Image by H&A Wapstra

River mint

Mentha australis

TASMANIAN THREATENED FLORA LISTING STATEMENT

Scientific name: ***Mentha australis*** R.Br., *Prodr.* 505 (1810)
Common name: river mint (Wapstra *et al.* 2005)
Group: vascular plant, dicotyledon, family **Lamiaceae**

Status: *Threatened Species Protection Act 1995*: **endangered**
Environment Protection and Biodiversity Conservation Act 1999: **Not listed**

Distribution: Endemic: **Not endemic to Tasmania**
Tasmanian NRM Regions: **Cradle Coast, North & South (?)**

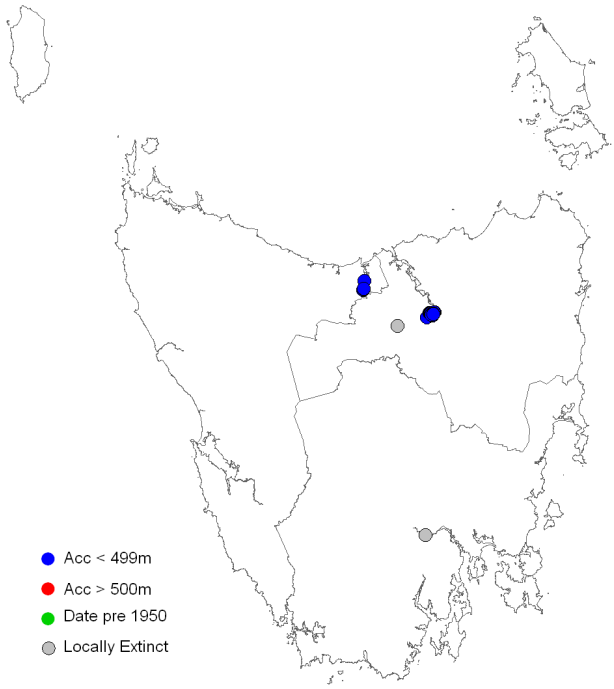

Figure 1. Distribution of *Mentha australis* in Tasmania

Plate 1. *Mentha australis*
(Image by H&A Wapstra)

IDENTIFICATION & ECOLOGY

Mentha australis is a sprawling to erect perennial herb in the Lamiaceae family (Plate 1). The species is known in Tasmania from small subpopulations along the Rubicon and South Esk Rivers in the State's north, where it grows in riparian habitats.

Recruitment is by suckering or from seed. Plants tend to creep between rocks or woody debris (Plates 2 & 3), with individual clumps containing many hundreds of stems and covering areas up to 50 m^2.

The species is most easily identified when in flower from January to March.

Description

Mentha australis is a soft, often sprawling, sometimes erect, strongly aromatic perennial herb. Its stems are branched and quadrangular in cross-section, have rough edges and are 30 to 60 cm long. Leaves are arranged opposite one another, are shortly stalked and narrowly ovate, 1.2 to 6 cm long by 0.8 to 2 cm wide, with entire or toothed margins and an acute apex. The small tubular flowers are arranged in clusters of 3 to 12 in the leaf axils towards the ends of the stems. The calyx is 3 to 5 mm long, 13-veined and the outer surface is densely covered with short spreading hairs. The corolla is 5 to 7 mm long, white or pink, with three sub-equal lobes and a fourth longer lobe with an emarginate apex. The anthers are exserted. The fruit consists of 4 small nutlets (description from Curtis 1967 and Conn 1999).

Confusing Species

The native *Mentha diemenica* (slender mint) has long hairs on the inner surface of the calyx lobes, whereas those of *Mentha australis* are hairless. The introduced *Mentha pulegium* (pennyroyal) has broader leaves than *Mentha australis*, a 10-veined calyx, and dense clusters of pink to mauve flowers.

DISTRIBUTION & HABITAT

Mentha australis is found in all Australian states except Western Australia (Conn 1999). In Tasmania, the species was described by Curtis (1967) as being 'local in marshes in northern and central districts'. It is known to be extant along the lower reaches of the South Esk River, Lake Trevallyn and the Rubicon River.

Mainland herbaria hold historical collections for *Mentha australis* from Westbury in Tasmania's central north and New Norfolk in the south, though there is a possibility that the latter was from cultivated plants.

The species was first recorded along the South Esk River in 1886 (at Cataract Gorge), but it was not collected again until 2009, with surveys in 2010 revealing it to be an occasional presence from just downstream of Trevallyn Dam to below First Basin.

The extant subpopulations of *Mentha australis* in Tasmania have a linear range of 51 km, an extent of occurrence of 270 km^2 and an area of occupancy of about 10 to 15 ha (Table 1).

In Tasmania, *Mentha australis* has been observed growing along the rocky (dolerite) margins of rivers and lakes (Plate 2). Associated species include the native *Gratiola peruviana* and *Carex appressa*, and the weeds *Alisma plantago-aquatica*, *Cyperus eragrostis*, *Lotus corniculatus, Mentha pulegium, Rorippa palustris, Persicaria maculata, Persicaria prostrata* and *Ranunculus repens*. Riparian native scrub species may include *Leptospermum lanigerum, Acacia melanoxylon, Acacia mucronata, Pomaderris apetala, Notelaea ligustrina, Callistemon pallidus* and *Beyeria viscosa.*

Plate 2. *Mentha australis* along the Rubicon River (Image by Richard Schahinger)

Table 1. Population summary for *Mentha australis* in Tasmania

	Subpopulation	Tenure	NRM region	1:25 000 mapsheet	Year last (first) seen	Area of occupancy (ha)	Number of clumps
1	Rubicon River	Crown land & private	Cradle Coast	West Frankford & Harford	2008 (2008)	1–2	40–50 *
2	Lake Trevallyn	Private	North	Prospect	2003 (2003)	< 0.01	2
3	South Esk River (Trevallyn Dam to First Basin)	Trevallyn Nature Recreation Area, Crown land & Launceston City Council	North	Launceston	2010 (1886)	5–10	35–40 *
4	Westbury	?	North	Westbury	1916 (1916)	Presumed extinct	–
5	New Norfolk	?	South	New Norfolk or Uxbridge	1840 (1840)	Presumed extinct	–

* Threatened Species Section surveys 2008–2010.

Co-occurring threatened species include *Alternanthera denticulata* (lesser joyweed), *Lycopus australis* (australian gypsywort), *Lythrum salicaria* (purple loosestrife), *Persicaria decipiens* (slender waterpepper) and *Persicaria subsessilis* (bristly waterpepper).

POPULATION ESTIMATE

There are three extant subpopulations of *Mentha australis* in Tasmania: Rubicon River, Lake Trevallyn, and the South Esk River downstream of Trevallyn Dam (Table 1).

The Rubicon River subpopulation is spread over an 8 km length of river, with two main centres of occurrence. The more upstream site supports 40 to 50 'clumps' over 1 km, while the downstream site consists of two clumps separated by about 200 m. The Lake Trevallyn subpopulation consists of two clumps about 50 m apart, and the South Esk River subpopulation consists of more than 30 discrete clumps over a 6 km stretch of river, from 200 m downstream of Trevallyn Dam to below First Basin; patch sizes range from 0.1 to 50 m^2, with an average of about 15 m^2.

Any estimates of mature plant numbers are problematic due to the species' suckering habit.

RESERVATION STATUS

Reserved within Trevallyn Nature Recreation Area.

Plants along the upper and lower reaches of the Rubicon River occur on Crown land that has been recommended for formal reservation, the former as a Conservation Area under the *Nature Conservation Act 2002*, the latter as a Public Reserve under the *Crown Lands Act 1976* (CLAC Project Team 2006a). Parts of the South Esk River subpopulation are also on Crown land that has been recommended to become a Conservation Area (CLAC Project Team 2006b).

CONSERVATION ASSESSMENT

Mentha australis was listed as presumed extinct on the schedules of the Tasmanian *Threatened Species Protection Act 1995* in 2004. It was downlisted to endangered in 2005 following its discovery at Lake Trevallyn.

The species qualifies for listing as endangered under the following criterion:

B. Extent of occurrence estimated to be less than 500 km^2 or area of occupancy less than 10 hectares, and

1. Known to exist at no more than five locations;
2. Continuing decline observed or projected in the area, extent and/or quality of habitat.

THREATS, LIMITING FACTORS & MANAGEMENT ISSUES

The habitat of *Mentha australis* has been impacted in the past through hydrological changes, agricultural development and woody weed invasion, with the loss of an unknown number of subpopulations and plants. Extant subpopulations are threatened by weed invasion unnatural flow regimes, and a stochastic risk of extinction for smaller occurrences.

Inundation and regulated flow regimes: One of the main subpopulations occurs along the South Esk River downstream of Trevallyn Dam, constructed in the 1950s. The impact of regulated flows on the species is yet to be quantified, though it is known to persist in good numbers (Plate 3). However, in most areas it is at risk from a range of weeds encouraged by the same flow regime, and its long-term survival remains problematic. Any changes to the current regulated flows have the potential to impact profoundly on the species (North Barker & Associates 2001).

Plate 3. *Mentha australis* growing among woody debris downstream of Trevallyn Dam (Image by Richard Schahinger)

Weed invasion: Woody and herbaceous weeds are ubiquitous in the riparian zone downstream of Trevallyn Dam, a consequence of a catchment that encompasses large tracts of agricultural land, a regulated flow regime and the nearby urban environment. Gorse (*Ulex europaeus*), willow (*Salix* sp.) and blackberry (*Rubus fruticosus*) are all prominent (North Barker & Associates 2001). The *Mentha australis* sites along the Rubicon River are largely free of woody weeds, though dense infestations do occur upstream. Any reduction in environmental flows, natural or regulated, is likely to encourage the spread of woody weeds into areas that currently support *Mentha australis*.

Herbaceous weeds are widespread at each of the known sites, with pennyroyal (*Mentha pulegium*) and redshank (*Persicaria maculata*) common at the Lake Trevallyn site, and birdsfoot-trefoil (*Lotus corniculatus*) and marsh yellowcress (*Rorippa palustris*) prominent along the Rubicon River. The suckering character of *Mentha australis* would appear to give the species a competitive edge in the short-term, though its survival in the long-term is less certain.

MANAGEMENT STRATEGY

What has been done?

Extension surveys were undertaken by DPIPWE's Threatened Species Section in the Port Sorell area during 2008 as part of a threatened flora project funded by the Cradle Coast NRM Region. This resulted in the discovery of the Rubicon River subpopulation. Surveys were also conducted along the lower reaches of the South Esk River between Trevallyn Dam to First Basin in March 2010, with the species located over a 6 km stretch of river.

Limited weed works have been undertaken along the lower reaches of the South Esk River, with willow being targeted in the area between Duck Reach and Second Basin (North Barker & Associates 2001; Parks & Wildlife Service 2008), and Launceston City Council have been active in the Cataract Gorge Reserve.

Seed has been collected from the West Tamar subpopulation for long-term storage as part of the Millennium Seedbank (SeedSafe) Conservation Project, a joint exercise between Kew Gardens, the Royal Tasmanian Botanical Gardens, the Tasmanian Herbarium and the Department of Primary Industries, Parks, Water and Environment.

Management Objectives

The main objectives for the recovery of *Mentha australis* are to minimise the probability of extinction of the wild subpopulations by ensuring habitat protection, and to secure all key subpopulations under effective management regimes within the next five years.

What is needed?

Recovery actions necessary to improve the conservation status of *Mentha australis* include:

- provision of information and extension support to relevant Natural Resource Management Committees, local councils, government agencies and the local community on the locality, significance and management of known *Mentha australis* subpopulations and areas of potential habitat;
- preparation and implementation of a weed management plan for Trevallyn Nature Recreation Area and Launceston City Council's Cataract Gorge Reserve to ensure that works along the South Esk River downstream of Trevallyn Dam are undertaken in a strategic manner;
- formal reservation of areas of Crown land supporting the Rubicon River and South Esk River subpopulations;
- extension surveys, focusing on the lower reaches of the South Esk and Meander Rivers in the Longford/Westbury area;
- liaise with Hydro Tasmania to ensure that any changes to the current flow regime along the South Esk River downstream of Trevallyn Dam are documented and their impact on the species monitored;
- establish permanent plots for the species at key sites and monitor at two-yearly intervals to determine trends and any new threats.

BIBLIOGRAPHY

CLAC Project Team (2006a). *Consultation Report and Recommended Allocations for the Municipality of Latrobe*. Crown Land Assessment and Classification Project, Department of Primary Industries and Water, Hobart.

CLAC Project Team (2006b). *Consultation Report and Recommended Allocations for the Municipality of Launceston*. Crown Land Assessment and Classification Project, Department of Primary Industries and Water, Hobart

Conn, B.J. (1999). *Lamiaceae*. In *Flora of Victoria, Volume 4* (Eds N.G. Walsh & T. Entwisle). Inkata Press, Melbourne.

Curtis, W.M. (1967). *The Student's Flora of Tasmania, Part 3*. Government Printer, Tasmania.

North Barker & Associates (2001). *Trevallyn State Reserve: Vegetation Management Guidelines*. A report for the Parks and Wildlife Service, Department of Primary Industries, Water and Environment, Tasmania

Parks & Wildlife Service (2008). *Trevallyn Nature Recreation Area Management Plan 2008*. Parks and Wildlife Service, Department of Environment, Parks, Heritage and the Arts, Hobart.

Wapstra, H., Wapstra, A., Wapstra, M. & Gilfedder, L. (2005). *The Little Book of Common Names for Tasmanian Plants*, Department of Primary Industries, Water & Environment, Hobart.

Prepared in 2008 under the provisions of the Tasmanian *Threatened Species Protection Act 1995*. Reviewed in April 2010.

Cite as: Threatened Species Section (2010) *Listing Statement for* Mentha australis *(river mint),* Department of Primary Industries, Parks, Water & Environment, Tasmania.

View:
www.dpipwe.tas.gov.au/threatenedspecieslists

Contact details: Threatened Species Section, Department of Primary Industries, Parks, Water & Environment, GPO Box 44 Hobart Tasmania Australia 7001. Phone (03) 6233 6556; fax (03) 6233 3477.

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