

THREATENED SPECIES LISTING STATEMENT

Creeping spyridium, *Spyridium obcordatum* (Hook.f.) W.M.Curtis 1970



Status

Tasmanian *Threatened Species Protection Act 1995*

.....vulnerable

Commonwealth *Endangered Species Protection Act 1992*

.....Vulnerable



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Description

Creeping spyridium is a prostrate shrub that is generally found amongst rock outcrops in dry woodlands and open forest. It relies on disturbance for regeneration of soil stored seed and can also regenerate vegetatively. It flowers from mid-September to October.

Creeping spyridium has a thickening at the base of the main stem from which numerous branches arise. The branches are generally up to 40 cm long and are brittle and wiry with chestnut coloured wood. The branches tend to spread along the ground or trail over embankments or between rocks. The leaves are indented at the tip (obcordate) with an indented mid-rib and recurved margins and are up to 10 mm long. The upper surface is bright green

and glossy and the lower surface is white with a covering of short hairs.

The flowers are small and white (about 3 mm wide) and are organised in tight clusters that are surrounded by brown bracts and floral leaves (leaves that look like petals). The seeds are hard, light brown and 1.0 to 1.5 mm in size.

Creeping spyridium belongs to the family Rhamnaceae. It is superficially similar to small-leaf spyridium (*Spyridium lawrencei*) and spreading stenanthemum (*Stenanthemum pimeleoides*) but does not occur within the range of these eastern Tasmanian species.

Distribution and Habitat

Creeping sphyridium is endemic to Tasmania. It is restricted to approximately 280 square kilometres in the north of the state on hills to the east of the Dazzler Range near Beaconsfield, and in coastal areas from Greens Beach to Hawley Beach at Port Sorell. It is estimated to occupy approximately 20 hectares in total. Inland populations and two coastal populations occur in the Northern NRM (Natural Resource Management) region and two coastal populations extend into the North-West NRM region.

Creeping sphyridium primarily occurs amongst serpentine outcrops in dry open forest or woodland

dominated by *Eucalyptus amygdalina*. In coastal areas, it is found in *Allocasuarina verticillata* coastal woodland and low open heathland dominated by *Allocasuarina monilifera* and *Leptospermum scoparium* on sandstone and dolerite.

The species is found in open habitats and is often associated with outcropping rocks, exposed rock plates and rocky ground. It is most abundant in disturbed areas (e.g. associated with firing, mining activities and tracks) as it largely relies on disturbance for recruitment from seed and is also able to resprout after damage. It occurs at altitudes less than 180 metres above sea level.

Important Locations

	Location Tenure	NRM region	1:25 000 mapsheet	Year last seen	Area (ha)	Number of mature plants
1	North of Scotts Hill – 2 sites Andersons Creek Forest Reserve State Forest/Andersons Creek Forest Reserve	N	Port Sorell	1996 1996	10 0.5	22,700 3,600
2	–2 sites Dans Hill Settlers Hills Dans Hill Forest Reserve	N	Beaconsfield	1996 1985	2.5	22,000
3	Slopes north of Barnes Hill –3 sites Dans Hill Forest Reserve Dans Hill Forest Reserve Private land	N	Beaconsfield	1996 1996 1991	1.1	3 3,300
4	East of Ironstone Hills Dans Hill Forest Reserve	N	Harford	1996		
5	North of Holwell Gorge Private land	N	Beaconsfield	1995		
6	Wentworth Hill, Greens Beach Private land	N	Greens Beach	1996		1,000
7	Sea Hill, Greens Beach Private land	N	Low Head	1990		
8	Little Badger Head Narawntapu National Park	NW	Port Sorell	1990		4 (0 in 1996, 2002)
9	Hawley Beach, Port Sorell – 4 sites -Hawk Trap Hill (public open space) -Hawk Trap Hill (in subdivision) -Hawk Trap Hill Private land -TipToe Hill (Hawk Trap Hill Junior) Hawley Nature Reserve	NW	Devonport	2002 2002 2000 1996	1.9 3 0.005	1970 in 1996 200 in 2002 100 -200 4 140

Threats, Limiting Factors and Management Issues

Creeping sphyridium is at risk because of its restricted distribution, with 9 populations occupying only about 20 hectares in an area of about 280 square kilometres. Populations, particularly those in coastal habitats, are threatened by land clearance due to housing, agriculture and

mining, and a decline in the quality of habitat through rubbish dumping, ‘tidying up’ of bushland and spread of weeds and garden plants. Coastal populations are also limited by drought stress.

Recruitment is primarily from soil stored seed, particularly following fire or soil disturbance, though many seedlings are lost through grazing by

native animals and rabbits. Seed germination may be promoted by high temperatures experienced with medium to high intensity burns. The species has a requirement for an open habitat. Frequent low intensity fires that favour species that quickly regenerate by resprouting will result in a decline in numbers due to the crowding out of seedlings and gradual depletion of the soil seed bank. Established plants of *Spyridium obcordatum* are able to resprout after grazing, even when this may be severe. Vegetatively regeneration through layering can occur when plants are protected from grazing.

Creeping spyridium is most abundant on the inland sites on serpentine. As well as a preference for this substrate and reduced drought stress, this may reflect a beneficial disturbance regime promoting recruitment from seed. Medium to high intensity fires in the region may have promoted seed germination. The serpentine areas have also had a long history of disturbance from tracks and mining, increasing habitat openness and promoting recruitment from seed. While past mining activity appears to have been beneficial to the species, mining intensive enough to result in habitat clearance remains a risk. Most of the inland populations are protected in Forest Reserves, one soon to be converted into a Conservation Area, though this does not preclude mining. Populations on private land are at risk from clearing.

In contrast, most of the coastal occurrences are on private land and are threatened by housing and residential activity. Only a small patch of the largest population at Port Sorell is formally reserved in the Hawley Nature Reserve. Most of one of the two largest patches is in a council reserve (public open space). While nearly 2,000 plants were estimated in this patch in 1996, plant numbers appear to have declined dramatically to about 200 plants in 2002 and the patch is now in poor health, probably due to drought stress. In contrast, plants in a nearby patch on housing lots are thriving. Protection of some plants in this patch is afforded by a council by-law preventing clearing above the 70 m contour. A covenant to protect the species on the council reserve is currently being negotiated.

The Greens Beach population is also in decline from past clearing and residential activity. The majority of remaining plants were observed on a vacant lot with significant dumping of rubbish in 1996. Invasion of habitat by weeds and garden plants is a threat to the species in such populated areas as is 'tidying up' of bushland which removes fallen branches etc. that may offer seedlings some protection from grazing. Updated estimates of plant numbers in coastal populations are required to prioritise management.

The small population in the Narawntapu National Park was not found in searches in 1996 and 2002. The decline of this population was probably due to frequent low intensity firing, promoting heathland in which shrubs such as *Spyridium obcordatum* that primarily regenerate from seed and which require open habitats, cannot compete.

Conservation Assessment

Population Estimate

Creeping spyridium is known from 9 populations. The total number of plants is estimated at approximately 55,000 mature individuals. The largest population mostly occurs within the Andersons Creek Forest Reserve and was estimated to contain more than 26,000 individuals in 1996. The largest patch of the Dans Hill population is the densest with approximately 22,000 individuals estimated in only 2.5 ha. Populations in coastal habitats are significantly smaller with about 2,200 and 1,000 mature individuals estimated in 1996 in the two largest populations, though the former has since declined to less than 500 plants. A concerted effort was made to estimate plant numbers and area occupied of significant stands in 1996, during which time the small population in the Narawntapu National Park could not be found. New estimates are required for populations in coastal habitat following subdivision. It is likely that more patches of the species exist, particularly as much of the coastal habitat is privately owned and has not been thoroughly searched.

Reservation Status

Inland populations of creeping spyridium are well reserved within the Dans Hill and Andersons Creek Forest Reserves. The Dans Hill Forest Reserve is in the process of being converted into a Conservation Area. Coastal populations are poorly reserved with a small subpopulation of 140 plants in the Hawley Nature Reserve and a few plants in the Narawntapu National Park. The latter population could not be found in surveys conducted in 1996 and 2002.

Assessment Criteria

Creeping spyridium meets the criteria for listing as vulnerable on the Tasmanian *Threatened Species Protection Act 1995* because

- it has a restricted distribution extending over an area of less than 2,000 square kilometres and occupying less than 50 hectares
- it occurs in no more than 10 populations
- there is a continuing decline

It qualifies as Vulnerable using the 2000 IUCN (World Conservation Union) Red List criteria.

Recovery Program

Objectives

To down-list the species from vulnerable to rare.

Specific objectives are to:

- increase the number of populations to greater than 10 by protection of known populations and survey
- prevent declines in known populations by provision of appropriate disturbance for recruitment
- maintain or improve habitat quality by minimising impacts from residential activities
- develop mechanisms to manage populations in the long term

Existing Management

A Recovery Plan for creeping *spyridium* (Coates 1991) is currently being updated (Threatened Species Unit 2003). The species is also included in a multi-species Recovery Plan (Barker and Johnson 1998) though this plan has not been implemented. A large area of habitat on serpentine has been purchased through the 1999 Regional Forest Agreement Private Land Reserve Program and included in Forest Reserves, one of which is being converted into a Conservation Area. These reserves are managed for their nature conservation values. The species is included in Management Plans for the Hawley Nature Reserve and Narawntapu National Park. Part of the Port Sorell population is has been acquired by the Latrobe Council as a council reserve and a covenant is being prepared. Some of the remaining areas of this population on private land are protected by a council by-law preventing clearing above the 70 m contour.

Actions Needed

- pursue options with landowners/managers to protect populations against possible changes in land use that would be detrimental to the species
- attempt to re-establish the population in the Narawntapu National Park from soil stored seed
- survey for new populations
- determine appropriate disturbance requirements to promote or maintain health and recruitment in coastal populations
- monitor disturbance requirements relative to recruitment needs and problems with invasion of weeds and garden plants in known populations
- advise and help landowners/managers to manage habitat in order to maintain or increase population size through appropriate firing and

disturbance to maintain or increase recruitment and prevent invasion by weeds and garden plants

- establish a mechanism with community input to ensure management intervention when required

Information needed

- determine disturbance regimes that sustain or increase population numbers in the long term, particularly for coastal populations
- determine optimal methods for promoting germination and establishment from soil stored seed
- determine whether there are any more populations in existence

Management Advice

For the land owner/land manager

- maintain populations in their natural state by leaving surrounding vegetation including trees, shrubs, ground cover, fallen branches and rocks as is
- prevent weeds and garden plants from invading the sites
- if sites are becoming overgrown, consider burning or slashing to increase openness
- if numbers of creeping *spyridium* plants on your land are decreasing contact the Threatened Species Unit for advice
- consider some form of long term protection, e.g. private nature reserve, management agreement, covenant etc.

For everyone

- search for new populations
- help us to monitor known populations

Further Information

Contact details: Threatened Species Unit, Department of Primary Industries, Water and Environment, GPO Box 44 Hobart Tasmania Australia 7001. Ph (03) 6233 6556 fax (03) 6233 3477.

Specialist Advice: Wendy Potts, Threatened Species Unit, Department of Primary Industries, Water and Environment

Source Material

References

Barker, P.C.J. & Johnson, K.A. (1998) *Recovery Plan for selected Tasmanian forest associated plants*. Forestry Tasmania, Hobart.

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Threatened Species Unit (2003) *Creeping spyridium*, *Spyridium obcordatum* *Flora Recovery Plan 2003-2007*. Department of Primary Industries, Water and Environment, Hobart.

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& follow the links to Natural Environment, Threatened Species, then List of Threatened Species.

Permit: It is an offence to collect, possess or disturb this species unless under permit.