Image by H&A Wapstra

Alpine appleberry

Rhytidosporum inconspicuum

TASMANIAN THREATENED FLORA LISTING STATEMENT

Scientific name: ***Rhytidosporum inconspicuum*** L.Cayzer, Crisp & I.Telford, *Aust. Syst. Bot.* 12(5): 700 (1999)

Common name: alpine appleberry (Wapstra et al. 2005)

Group: vascular plant, dicotyledon, family **Pittosporaceae**

Status: *Threatened Species Protection Act* 1995: **endangered**

Environment Protection and Biodiversity Conservation Act 1999: **Not Listed**

Distribution: Endemic: **Not endemic to Tasmania**

Tasmanian NRM Region: **Cradle Coast, North & South**

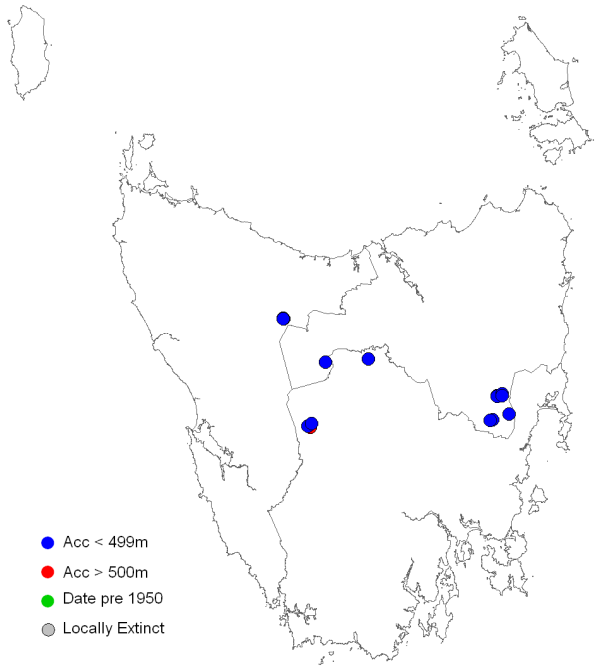

Figure 1. Distribution of *Rhytidosporum inconspicuum* in Tasmania

Plate 1. *Rhytidosporum inconspicuum*: habit and fruit (image by Eve Lazarus)

IDENTIFICATION & ECOLOGY

Rhytidosporum inconspicuum is a prostrate undershrub in the Pittosporaceae family. Within Tasmania it occurs in grassy heathland in montane and submontane areas. Little is known of the species' ecology, though bird dispersal of seed is likely given the presence of fleshy fruit. Recruitment is believed to be primarily from seed. Longevity and time to maturity is unknown, as is the resprouting response following fire or browsing.

The species is best identified during its flowering or fruiting phases, November–December and January–February, respectively.

Description

As the species name suggests, *Rhytidosporum inconspicuum* is often difficult to find. It is rhizomatous and produces aerial shoots that are usually less than 10 cm tall. The following description is adapted from Curtis and Morris (1975), Kirkpatrick (1997) and Cayzer et al. (1999).

Leaves: Less than 8 mm long and 2 mm wide and light green or slightly yellowish in colour. On new foliage (including seedlings) the leaves are obovate in shape and appear densely whorled and tridentate (3-toothed) at the tips, rarely with occasional T-shaped hairs. Older stems have alternately arranged leaves that are hairless and also obovate. The adult leaves have a very distinctive upturned hook at the tip (see Plate 1).

Flowers: Buds are mauve-tipped and develop into white, 5-petalled flowers. The flower stalks are angular, hairy and 4 to 7 mm long. The sepals are about 2 mm long, narrow-triangular in shape and pale green with a reddish tinge. The filaments are noticeably wider in the centre and the anthers are yellow-brown.

Fruit: Fleshy, apple-shaped, pale green (developing patches of pink over time), 3.5 to 4 mm long and 3 to 4 mm wide (Plate 1).

Seed: Wrinkled and about 2 mm long, kidney-shaped and brown flecked with gold.

Confusing Species

Rhytidosporum inconspicuum may be confused with juvenile *Gonocarpus tetragynus* (common raspwort). The latter species has teeth on the lateral parts of the leaf, whereas *Rhytidosporum inconspicuum* has teeth only near the leaf tip. The hooked leaf-tip of *Rhytidosporum inconspicuum* is a helpful character when searching for this species.

The mat-forming *Gaultheria tasmanica* (tasmanian waxberry) bears a superficial similarity to *Rhytidosporum inconspicuum,* though the former has leathery leaves with distinct venation, and its fruit is rounded (rather than flattened) and lacks a stalk.

DISTRIBUTION & HABITAT

Rhytidosporum inconspicuum occurs in Tasmania, Victoria (Eastern Alps) and New South Wales (Southern Tablelands). In Tasmania the species is known to occur in montane open grassy heath at Middlesex Plains, Lake Tyre, King William Plains and Breona. Several patches have also been recorded at lower altitudes in the Eastern Tiers between Lake Leake and The Quoin. Plants occur from 430 to 1,240 m above sea level.

The linear range of the species in Tasmania is 168 km, the extent of occurrence about 6,400 km^2 and the area of occupancy less than 1 ha.

The Middlesex Plains subpopulation occurs on wind-eroded skeletal soils over basalt. Associated species include *Poa* spp, daisies (*Helipterum*, *Cotula* and *Helichrysum* spp.) *Richea sprengelioides, Epacris gunnii, Gonocarpus tetragynus* and species of *Scleranthus*, *Viola* and *Gentianella.*

The King William Plains subpopulations occur on dolerite soils. Associated species include *Poa* spp., daisies (*Olearia* and *Ozothamnus* spp.), *Lomandra longifolia*, *Lepidosperma filiformis*, *Empodisma minus*, *Hakea epiglottis, Oxylobium ellipticum, Gonocarpus tetragynus*, *Epacris gunnii* and *Stylidium graminifolium*. Moss was common at both the Middlesex and King William Plains sites.

Herbarium records indicate that the species also grows in buttongrass moorland, though surveys in 2006 located plants only on the periphery of buttongrass, not amongst it.

RESERVATION STATUS

Rhytidosporum inconspicuum is reserved in the Tasmanian Wilderness World Heritage Area within the Walls of Jerusalem National Park and Cradle Mountain-Lake St Clair National Park, and also in Long Marsh Conservation Area.

POPULATION ESTIMATE

Rhytidosporum inconspicuum has been recorded in Tasmania from ten sites (Table 1). Estimates of plant numbers are available for only five of these, with a total of about 350 plants.

Sites supporting suitable habitat were surveyed opportunistically by DPIPWE personnel in 2006, with one new subpopulation recorded from the four sites searched. A 1999 record from grassy-heathland south of Doctors Creek Bridge near Breona could not be relocated — the area had been burnt sometime in the previous two years.

The paucity of past records may be attributed to the species' inconspicuous nature, and it is considered highly likely that a well-resourced survey effort will uncover more subpopulations in Tasmania.

CONSERVATION ASSESSMENT

Rhytidosporum inconspicuum was listed as endangered on the original schedules of the Tasmanian *Threatened Species Protection Act 1995*.

THREATS, LIMITING FACTORS & MANAGEMENT ISSUES

A sound understanding of the species' longevity, maturity and recruitment requirements is lacking, and as such it is possible that declines may occur through inappropriate management. Known threats to the species are described below.

Inappropriate disturbance regimes: As a small scrambling plant, *Rhytidosporum inconspicuum* is susceptible to 'crowding out' by other plants. Fire or physical disturbance, such as herbivore browsing, may be required to maintain openness.

The response of the species to fire is unknown. It may regenerate from seed within the soil, or may be destroyed by fire and require post-fire seed dispersal from outside the burnt area to recolonise a site.

Frequent fire may lead to decline if the interval between fires is too short to replenish the seed source, though the time to reproductive maturity is unknown. Alternatively, the species may become locally extinct in the absence of sufficient browsing or fire due to the death of plants from old age or being 'crowded out'. The consequence may be a lack of a seed source for recruitment or reduced viability over time of any soil-stored seed. Surveys in February 2006 failed to relocate the species from a site burnt less than two years previously (Breona), despite a known record from 1999.

Disturbance from forestry activities: There is potential for the inadvertent destruction of plants and habitat through road building or maintenance activities associated with logging operations.

Land clearance: Those subpopulations on private land remain at risk from inadvertent clearance and trampling or browsing by stock.

Stochastic risk: Due to the localised nature of its subpopulations the species faces a high risk from stochastic events. The four sites recorded in 2006 supported just 90 to 190 individuals over a total area of 260 m^2. Chance events such as severe fire, drought or flood may lead to declines or local extinctions.

MANAGEMENT STRATEGIES

What has been done?

Surveys of the Middlesex and King William Plains sites were conducted in February 2006 as part of a project funded by the World Heritage Area program, and a listing statement prepared.

Management Objectives

The main objectives for the recovery of *Rhytidosporum inconspicuum* are to minimise the probability of extinction of the wild subpopulations, gain an improved understanding of the species' recruitment requirements, and to secure all key subpopulations under effective management regimes within the next five years

Table 1. Population summary for *Rhytidosporum inconspicuum* in Tasmania

	Subpopulation	Tenure	NRM region	1:25 000 mapsheet	Year last (first) seen	Area of occupancy (ha)	Number of mature plants
1	Iris River (Middlesex Plains)	Private land	Cradle Coast	Lea	2006 (1982)	0.005– 0.01	120
2	Harbacks Road (King William Plains)	State Forest	South	Arrowsmith	2006 (2006)	0.001	20
3	Road off Lyell Highway (Navarre Plains)	State Forest	South	Arrowsmith	2006 (1986)	0.01	50
4	Lake Tyre	Walls of Jerusalem National Park	North	Pillans	1987 (1987)	–	–
5	South of Doctors Creek Bridge, Breona	Crown land	South	Breona	1999 (1999)	–	–
7	Teagarden Flats & Punches Marsh	Private land	North	Morriston	2006 (2006)	0.6	150
8	Ladies Mile Marsh	Private land	North	Leake	(2006) 2004	< 1 m^2	< 10
9	Daisymead Marsh	Private land	North	Leake	1990 (1990)	–	–
10	Long Marsh	Long Marsh Conservation Area	North	Colonels	1990 (1990)	–	–

What is needed?

- survey for new subpopulations in areas of suitable habitat and identify management issues;
- develop a management plan for King William Plains State Forest in conjunction with Forestry Tasmania to ensure that the species and its habitat is protected;
- determine parameters needed to improve management: longevity, time to maturity, recruitment strategy, germination and recruitment requirements, response to fire and grazing;
- organise *ex situ* holdings from the various subpopulations for the Royal Tasmanian Botanical Gardens and collect seed from these holdings for long-term storage as part of the Millennium Seedbank (SeedSafe) Project;
- monitor known subpopulations at two-yearly intervals to determine the level of recruitment and/or plant loss and to better inform management prescriptions;
- provide information and extension support to Natural Resource Management committees, local councils, government agencies and the local community on the locality, significance and management of known subpopulations and areas of potential habitat.

BIBLIOGRAPHY

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Kirkpatrick, J.B. (1997). *Alpine Tasmania: An Illustrated Guide to the Flora and Vegetation*. Oxford University Press, Melbourne.

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Prepared in 2006 under the provisions of the Tasmanian *Threatened Species Protection Act 1995*. Reviewed May 2010.

Cite as: Threatened Species Section (2010) *Listing statement for* Rhytidosporum inconspicuum *(alpine appleberry)*, Department of Primary Industries, Parks, Water & Environment, Tasmania.

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

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