THREATENED SPECIES LISTING STATEMENT

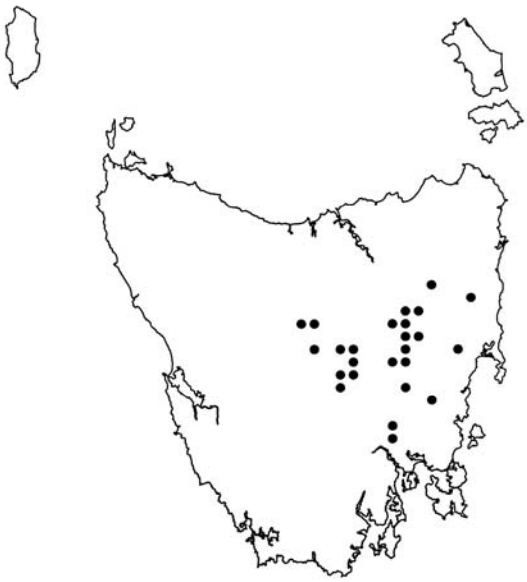
Curtis' colobanth *Colobanthus curtisiae*

J. West 1991

Status

Tasmanian *Threatened Species Protection Act 1995*
……..……..……..……..……..…….....…rare
Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*……...…….…...…....Vulnerable

Hans and Annie Wapstra



Description

Curtis' colobanth is a small perennial herb growing to 40 mm high. It requires bare ground for recruitment from seed and responds well to some disturbance such as grazing. It flowers from November to February and is largely self-pollinated.

The leaves of Curtis' colobanth are soft and narrow, and taper from the base to an apex ending with a fine hair and are 25 to 30 mm long and 1 to 2 mm wide. The leaves are crowded at the base that spreads to form circular tufts. The leaf blade has smooth margins. The flowers are solitary on the end of a 2.5 to 3 cm long stalk. Instead of petals, there are 5 green sepals, which are narrow-triangular, 4 to 4.5 mm long and 1 to 1.5 mm wide and end in a fine hair-like tip. Capsules are oval and seeds are red-brown and 0.5 mm long and 0.3 mm wide.

Colobanthus curtisiae belongs to the family Caryophyllaceae. It can be distinguished from the more widespread *Colobanthus apetalus* by its longer sepals and more prominent bumps on its seed coat. *Colobanthus affinis*, the other species of this genus in Tasmania, can be distinguished by its broadly oval sepals and leaves that do not taper to a fine hair. Curtis' colobanth was named in honour of Dr Winifred Curtis, a renowned botanist and author of the Students Flora of Tasmania.

Distribution and Habitat

Curtis' colobanth is endemic to Tasmania, extending from the Central Plateau to Ben Lomond in the north, to Fingal Tier in the east and Kempton in the south. It occupies about 14 ha in total.

Curtis' colobanth is a grassland to grassy woodland plant and can be found in areas subject to a wide variety of environmental conditions. It occurs on gentle slopes with elevations of between 160 m in lowland areas and 1,300 metres in alpine areas. Rainfall varies from 530 mm in the Midlands area to 1,400 mm on Ben Lomond. Curtis' colobanth is most commonly found on soils derived from sandstone as well as clay loams derived from dolerite and basalt. It can persist in remnant grasslands, which may be grazed by stock.

Important Locations

	Locality	1:25 000 mapsheet	Year last seen	Area (ha)	Number of plants
1	**Giblin Fells** Ben Lomond National Park	Stacks	1992	0.5	100
2 **3** **4**	**Fehres Marsh, Fingal Tier** **Bare Rock, Fingal Tier** **South of Mt Malcolm, Fingal Tier** State Forest	Fingal	1993 1993 1993	0.25 1 1	<50 100 100
5 **6**	**Epping Forest** -several sites **Vaucluse Resevoir, Conara** Private land	Cleveland	1991 1984	1	>1000
7	**Bag and Rake Gully, near Avoca** Private land	Hanleth	1995	0.5	1000
8 **9**	**Valleyfield Road, west of Conara** **Midlands Highway, south of Wanstead Hill** Private land	Conara	1997 1996	3	>1000 50
10 *ex*	**Maclains Plain, west of Campbell Town** –2 sites ***Campbell Town Cemetery*** Private land	Jacobs	2001 1985	0.5 Extinct	<20, 100s 0
11 **12**	**Pinnacles Creek – 2 populations** Private land	Campbell Town	1992 1992	0.5 0.25	100 <50
13	**Western shore of Near Lagoon, near Ross** Private land	Ellinthorp	1994	0.5	100
14 **15**	**Ferrars Tier, west of Lake Leake** **Bald Ridge** State Forest	Leake	1992 1991	1	>1000
16 **17**	**Midlands Highway, near White Lagoon** **Tunbridge Tier Road, near Floods Creek** Road reserve/private land	Tunbridge	1994 1997	 0.5	50 100
18 **19**	**Glen Morey Saltpan, east of Tunbridge** **Ransleys Creek, south of Bald Hill** Private land	Tunbridge	1998 1991	0.5 0.5	50 50
20	**Lightwood Creek, Andover** Private land	Oatlands	1992	0.25	<50
21	**Swanston Road, near Little Swanport River** Private land	Whitefoord	1992	0.5	100
22	**Lake Augusta, western shore, Central Plateau** Central Plateau Conservation Area, World Heritage Area	Ada	1981		
23	**Little Split Rock, Central Plateau** Central Plateau Conservation Area, World Heritage Area	Split Rock	1984		
24	**Mackenzies Tier, Central Plateau** Crown land	Montpeelyata	1984		
25	**Woods Lake Road, Central Plateau** Private land	Wihareja	1991	0.25	<50
26	**Hermitage Point, near Bothwell** Private land	Cluny	1992	0.5	100
27	**Lagoon of Islands, Central Highlands** Water Reserve (Hydro Tasmania)	Steppes	1996	1	>1000
28	**Lake Highway, Central Highlands**	Steppes	1958		
29	**West of Fourth Lagoon** State Forest	Hermitage	1994	0.5	100
30 **31** **32** **33**	**South west of Carrot Hill** **Wrigleys Marsh** **Scotchman Hill** **Northeast of Synnots Sugarloaf** Private land	Hermitage	1994 1992 1991 2001	 0.25 0.25	100 <50 15-20 >10
34	**Quoin Mountain, east of Kempton** Private land	Bains	1986		
ex	***Brighton***	Tea Tree	1877	Extinct	0

Threats, Limiting Factors and Management Issues

The present very limited distribution of Curtis' colobanth is almost certainly due to the loss of grassland and grassy woodland on arable soils to improved pasture and cropping. The species tolerates a wide range of environmental conditions, which suggests that the cause of its rarity is not the lack of suitable physical environment. The decline is potentially on-going as most populations are on private land where the potential exists for pasture improvement and cropping and consequent habitat loss. Reducing habitat loss is the most significant factor in arresting the decline.

Suitable remnant grassland and grassy woodland often persists in unlikely places. The only known site for Curtis' colobanth when it was discovered in 1985 was in a cemetery at Campbell Town, in the Midlands, but shortly afterwards the site was cleared and the population lost.

Monitoring of permanent plots has shown that Curtis' colobanth is able to survive and successfully regenerate in the presence of a relatively high level of stock grazing. Seed output is high and germination appears to be easily achieved provided gaps are available. Bare ground necessary for recruitment is provided by heavy grazing although in some locations this is achieved in bare patches associated with tree roots. Where areas supporting the species have been subject to a stock grazing regime, this regime should be maintained to ensure population persistence.

Invasion by exotic plant species is a potential problem; for example, gorse, *Ulex europaeus*, is capable of excluding native vegetation completely and is widespread in the lowland habitats of Curtis' colobanth.

Conservation Assessment

Population Estimate

There are records for over 30 populations of Curtis' colobanth. Five of the populations each have at least 1000 individuals, though populations are usually small, with the majority estimated to have less than 100 individuals. Plants are difficult to see and distinguish even when in flower as they look like a small grass or sedge, making the estimation of plant numbers difficult. While there can be year to year variation, the total number of mature individuals is estimated to be typically less than 10,000.

Reservation Status

Curtis' colobanth is poorly reserved, with only one relatively small population reserved in the Ben Lomond National Park.

Assessment Criteria

Curtis' colobanth meets the criteria for listing as rare on the Tasmanian *Threatened Species Protection Act 1995* because

- it occurs in localised populations
- it occupies less than 50 ha
- there are typically less than 10,000 mature individuals in total
- it is at risk

It qualifies as Vulnerable using the 1994 IUCN (World Conservation Union) Red List criteria.

Recovery Program

Objectives

- prevent the loss or degradation of known populations
- increase numbers through habitat management and survey

Existing Management

Curtis' colobanth and a number of other threatened grassland species are included in a Recovery Plan for Tasmanian native grasslands that is currently being implemented. A management plan has been prepared for the Ben Lomond National Park.

Actions Needed

- pursue management options with landowners/managers with respect to sustainable grazing and avoiding land uses that would be detrimental to the species
- monitor known populations for threats, declines and response to habitat management
- investigate appropriate grazing regimes
- prevent spread of gorse into populations
- establish a mechanism to ensure management intervention when required
- further survey

Information Needed

- determine whether there are any more populations in existence

Management Advice

For the land owner/land manager

- prevent damage to populations from excessive grazing and trampling, if necessary, by rationalising access

- maintain some grazing on previously grazed sites to provide gaps necessary for recruitment
- prevent gorse from invading populations
- consider some form of long-term protection, e.g. private nature reserve, management agreement, covenant, etc.

For everyone

- search for new populations when in flower from November to February, particularly in remnant grasslands or grassy woodlands
- help us to monitor known populations, particularly at flowering time

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: Louise Gilfedder, Vegetation Section, Department of Primary Industries, Water and Environment

Source Material

Bibliography

Barker, P. 1999. *Recovery Plan for Tasmanian Native Grasslands 2000-2002* (draft). Department of Primary Industries, Water and Environment, Hobart.

Gilfedder, L. and Kirkpatrick, J.B. 1996. The distribution, ecology and conservation needs of *Colobanthus curtisiae* West. *Papers and Proceedings of the Royal Society of Tasmania* 130:25-30.

Barker, P.C.J. 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.

West, J.G. 1991. *Colobanthus curtisiae* (Caryophyllaceae), a new species from Eastern Tasmania, Australia. In Banks M.R. et al. (Eds), 1991, *Aspects of Tasmanian Botany - A Tribute to Winifred Curtis.* Royal Society of Tasmania. Hobart 31:75-77.

Statement Prepared: August 2001

Prepared by: Cassandra Strain and Wendy Potts

Review Date: 2007 or as new information is received.

Cite as: Threatened Species Unit 2001. Listing Statement Curtis' colobanth *Colobanthus curtisiae*. Department of Primary Industries, Water and Environment, Tasmania.

View: http://www.dpiwe.tas.gov.au
& 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.