retain its potential for evolutionary development in the wild.

Specific objectives, actions and targets

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.

It is considered 'endangered' in Victoria according to DSE's *Advisory List of Rare or Threatened Plants in Victoria - 2005* (DSE 2005).

Potentially threatening processes

Drought

Drying of site during periods of drought appears to lead to declines in abundance (N. Walsh pers obs.).

Recreational Damage

Recreational walkers may damage patches on or close to the Alpine Walking Track.

Grazing

Grazing and trampling by feral horses threatens all patches.

Inappropriate biomass reduction / fire regimes

All known patches of *Kelleria* appear unaffected by the January 2003 Alpine National Park fires (J. Morgan pers. comm.). However, fires in the future may damage populations and recovery is likely to be hampered if grazing threats remain.

Greenhouse Effect

Temperature increases predicted due to global warming may further reduce suitable habitat for *Kelleria laxa*. Loss of climatic habitat caused by anthropogenic emissions of greenhouse gases is listed as a key threatening process under the *Environment Protection and Biodiversity Conservation Act 1999*.

Previous management action

- Post-fire assessment and monitoring of priority populations of threatened flora after the 2003 wildfire in the Victorian Alps has been conducted. This included mapping of populations in conjunction with fire boundary using existing information, site visits, and data collection describing habitat condition, threats, population demography and vital attributes.

Objective I To increase knowledge of biology, ecology and management requirements

<i>Action</i>	<i>Targets</i>	<i>Responsible</i>
1. Clarify/review taxonomy. Clarify taxonomy to enable an accurate conservation status assessment.	<ul style="list-style-type: none"> ▪ Taxonomic revision of <i>Kelleria laxa</i>. ▪ Determination or update of conservation status for inclusion on state and national threatened species lists. 	Royal Botanic Gardens
2. Acquire baseline population data by conducting detailed field and desk top surveys including identification of the area and extent of the population; estimates of the number, size and structure of the population; and inference or estimation of population change.	<ul style="list-style-type: none"> ▪ Updated records on all state databases (FIS, VROTPop and Herbarium). ▪ Populations accurately mapped. 	DSE
3. Assess habitat characteristics and/or condition. Accurately survey known habitat, and collect floristic and environmental information relevant to community ecology and condition.	<ul style="list-style-type: none"> ▪ Ecological requirements identified for the completion of essential life history stages, recruitment and dispersal. ▪ Core habitat mapped. 	DSE
4. Conduct survey to locate suitable habitat. Identify and survey potential habitat using ecological and bioclimatic information that may indicate habitat preference.	<ul style="list-style-type: none"> ▪ Predictive model for potential habitat developed and tested. 	DSE
5. Undertake research to identify key biological functions. Evaluate current reproductive / regenerative status, seed bank status and longevity, fecundity, and recruitment levels. Determine seed germination requirements by conducting laboratory and field trials aimed to identify key stimuli, and determine stimuli for vegetative regeneration.	<ul style="list-style-type: none"> ▪ Seed bank/regenerative potential quantified for target populations. ▪ Stimuli for recruitment/regeneration identified. ▪ Management strategies identified to maintain, enhance or restore regenerative processes fundamental to reproduction and survival. ▪ Determine recruitment response to the January 2003 fires in burnt patches, if they are located. 	DSE Royal Botanic Gardens
6. Analyse population trends. Measure population trends and responses against recovery actions by collecting demographic information including recruitment and mortality, timing of life history stages and morphological data. Collate, analyse and report on census data and compare with management histories.	<ul style="list-style-type: none"> ▪ Techniques for monitoring developed and implemented. ▪ Census data for target populations. ▪ Population growth rates determined. ▪ Population Viability Analysis completed for targeted populations. 	DSE

Objective II To secure populations or habitat from potentially incompatible land use or catastrophic loss.

<i>Action</i>	<i>Targets</i>	<i>Responsible</i>
7. Establish cultivated plants <i>ex situ</i> to safeguard from the unforeseen destruction of the wild population.	<ul style="list-style-type: none"> ▪ Development of effective propagation and cultivation techniques. ▪ At least 30 mature plants in cultivation. 	DSE, Royal Botanic Gardens

Objective III To maintain or enhance habitat for *Kelleria*.

<i>Action</i>	<i>Targets</i>	<i>Responsible</i>
8. Assess threats. Periodically monitor the threat posed by browsing and weed invasion.	<ul style="list-style-type: none"> ▪ Periodic threat monitoring completed. ▪ Management action planned where required. 	Parks Victoria

Objective IV To increase the number of populations or individuals

<i>Action</i>	<i>Targets</i>	<i>Responsible</i>
9. Store reproductive material. Establish a seed bank.	<ul style="list-style-type: none"> ▪ Long-term storage facility identified. ▪ Seed from important populations in storage. 	DSE, Royal Botanic Gardens
10. Determine seed viability.	<ul style="list-style-type: none"> ▪ Seed viability determined. 	Royal Botanic Gardens

Objective V To increase community awareness and support

<i>Action</i>	<i>Targets</i>	<i>Responsible</i>
11. Involve community groups and volunteers in recovery activities.	<ul style="list-style-type: none"> ▪ Opportunities for involvement identified, promoted and supported. 	DSE

References

- DSE (2005) *Advisory List of Rare or Threatened Plants in Victoria - 2005*. Department of Sustainability and Environment, East Melbourne, Victoria.
- Heads, M.J. (1990) *Kelleria*, in: *Flora of Australia Volume 18: Podostemaceae to Combretaceae*, George, A.S. (ed), Australian Government Publishing Service, Canberra.
- Marks, C. 2002. *Investigations into Kelleria laxa and Kelleria dieffenbachii*. Honours thesis, School of Botany, University of Melbourne.
- Walsh, N.G. & Entwisle, T.J. (1996) *Flora of Victoria, Vol 3: Dicotyledons: Winteraceae to Myrtaceae*, Inkata Press, Melbourne.

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