

**Approved Conservation Advice for  
*Spyridium lawrencei* (Small-leaf Spyridium)**

(s266B of the *Environment Protection and Biodiversity Conservation Act 1999*)

This Conservation Advice has been developed based on the best available information at the time this Conservation Advice was approved; this includes existing plans, records or management prescriptions for this species.

### **Description**

*Spyridium lawrencei*, Family Rhamnaceae, also known as the Small-leaf Spyridium or Small-leaf Dustymiller, is a woody shrub (Curtis and Morris, 1975) approximately 1–1.5 m in height. The Small-leaf Spyridium has thick, leathery leaves 2–4 mm in length and variable in shape from convex and round to heartshaped, with blunt or notched tips and recurved margins. The upper surface of the leaves is usually devoid of hairs with deeply indented veins while the lower surface is covered with a dense layer of short hairs.

Flowers are approximately 2 mm in diameter, cream-coloured and clustered at the ends of branches in dense heads. The species has conspicuous velvety, whitish ‘leaves’ that surround the flowers. Bracts, receptacle and sepals are densely covered in hairs (Curtis and Morris, 1975; Coates, 1991).

Flowers are evident from late November, with the majority of plants flowering in February, though some plants will flower until April. The floral leaves remain on plants for most of the year. Seed is produced after one season’s flowering, develops over winter and is not released until the following year. Seed development is greatest during October and November, with fruit maturing in January for most of the population. Seed is released in February, though early seed release may commence in November and extend through to April (TSS, 2009).

### **Conservation Status**

Small-leaf Spyridium is listed as **endangered**. This species is eligible for listing as vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) as, prior to the commencement of the EPBC Act, it was listed under its previous name, *Spyridium microphyllum*, as endangered under Schedule 1 of the *Endangered Species Protection Act 1992* (Cwlth). The Small-leaf Spyridium is also listed as vulnerable under the *Threatened Species Protection Act 1995* (Tasmania).

### **Distribution and Habitat**

The Small-leaf Spyridium is known from the Central East Coast and the Eastern Midlands of Tasmania, with its main subpopulations centred on the Swan, Apsley and St Pauls Rivers, with an outlying subpopulation in the southeast near Orford (Coates, 1991). The species has a linear range of 95 km, an extent of occurrence 2,300 km<sup>2</sup> and an area of occupancy of about 7.4 ha.

The total population is estimated to be about 11,000 mature individuals (TSSC 2009), with 10 known subpopulations. The largest population, containing approximately 9200 mature individuals, largely occurs in the Douglas-Apsley National Park, with some plants occurring on adjacent private land. A further population occurs in the Three Thumbs State Reserve with approximately 200 mature individuals, and another in the Apslawn Conservation Area with approximately 10 mature individuals (TSSC 2009).

Small-leaf Spyridium on the St Pauls and Swan Rivers usually occurs in the zone between riparian vegetation, woodland or forest, and pasture, where it is a component of shrubby

vegetation maintained by regular disturbances such as fire or flooding (Coates, 1991). The species also occurs on rock plates on forested slopes at Blindburn Creek and Three Thumbs.

This species occurs within the Tasmanian South East Bioregion and the North and South Tasmanian Natural Resource Management Regions.

The distribution of this species is associated with the “*Eucalyptus ovata*–*Callitris oblonga* (Black Gum) Forest” EPBC Act-listed threatened ecological community.

### **Threats**

The main identified threats to the Small-leaf Spyridium are fire and degradation of habitat from weeds, notably Gorse (*Ulex europaeus*) (TSS, 2009).

Whilst the Small-leaf Spyridium has the capacity to recover after fire *via* resprouting, the species’ response to particular fire intensities is poorly understood. Observations suggest that too frequent fire may eliminate the species (Coates, 1991; Barker and Johnson, 1997; Coates et al., 1999). Populations on exposed highly isolated sites may be impacted adversely by fire if follow-up rains are not forthcoming, as evidenced by the Three Thumbs subpopulation near Orford.

Weed invasion of populations, especially by Gorse, is a major issue for the Small-leaf Spyridium, most notably on private land on the St Pauls and Swan Rivers (TSS, 2009).

Whilst the Small-leaf Spyridium can recover vegetatively following damage from grazing, the level of grazing that the species can tolerate is unknown (Coates, 1991). Inappropriate grazing of habitat on the St Pauls and Swan Rivers is therefore a potential threat to the viability of these subpopulations.

Land clearing was a historical impact on the species through loss of potential habitat and isolated populations. It may still occur in small, isolated populations on private lands (TSS, 2009).

### **Research Priorities**

Research priorities that would inform future regional and local priority actions include:

- Design and implement a monitoring program or, if appropriate, support and enhance existing programs.
- More precisely assess population size, distribution, ecological requirements relative impacts of threatening processes.
- Undertake seed germination and/or vegetative propagation trials to determine the requirements for successful establishment.

### **Regional Priority Actions**

The following regional priority recovery and threat abatement actions can be done to support the recovery of the Small-leaf Spyridium.

#### Habitat Loss, Disturbance and Modification

- Monitor known populations to identify key threats.
- Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.
- Investigate formal conservation arrangements, management agreements and covenants on private land, and for crown and private land investigate inclusion in reserve tenure if possible.
- Manage any other known, potential or emerging threats.

#### Invasive Weeds

- Develop and implement a management plan for the control of Gorse in the region.

- Ensure chemicals or other mechanisms used to eradicate weeds do not have a significant adverse impact on the Small-leaf Spyridium.

#### Fire

- Develop and implement a suitable fire management strategy for the habitat of the Small-leaf Spyridium.
- Where appropriate, provide maps of known occurrences to local and state Rural Fire Services and seek inclusion of mitigative measures in bush fire risk management plan(s), risk register and/or operation maps.

#### Conservation Information

- Raise awareness of the Small-leaf Spyridium within the local community.
- Frequently engage with private landholders and land managers responsible for the land on which populations occur and encourage these key stakeholders to contribute to the implementation of conservation management actions.

#### Enable Recovery of Additional Sites and/or Populations

- Undertake appropriate seed collection and storage.
- Investigate options for linking, enhancing or establishing additional populations.
- Implement national translocation protocols (Vallee et al., 2004) if establishing additional populations is considered necessary and feasible.

#### **Local Priority Actions**

The following local priority recovery and threat abatement actions can be done to support the recovery of the Small-leaf Spyridium.

#### Habitat Loss, Disturbance and Modification

- Minimise adverse impacts from land use at known sites.
- Protect populations of the listed species through the development of conservation agreements and/or covenants.

#### Invasive Weeds

- Identify and remove weeds in the local area, which could become a threat to the Small-leaf Spyridium, using appropriate methods.

#### Trampling, Browsing or Grazing

- Where appropriate, manage total grazing pressure at important/significant sites through exclusion fencing or other barriers on private land.

#### Fire

- Implement an appropriate fire management regime for local populations.

This list does not necessarily encompass all actions that may be of benefit to the Small-leaf Spyridium, but highlights those that are considered to be of highest priority at the time of preparing the Conservation Advice.

#### **Existing Plans/Management Prescriptions that are Relevant to the Species**

- Threatened Species Section (2008). Draft Greater Freycinet Region Threatened Species Recovery Plan 2008 – 2012. Department of Primary Industries and Water, Hobart.

These prescriptions were current at the time of publishing; please refer to the relevant agency's website for any updated versions.

### Information Sources:

- Barker, PCJ and Johnson K (1997). Research and Recovery Requirements for the Management of Threatened Species in Tasmania's Commercial Forests. Report to the Tasmanian RFA Environment and Heritage Technical Committee
- Coates F (1991). The Conservation Ecology and Management of Five Rare Species in the *Rhamnaceae* Family. Wildlife Scientific Report 91/3, Department of Parks, Wildlife and Heritage, Hobart
- Coates F, Kirkpatrick JB and Minchin PR (1999). Towards an explanation of the causes of the rarity of two Tasmanian *Spyridium* species. *Australian Journal of Ecology* 24: 11–17.
- Curtis WM and Morris DI (1975). The Student's Flora of Tasmania Part 1 *Gymnospermae Angiospermae: Ranunculaceae to Myrtaceae* (second edition). Government Printer, Hobart.
- Threatened Species Section (TSS) (2008). Draft Greater Freycinet Region Threatened Species Recovery Plan 2008 – 2012. Department of Primary Industries and Water, Hobart.
- Threatened Species Section (TSS) (2009). Listing Statement for *Spyridium lawrencei* (small-leaf dustymiller). Department of Primary Industries and Water, Tasmania. Available on the Internet: [http://www.dpiw.tas.gov.au/inter.nsf/Attachments/SROS-6VJU8L/\\$FILE/Spyridium%20lawrencei%20listing%20statement.pdf](http://www.dpiw.tas.gov.au/inter.nsf/Attachments/SROS-6VJU8L/$FILE/Spyridium%20lawrencei%20listing%20statement.pdf)
- Threatened Species Scientific Committee (TSSC) (2009). Commonwealth Listing Advice on *Spyridium lawrencei*. Department of the Environment, Water, Heritage and the Arts. Available on the Internet at: <http://www.environment.gov.au/biodiversity/threatened/species/pubs/27036-listing-advice.pdf>.
- Vallee, L, Hogbin, T, Monks, L, Makinson, B, Matthes, M and Rossetto, M (2004), Guidelines for the Translocation of Threatened Plants in Australia - Second Edition, Australian Network for Plant Conservation, Canberra.