

THREATENED SPECIES LISTING STATEMENT



ORCHID

Arthur River greenhood
Pterostylis rubenachii D. L. Jones 1998

Status

Tasmanian *Threatened Species Protection Act 1995*

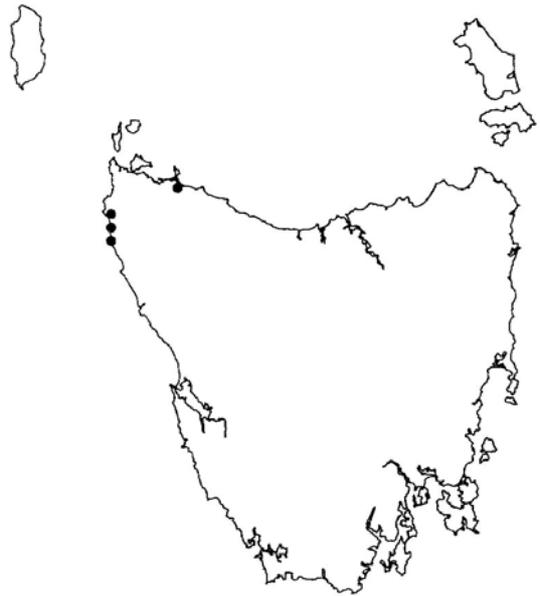
.....endangered

Commonwealth *Environment Protection and Biodiversity*

Conservation Act 1999..... Endangered



Hans & Annie Wapstra



Description

Arthur River greenhood belongs to a group of orchids commonly known as greenhoods because the dorsal sepal and petals are united to form a predominantly green, hood-like structure that dominates the flower. When triggered by touch, the labellum flips inwards towards the column, trapping any insect inside the flower, thereby aiding pollination as the insect struggles to escape. Greenhoods are deciduous terrestrials that have fleshy tubers, which are replaced annually. At some stage in their life cycle all greenhoods produce a rosette of leaves.

The rosette of the Arthur River greenhood encircles the base of the flower stem. The 4 to 6 rosette leaves are thin textured, dark green, crowded, narrowly elliptical and tapered to each end, 15 to 20 mm long and 6 to 10 mm wide. Arthur River greenhood flowers in October and November. In

flower, the plants are 30 to 80 mm tall. They have 2 to 7 densely crowded green flowers with darker green veins. The hood apex curves down shallowly at first and then abruptly near the apex. The two lateral sepals hang down and are fused to form a deep pouch below the labellum leaving a gap of about 1 mm at the tips. The labellum, which also hangs down, is thin textured, oval to oblong with a notched tip and has a more or less oblong appendage that curves back slightly with dark green, thickened edges and a central ridge raised above the margins. In all, the flowers are 8.5 to 9.5 mm long and 5 mm wide.

Pterostylis rubenachii is similar to *Pterostylis wapstreorum*, which is much more robust with thick-textured fleshy leaves. It is also similar to *Pterostylis mutica* but the presence of this species in Tasmania is yet to be confirmed.

A taxonomic review of the greenhoods has split *Pterostylis* into several new genera. This species has been renamed *Hymenochilus rubenachii*. Until this change becomes widely accepted, for management purposes the Threatened Species Unit has chosen to continue dealing with this species as part of the *Pterostylis* genus.

Distribution and Habitat

Arthur River greenhood is endemic to Tasmania and, so far, it is found only in the Arthur River area

in the northwest, and is probably confined to coastal lowland along the northern west coast. It extends over an area of only 8 square kilometres, occupying an area of about 3 hectares in total. It used to occur on the north west coast at Western Plains and at Cowrie Point but is now believed to be extinct in these sites. Arthur River greenhood is found on dry, sandy slopes of sparsely vegetated stabilised sand dunes, and also in permanently wet to moist scrubby and sedgy coastal heath converted to semi-improved pasture by annual slashing.

Important Locations

Locality	1:25,000 mapsheet	Year last seen	Area (ha)	Number
Prickly Wattle Lagoon Arthur-Pieman Conservation Area	Bluff	1999	0.02	7
Bullocky Hill to Bottle Flat – ~5 colonies over 2.5 x 0.5 km Arthur-Pieman Conservation Area	Sundown	1999	3	800
Temma Arthur-Pieman Conservation Area	Temma	1999	0.0001	2
Cowrie Point	Rocky Cape	~1980	Presumed extinct	
Western Plains	Smithton	1837	extinct	0

Threats, Limiting Factors and Management Issues

Arthur River greenhood is very localised and therefore exposed to stochastic risk. Its entire known distribution is associated with modified environments maintained by slashing and winter agistment. The plants are confined to the tops of some of the grassy dunes, and for some distance below on south-west facing slopes. The sites are heavily used for cattle grazing under agistment arrangements, and are occasionally slashed to keep them suitable for grazing. The plants were not found in light coastal scrub, which occupies much of the higher ground in the stabilised sand dunes or in less intensively grazed areas. The management regime may change in future with finalisation of the management plan for the Arthur-Pieman Conservation Area, in particular with respect to agistment. Changes to management are likely to impact adversely on the species, largely through invasion or expansion of bracken and coastal scrub, present on most of the higher ground of the inner sand dune system.

The spread of coast wattle (*Acacia sophorae*) is also of concern. The use of this species has been proposed to restore eroded areas or to suffocate marram grass on the outer dunes. Coast wattle has already been planted to restore an eroded track adjacent to one colony of Arthur River greenhood.

Although cattle agistment has benefited the species within its restricted modern range by creating and maintaining an artificial environment in which the species can obviously thrive, localised erosion triggered by cattle aggregations, or bikes and other vehicles used for mustering, may adversely affect some colonies.

Like other orchid species, Arthur River greenhood is likely to be extremely sensitive to artificial fertilisers, which may explain why the species has been lost from the north west coast. Few grassy dunes remain unaltered in this area, but Cowrie Point still has some grassy habitat left. No plants were found here in 1997, 1998 and 1999, and it must be assumed that they have fallen victim to recreational use, car parks etc. Habitats similar to those where the Arthur River greenhood is now found were once widespread at Woolnorth and surrounding areas, but have now disappeared due to pasture development. It may be assumed that the Arthur River population is a remnant of a once wider distribution.

Conservation Assessment

Population Estimate

There are 3 known populations of Arthur River greenhood in existence, although most plants occur in only one population with colonies occurring in a 2.5 by 0.5 km stretch south of Arthur River. In total,

the number of Arthur River greenhoods in existence has been estimated to be approximately 800.

Reservation Status

Arthur River greenhood is not represented in a secure reserve. It is restricted to the Arthur-Pieman Conservation Area.

Assessment Criteria

Arthur River greenhood meets the criteria for listing as endangered on the Tasmanian *Threatened Species Protection Act 1995* because

- it is severely restricted, extending over an area of less than 500 square kilometres and occupying less than 10 hectares
- it occurs in 5 or less populations
- there is a continuing decline

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

Recovery Program

Objectives

- prevent the loss or degradation of known populations
- increase the number of known populations through survey

Existing Management

The Arthur River greenhood was included in a project to manage and recover Tasmanian grassland orchids. Extensive survey work was carried out for this species in 1999. A draft management plan has been prepared for the Arthur-Pieman Conservation Area.

Actions Needed

- pursue management options with landowners/managers to protect populations of Arthur River greenhood against changes in land use that would be detrimental to the species
- keep habitat in the vicinity of populations open through grazing, slashing or burning
- monitor known populations for threats and declines
- establish a mechanism to ensure management intervention when required
- further survey

Information Needed

- determine appropriate grazing regimes for Arthur River greenhood
- determine appropriate fire regimes to keep the habitat of Arthur River greenhood open
- determine whether there are any more populations in existence

Management Advice

For the land owner/land manager

- do not overgraze from October to December to avoid trampling and to allow plants to set seed
- do not apply fertilisers and herbicides, or use off-road vehicles in the vicinity of populations of the Arthur River greenhood
- continue current practices, particularly annual slashing, if the orchids are thriving
- if you own land on which the Arthur River greenhood grows, consider some form of long-term protection, e.g. private nature reserve, management agreement, covenant, etc.

For everyone

- search for new populations in October and November when the plants are in flower
- 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: Hans Wapstra, Vegetation Section, Department of Primary Industries, Water and Environment

Source Material

References

Jones, D. Wapstra, H., Tonelli, P. and Harris, S. 1999. *The Orchids of Tasmania*. Melbourne University Press.

Jones, D.L. 1998. Contributions to Tasmanian Orchidology –7: A Taxonomic Review of *Pterostylis* R. Br. in Tasmania, *Australian Orchid Research* 3: 135-177.

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Prepared by: Wendy Potts and Hans Wapstra

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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.