

**Advice to the Minister for the Environment, Heritage and the Arts
from the Threatened Species Scientific Committee (the Committee)
on Amendment to the list of Threatened Species under the
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)**

1. Scientific name (common name)

Spyridium lawrencei (Small-leaf Spyridium)

2. Reason for Conservation Assessment by the Committee

This advice follows assessment of information gathered through the Commonwealth's Species Information Partnership with Tasmania, which is aimed at systematically reviewing species that are inconsistently listed under the EPBC Act and relevant state legislation/lists.

The Small-leaf Spyridium is listed as vulnerable under the Tasmanian *Threatened Species Protection Act 1995*. As *Spyridium microphyllum*, it was originally listed as vulnerable under the EPBC Act's predecessor, the *Endangered Species Protection Act 1992* (ESP Act). It was then listed as endangered under the ESP Act, and its endangered status was retained when the EPBC Act came into force. After taxonomic study, the species is now known as *Spyridium lawrencei*. The Committee provides the following assessment of the appropriateness of the species' inclusion in the endangered category in the EPBC Act list of threatened species, as *Spyridium lawrencei*.

This is the Committee's first consideration of the species under the EPBC Act.

3. Summary of Conclusion

The Committee judges that the species has been demonstrated to have met sufficient elements of Criterion 2 to make it **eligible** for listing as **endangered**.

The highest category for which the species is eligible to be listed is **endangered**.

4. Taxonomy

The species is conventionally accepted as *Spyridium lawrencei* (Small-leaf Spyridium).

The species was known as *Spyridium microphyllum* but this species was considered to be conspecific with *Spyridium lawrencei* and was thus placed in synonymy of that species by Stones and Curtis (1978) and Buchanan (1999) (APC, 2008).

5. Description

The Small-leaf Spyridium is a many-branched shrub, growing to 1.5 m high (Curtis & Morris, 1975; Coates, 1991). In open situations it grows as a compact shrub, tending to be more straggling in shaded situations (Coates, 1991). It has small, thick, leathery leaves 2–4 mm long, and very small cream-coloured flowers clustered at the ends of branches. The flowers are surrounded by conspicuous velvety floral bracts (Curtis & Morris, 1975; Coates, 1991).

6. National Context

The Small-leaf *Spyridium* is endemic to Tasmania (Buchanan, 2005), occurring on the central east coast and eastern Midlands, with the main populations occurring on the Swan, Apsley and St Pauls Rivers, and an outlying population occurring near Orford (Coates, 1991).

The species is known from 10 locations, with a total population of approximately 11 000 mature individuals. It has an extent of occurrence of 2300 km² (DPIWE data; TSS, 2006a) and an area of occupancy of approximately 0.1 km² (Schahinger [DPIW], pers. comm., 2008). Populations are separated by at least two kilometres (DPIWE data).

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 Applawn Conservation Area with approximately 10 mature individuals. The other seven populations all occur on private land, containing numbers of mature individuals ranging from 11 to approximately 500 (TSS, 2006a).

The species has benefited in recent years from recovery actions directed towards the EPBC listed ecological community, *Eucalyptus ovata*–*Callitris oblonga* Forest Community, with a number of stands proposed for protection by conservation covenants under the Tasmanian *Nature Conservation Act 2002*. In addition, on-ground weed works have improved the quality of its habitat in some areas (Zacharek, 2000; TSS, 2006a).

7. Relevant Biology/Ecology

The Small-leaf *Spyridium* flowers from November to April, with the flower bracts remaining on the plant for most of the year. Seed is produced after one season's flowering during February to April, develops over winter, but is not released until the following year. Seed development is greatest during October and November, with fruit maturing mostly in January. Most seed is released in February, although some seed is released as early as November, extending through to April (Coates, 1991). There are insufficient data to calculate the species' generation length, but is likely to be between 10 and 30 years (Wapstra [Consultant Botanist for DPIWE], pers. comm., 2006).

The Small-leaf *Spyridium* usually occurs in the zone between riparian vegetation, woodland or forest, and pasture, as a component of shrubby vegetation impacted by regular disturbances such as fire or flooding. It also occurs on rock plates on forested slopes, often restricted to crevices between plates of exposed bedrock, suggesting it is drought tolerant (Coates, 1991).

Small-leaf *Spyridium* populations located on St Pauls River are associated with the *Eucalyptus ovata*–*Callitris oblonga* Forest Community which is listed as vulnerable under the EPBC Act. The Small-leaf *Spyridium* is also associated with the following EPBC listed species in various locations: *Acacia axillaris* (Midlands Mimosa), *Callitris oblonga* subsp. *oblonga*, *Epacris apsleyensis* (Apsley Heath), *Epacris grandis* (Grand Heath), *Lasiopetalum micranthum* (Tasmanian Velvet-bush) and *Stenanthemum pimeleoides* (Spreading *Stenanthemum*).

8. Description of Threats

The main threats to the Small-leaf *Spyridium* are land clearance, inappropriate fire regimes, and degradation of habitat by weeds and grazing (TSS, 2006a).

Land clearance along the St Pauls, Swan and Apsley Rivers has reduced once continuous populations to scattered remnants (TSS, 2006a).

Woody weeds such as Gorse (*Ulex europaeus*) are a particular threat to populations on private land on the St Pauls and Swan Rivers (TSS, 2006a).

The Small-leaf Spyridium re-sprouts after fire. Observations suggest that too-frequent fires may impact on the species' ability to recover (Coates, 1991; Barker & Johnson, 1997; Coates et al., 1999).

The Small-leaf Spyridium can also re-sprout after grazing damage (Coates, 1991), however the level of grazing the species can tolerate is unknown. Grazing of habitat on the St Pauls and Swan Rivers is a potential threat to these populations (TSS, 2006a).

9. Public Consultation

The information used in this assessment was made available for public exhibition and comment for 40 business days. No comments were received.

10. How judged by the Committee in relation to the criteria of the EPBC Act and Regulations

The Committee judges that the species is **eligible** for listing as **endangered** under the EPBC Act. The assessment against the criteria is as follows:

Criterion 1: It has undergone, is suspected to have undergone or is likely to undergo in the immediate future a very severe, severe or substantial reduction in numbers

The Small-leaf Spyridium occurs in areas where land clearing for agricultural development has had a major impact on the species' habitat, particularly along the St Pauls, Swan and Apsley Rivers, where the habitat has been reduced to scattered remnants. Woody weeds such as Gorse (*Ulex europaeus*) are having a major impact on populations occurring on private land on the St Pauls and Swan Rivers. Inappropriate fire and grazing regimes are potential threats which may have an impact on the viability of the populations. There are insufficient data to calculate the species' generation length, but is likely to be between 10 and 30 years (Wapstra [Consultant Botanist to DPIWE], pers. comm., 2006).

Although the Small-leaf Spyridium has been extensively surveyed over recent years as part of various assessments, such as botanical assessments of national parks (Kirkpatrick et al., 1980), other proposed reserves (North et al., 1998), private properties suitable for conservation covenants (DPIWE, 1998), recovery programs (TSS, 2006a), other associated species (Barker & Johnson, 1997; Zacharek, 2000; TSS, 2006b) and general vegetation mapping (Harris & Kitchener, 2005), there are insufficient quantitative data available to judge that the species has undergone a reduction in numbers. However, because of the threats outlined above, the Committee judges that the species is suspected to have undergone a reduction in numbers.

Although the Committee judges that the species is suspected to have undergone a reduction in numbers, there are insufficient data available to judge whether the reduction has been very severe, severe, substantial, or not substantial. Therefore, the species has not been demonstrated to have met each of the required elements of Criterion 1, and is **not eligible** for listing in any category under this criterion.

Criterion 2: Its geographic distribution is precarious for the survival of the species and is very restricted, restricted or limited

The Small-leaf *Spyridium* population contains a total number of approximately 11 000 mature individuals occurring at only 10 locations, with an extent of occurrence of 2300 km² and an area of occupancy of 0.1 km².

The largest population, containing 83% of the total population and having 50% of the total area of occupancy, occurs largely in the Douglas-Apsley National Park on Blindburn Creek, with two other populations occurring in Three Thumbs State Reserve near Orford (200 mature plants), and Apslawn Conservation Area on the Apsley River (>10 mature plants).

The remaining seven populations occur on private properties along the St Pauls and Swan Rivers. These populations have been impacted by habitat clearance for agricultural development, and are still subject to limited habitat clearance, particularly the smaller stands on private properties without conservation covenants. They are also currently threatened by inappropriate grazing regimes, and woody weed invasion.

All populations, including those in reserves, are potentially threatened by inappropriate fire regimes. Due to the current and potential threats, it can be inferred that the species' habitat could undergo a continuing decline in area, extent and quality.

The species is known to re-sprout after fire and grazing damage. Although all populations are considered to be important to the survival of the species, it is unlikely that any threatening events would affect more than one population at any one time.

Although the largest population is afforded protection in a national park, and the species is included in both a multi-species and an ecological community recovery plan (see point 6 National Context above, and Conclusion below) the Committee judges that the geographic distribution is precarious for the survival of the species due to the current and potential threats impacting on the species. Given the largest population is reserved in a national park, and that recovery plan fire and weed management prescriptions have been implemented, the Committee judges that the species' geographic distribution is restricted.

The Committee considers that the species has a restricted geographic distribution, which is precarious for the survival of the species due to habitat clearance, inappropriate fire and grazing regimes, and the impact of woody weeds. Therefore, the species has been demonstrated to have met the relevant elements of Criterion 2 to make it **eligible** for listing as **endangered**.

Criterion 3: The estimated total number of mature individuals is limited to a particular degree; and either

(a) evidence suggests that the number will continue to decline at a particular rate; or

(b) the number is likely to continue to decline and its geographic distribution is precarious for its survival

The Small-leaf *Spyridium* has an estimated total number of approximately 11 000 mature individuals. The impact that land clearance has had on the distribution of potential habitat along the St Pauls, Swan and Apsley Rivers, along with the current threats of grazing and woody weed invasion and the potential threat of inappropriate fire regimes, suggest that the number of plants is likely to continue to decline.

Although the Committee judges that the number of plants is likely to continue to decline, and the species' geographic distribution is precarious for its survival due to current and potential threats, the Committee judges that the estimated total number of mature individuals is not limited to a particular degree.

Therefore, as the species has not been demonstrated to have met the required elements of Criterion 3, it is **not eligible** for listing in any category under this criterion.

Criterion 4: The estimated total number of mature individuals is extremely low, very low or low

The Small-leaf *Spyridium* has a total number of approximately 11 000 mature individuals. The Committee does not consider that the estimated total number of mature individuals of the species is extremely low, very low or low. Therefore, as the species has not been demonstrated to have met any required element of Criterion 4, it is **not eligible** for listing in any category under this criterion.

Criterion 5: Probability of extinction in the wild that is at least

- (a) **50% in the immediate future; or**
- (b) **20% in the near future; or**
- (c) **10% in the medium-term future**

There are insufficient data available to estimate a probability of extinction of the species in the wild over a relevant timeframe. Therefore, as the species has not been demonstrated to have met the required elements of Criterion 5, it is **not eligible** for listing in any category under this criterion.

11. CONCLUSION

Conservation Status

This advice follows assessment of information gathered through the Commonwealth's Species Information Partnership with Tasmania, which is aimed at systematically reviewing species that are inconsistently listed under the EPBC Act and relevant state legislation.

The Committee considers that the species has a restricted geographic distribution, occurring in 10 locations, and an inferred continuing decline in the area, extent and quality of habitat, which is precarious for the survival of the species due to habitat clearance, inappropriate fire and grazing regimes, and the impact of woody weeds. Therefore, the species has been demonstrated to have met sufficient elements of Criterion 2 to make it **eligible** for listing as **endangered**.

Recovery Plan

The species is included in a draft multi-species recovery plan *Greater Freycinet Region Threatened Species Recovery Plan 2005–2009* which is in preparation. It is also included in the *Eucalyptus ovata–Callitris oblonga* subsp. *oblonga* Forest Community Recovery Plan 2006–2010 as a threatened species associated with this ecological community.

12. Recommendations

- (i) The Committee recommends that the list referred to in section 178 of the EPBC Act be amended by **updating** the name of *Spyridium microphyllum* (**Small-leaf Spyridium**) in the **endangered** category to:

Spyridium lawrencei (**Small-leaf Spyridium**)

- (ii) The Committee recommends that *Spyridium lawrencei* (**Small-leaf Spyridium**) remains eligible for inclusion in the **endangered** category in the list referred to in section 178 of the EPBC Act.
- (iii) The Committee recommends that there be no change to the initial decision to have a recovery plan for the species, and that the recovery plan be a multi-species recovery plan.

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Chair
Threatened Species Scientific Committee

13. References cited in the advice

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