

Action Statement

Flora and Fauna Guarantee Act 1988

No. 227

Snow Pratia

Pratia gelida

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

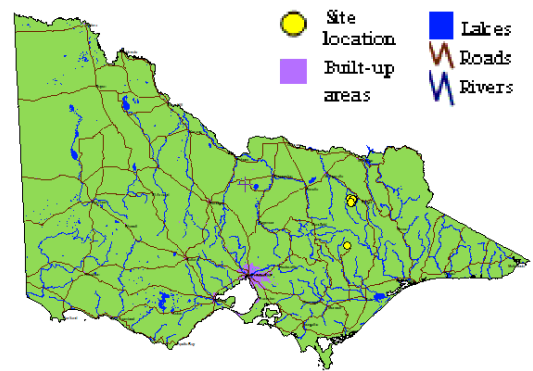
Snow Pratia (*Pratia gelida*) is a creeping, prostrate, perennial herb which often produces roots from stem nodes. The leaves are linear lanceolate to narrowly elliptic, and grow to 18 mm long, with margins that are slightly notched but often appear entire. The leaf bases narrow gradually, and leaves either attach directly and alternately to stems or have petioles to 1 mm long. The leaf surfaces are smooth and glossy; the upper surface is darker green than the lower surface. Small, white to faint lilac, fan-shaped flowers are produced at irregular intervals along the stems on pedicels, which are 0.5–3 mm long. The five petals, each 3–4 mm long, are united at the base into a tube ~2 mm long that is deeply slit along the upper side (Walsh & Entwisle 1999). The five calyx lobes are 1–1.8 mm long. The five anthers are united into a tube, with the lower pair of anthers both tipped by a short bristle. The fruits are fleshy, nearly spherical and 1.6–2.5 mm long. Snow Pratia flowers from November to December, and fruits from January to April (Walsh & Entwisle 1999).

Distribution

Snow Pratia is a Victorian endemic, restricted to the Mt Buffalo National Park and Mt Reynard in the Alpine National Park.

Abundance

It is estimated that 1500–3000 individuals exist (although demarcation of one plant from another is difficult due to the creeping, rhizomatous habit of the species). These plants occur in six populations. The extent of range and abundance of Snow Pratia prior to European settlement is unknown.



Distribution in Victoria
(Flora Information System DSE 2007)

Important populations

Important populations necessary to the long term survival and recovery of Snow Pratia occur in the following locations:

Alpine National Park, Wonnangatta Moroka Unit	Mt Reynard (plants occur in 17 ephemeral pools ranging in size from ~2-20 m ² within an area of ~2 ha)
Mt Buffalo National Park	Mt Buffalo, Hospice Plain (~1000 plants in numerous patches)
	Mt Buffalo, Bogong Plain (~10-50 plants)
	Mt Buffalo, Wirbill Plain (~500-1000 plants)
	Mt Buffalo, Blackfellows Plain (~10-50 plants in two patches)
	Mt Buffalo, Skeleton Gully (~20 plants)

Habitat

Snow Pratia occurs in seasonally inundated depressions within grassland or heathland. At Mt Reynard, associated species include Dwarf Buttercup (*Ranunculus millanii*), White Purslane (*Neopaxia australasica*), *Lachnagrostis meionectes*, and the exotic Sheep Sorrell (*Acetosella vulgaris*). This population occurs on fine blackish silt soils that crack in summer, at ~1680 m above sea level. The Mt Buffalo populations occur with Bog Snow-grass (*Poa costiniana*), Blue Snow-grass (*Poa phillipsiana*), Candle Richea (*Richea continentis*), Granite Buttercup (*Ranunculus graniticola*), Spreading Rope-rush (*Empodisma minus*), *Lachnagrostis meionectes*, Delicate Bush-pea (*Pultenaea tenella*), Ace of Spades (*Epacris gunnii*), Mud Pratia (*Lobelia surrepens*), Silky Snow-daisy (*Celmisia pugioniformis*), Fog Club-sedge (*Isolepis montivaga*) and/or Common Juniper Moss (*Polytrichum juniperinum*). Mt Buffalo populations occur on silty alluvium peat soil, at 1310-1510 m above sea level.

Life history and ecology

Snow Pratia is a mat-forming, rhizomatous herb that may be easily damaged by human trampling or herbivore grazing. Little else is known of the biology or ecology of this species.

A small number of plants from both Mt Buffalo and Mt Reynard populations are currently maintained at the Royal Botanic Gardens Melbourne.

Conservation status

National conservation status

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

Victorian conservation status

Snow Pratia is listed as threatened under the Victorian *Flora and Fauna Guarantee Act 1988*.

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

Potentially threatening processes

The effects of climate change potentially threaten populations at all sites. At Mt Reynard, there is evidence of long-term drying of the site. There is a low level of threat of trampling by hikers. No other threats are apparent since cattle grazing was removed in 1992. At Mt Buffalo, the Hospice Plain population extends along the Crystal Brook creek-line, and the upper part of population is prone to covering by gravel during deluge conditions and run-off from Reservoir Track. The Bogong Plain population is exposed to a low level of threat of trampling by hikers and moderate potential threat of inadvertent damage through bridge repair or modification. Wirbill Plain is exposed to a low level threat of trampling by hikers. The Blackfellows Plain population is threatened by weed invasion, while the Skeleton Gully has no obvious threats – the site is rarely visited. Following the 2003 fires, the distribution of the species was essentially unchanged and regeneration appeared to be good (Coates *et al.* 2004) although pest plants were an increased problem.

Weed invasion

Weed invasion could have a large influence on the survival of some populations. Notably, the grass Brown-top Bent (*Agrostis capillaris*) is growing in close proximity to the population at Blackfellows Plain. Yarrow (*Achillea millefolium*) occurs close to, or within, the Hospice Plain population. Yarrow, Brown-top Bent and a number of other introduced grasses are present on Bogong Plain, although they occur predominantly in the vicinity of the ski resort, which is upstream of the Snow Pratia population. Visitors to sites may inadvertently introduce weed seeds (such as English Broom (*Cytisus scoparius*)) from their shoes.

Trampling

Recreational hikers and cross country skiers regularly visit areas near some populations, and plants may be accidentally damaged by them or through track maintenance. Visitors to sites may also accidentally trample plants.

Climate change

Increased temperatures expected with global warming may lead to long-term drying of sites.

Previous management action

- Post-fire assessment and monitoring of priority populations of threatened flora after 2003 wildfire in the Victorian Alps, including mapping of populations in conjunction with fire boundary using existing information, site

Long term objective

To ensure that Snow Pratia 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.

Objective I To increase knowledge of biology, ecology and management requirements To secure populations or habitat from potentially incompatible land use or catastrophic loss

Action	Targets	Responsible
1. Acquire baseline population data. Conduct 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 (Flora Information System, VROTPop and Herbarium)▪ Populations accurately mapped. Survey should utilise existing Parks Victoria monitoring data from the five Mt Buffalo sites since 1998.	Parks Victoria, DSE
2. Assess habitat characteristics and/or condition. Accurately survey known habitat, and collect and analyse 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.	Parks Victoria, DSE
3. Conduct survey to locate suitable habitat. Identify and survey potential / historical 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.	Parks Victoria, DSE
4. Undertake research to identify key biological functions. Evaluate current reproductive / regenerative status, seed bank status and longevity, fecundity, and recruitment levels by conducting field based experimental trials. 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.	DSE, Royal Botanic Gardens
5. 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 collected.▪ Population growth rates determined.▪ Population Viability Analysis completed for targeted populations.	Parks Victoria, DSE

visits and data collection describing habitat condition, threats, population demography and vital attributes.

- Personal observations by N. Walsh suggest that Snow Pratia was not greatly affected by the fire itself. However, increased mobile granite particles flooding the wetlands may also potentially smother Snow Pratia habitat, particularly at the Hospice Plain site.

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

<i>Action</i>	<i>Targets</i>	<i>Responsible</i>
6. Close access to reserve or habitat on public land. Where high visitor numbers poses a threat, assess feasibility of restricting access.	<ul style="list-style-type: none"> ▪ Measurable seedling recruitment / vegetative regeneration and a measurable reduction in plant mortality at the Mt Reynard and five known Mt Buffalo sites. ▪ Protocols developed for researcher access to sites, including footwear, number of people assessing the sites and prevention of pathogen and weed spread by washing footwear. 	Parks Victoria, DSE
7. Realign tracks and roads. Assess threat posed by tracks and roads and consider re-routing tracks if significant.	<ul style="list-style-type: none"> ▪ Sections of the Black Wall walking track re-routed to avoid the Wirbill Plain population if significant threat detected. 	Parks Victoria, DSE
8. Liaise with stakeholder groups. Advise contractors of populations to avoid damage during track or other works.	<ul style="list-style-type: none"> ▪ Contractors advised of the locations of populations and supervise contractors when conducting works close to sites. 	Parks Victoria, DSE
9. 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 25 mature plants in cultivation. 	DSE, Royal Botanic Gardens

Objective III To improve the condition of habitat

<i>Action</i>	<i>Targets</i>	<i>Responsible</i>
10. Manage environmental weeds. Control current or potential weeds using careful application of herbicide or manual removal.	<ul style="list-style-type: none"> ▪ Measurable seedling recruitment / vegetative regeneration and a measurable reduction in plant mortality at the Mt Reynard and five known Mt Buffalo sites. ▪ Protocols developed for researcher access to sites, including footwear, number of people assessing the sites and prevention of pathogen and weed spread by washing footwear. 	Parks Victoria, DSE
11. Manage sedimentation. Maintain and upgrade the Reservoir Track at Mount Buffalo to minimise sediment runoff into Crystal Brook. Trap sediment in Crystal Brook upstream of the Snow Pratia site.	<ul style="list-style-type: none"> ▪ Reservoir Track resheeted with coarse gravel. ▪ All culverts and drains checked and maintained regularly, including during or after heavy rain events. ▪ Additional culverts installed and existing culverts replaced where required to minimise water flowing over the track, particularly during and after heavy rain events. ▪ Sediment trap/s constructed and working effectively, and checked and cleaned out regularly. 	Parks Victoria

Objective IV To increase the number of populations or individuals

<i>Action</i>	<i>Targets</i>	<i>Responsible</i>
12. Store reproductive material. Establish a seed bank.	<ul style="list-style-type: none"> ▪ Long-term storage facility identified. ▪ Seed from target populations in storage. 	DSE, Royal Botanic Gardens
13. 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>
14. Involve community groups and volunteers in recovery activities.	<ul style="list-style-type: none"> ▪ Opportunities for involvement identified, promoted and supported. 	DSE, Parks Victoria

References

- Coates, F., Taranto, M., Trumball-Ward, A. & Browne, A. (2004) Post-fire recovery of priority populations of threatened flora in north east Victoria after the 2003 bushfires. *Arthur Rylah Inst. Env. Res. Tech. Rep. Ser. No. 150*. Dept of Sustainability and Environment, Victoria.
- DSE (2005) *Advisory List of Rare or Threatened Vascular Plants in Victoria - 2005*. Department of Sustainability and Environment, East Melbourne, Victoria.
- Walsh, N.G. and Entwisle, T.J. (1999) *Flora of Victoria: Volume 4. Dicotyledons Cornaceae to Asteraceae*, Inkata Press, Melbourne.

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