

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

1. Scientific name (common name)

Pterostylis ziegelerei (Cape Portland Greenhood)

2. Description

The Cape Portland Greenhood is a terrestrial orchid with a basal rosette of dark-green, oval leaves and an underground tuber. The flowering stem, when present, is up to 20 cm tall and has from 2-24 small, green and white hooded flowers crowded at the end of the stem (Jones 1998). It flowers from September to December.

The Cape Portland Greenhood occurs in two distinct habitats in Tasmania (Threatened Species Section, Department of Primary Industries and Water (DPIW) 2006). In the Midlands it generally grows in *Themeda triandra* native grassland and grassy woodland on well-drained clay loams derived from basalt. In coastal areas it is found on the slopes of low stabilised sand dunes and in grassy dune swales. The altitude range is 5–300 m asl.

3. National Context

The Cape Portland Greenhood is endemic to Tasmania. It is currently known from 19 subpopulations that are widely located in the Midlands and near-coastal areas of the northwest, north, east and southeast of the State (Threatened Species Section, DPIW 2006).

The Cape Portland Greenhood was recognised in 1998 as a new species, closely related to the Swan Greenhood, *Pterostylis cycnocephala*, that is endemic to Tasmania (Jones 1998). The circumscription of the Cape Portland Greenhood has since been expanded to include all plants that were formerly identified as the Swan Greenhood in Tasmania whilst the Swan Greenhood is now considered to be a species that is confined to mainland Australia (CHAH 2006).

The Cape Portland Greenhood is listed as vulnerable under the Tasmanian *Threatened Species Protection Act 1995*, under the misapplied name, *Pterostylis cycnocephala*, rather than as *P. ziegelerei*.

4. How judged by the Committee in relation to the EPBC Act criteria

The Committee judges the species to be **eligible** for listing as **vulnerable** under the EPBC Act. The justification 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 total population of the Cape Portland Greenhood is estimated to be about 1500 to 1600 mature individuals (Threatened Species Section, Tasmanian Department of Primary Industries and Water (DPIW), unpublished data 2006).

It is inferred that a past decline in the number of plants has occurred. The native grassland, grassy woodland and near-coastal habitats in which the Cape Portland Greenhood occurs have undergone considerable reductions in extent since European settlement, largely due to past and ongoing land

clearing for agriculture or development (Threatened Species Section, DPIW, unpublished data 2006). Two subpopulations of the Cape Portland Greenhood have not been sighted since 1841 and are now presumed to be extinct (Threatened Species Section, DPIW, unpublished data 2006). Of the 19 subpopulations known from recent times, six have not been sighted since the 1970s/1980s. Three of these subpopulations were unable to be relocated during surveys in the late 1990s. The numbers of plants involved in the extinct or unrelocated subpopulations are not known.

The flowers of Cape Portland Greenhood occur for only a brief period each year and not at all during unfavourable seasons. The cryptic nature of the species can make it difficult to determine whether decline within a subpopulation is due to dormancy of plants or a reduction in numbers.

Despite botanical surveys in the Midlands and near-coastal regions, notably for orchids and orchid habitat, over the past 20 years, the surveys have not systematically quantified the changes in total numbers of Cape Portland Greenhood over time. Therefore, there are insufficient data available to assess the species against this criterion.

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

The extent of occurrence of the Cape Portland Greenhood is estimated to be about 43 000 km² and is not limited. However, its area of occupancy is likely to be very restricted, about 0.07-0.08 km² based on information from 11 of the 19 known subpopulations (Threatened Species Section, DPIW, unpublished data 2006). Therefore the Committee considers that the species has a limited geographic distribution.

The Cape Portland Greenhood is known from 19 subpopulations. However, six subpopulations have not been surveyed or detected in surveys since the 1970s or 1980s. Six subpopulations are protected in conservation reserves or by conservation covenant. The majority of known subpopulations occur on private land.

The Cape Portland Greenhood is subject to a number of ongoing threats, notably land clearing for agriculture or development, application of fertilisers and inappropriate fire or grazing/slashing regimes (Threatened Species Section, DPIW, unpublished data 2006). The latter threats may impact upon the species directly, e.g. the destruction of flowers and fruits by slashing. The threats may also impact on the species by altering the quality of the native grassland habitat it occupies. Little of the species' *Themeda triandra* native grassland habitat remains in good condition (Carter *et al.* 2003). Some coastal subpopulations also are threatened by disturbance due to their proximity to access tracks and camping sites.

The Committee consider that the Cape Portland Greenhood's geographic distribution is limited and precarious for its survival. Therefore, the species is **eligible** for listing as **vulnerable** under this criterion.

Criterion 3 – The estimated total number of mature individuals is limited to a particular degree and: (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 estimated total number of mature individuals is 1500 to 1600 plants (Threatened Species Section, DPIW, unpublished data 2006). However, this estimate is conservative since it is based on only 15 of the 19 known subpopulations, as determined at their last survey date, which range from 1984 to 2005. No quantitative information is available to indicate past or future trends in

population or subpopulation size. Therefore there are insufficient data available to assess the species against this criterion.

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

The estimated total number of mature individuals is not low. (Threatened Species Section, DPIW, unpublished data 2006). The estimate of about 1500 to 1600 mature plants is conservative as estimates are not available for all known subpopulations nor have all been recently surveyed. Therefore, the species is **not eligible** for listing under this criterion.

Criterion 5 – Probability of extinction in the wild

There are no data available to assess the species against this criterion.

5. CONCLUSION

The Cape Portland Greenhood is a terrestrial orchid with a basal rosette of dark-green, oval leaves that produces a flowering stem up to 20 cm tall with 2-24 small, green and white hooded flowers. In the Midlands it occurs in *Themeda triandra* native grassland and grassy woodland while, in coastal areas, it occurs on the slopes of low stabilised sand dunes and in grassy dune swales. The estimated total number of mature individuals is not low. However, the Committee considers that the species' geographic distribution is limited and precarious for its survival. The species is, therefore, **eligible** for listing as **vulnerable** under criterion 2.

6. Recommendation

The recommended change in conservation status for this species takes into account the revised circumscription of the species. The Committee recommends that the list referred to in section 178 of the EPBC Act be amended by **transferring** from the **endangered** category to the **vulnerable** category:

Pterostylis ziegelerei (Cape Portland Greenhood)

Associate Professor Robert J.S. Beeton

Chair

Threatened Species Scientific Committee

References cited in the advice

Carter, O, Murphy, A. and Cheal, D. (2003). *Natural Temperate Grassland*. Department of the Environment and Heritage, Canberra.

Council of Heads of Australasian Herbaria (CHAH) (2006). Australian Plant Census. www.chah.gov.au/apc.

Jones, D.L. (1998). Contributions to Tasmanian Orchidology—7: A taxonomic review of *Pterostylis* R.Br. in Tasmania, *Australian Orchid Research* 3: 135–177.

Threatened Species Section (2006). *Flora Recovery Plan: Tasmanian Threatened Orchids 2006-2010*. Department of Primary Industries, Water and Environment, Hobart.

Threatened Species Section (2006). Unpublished survey data for *Pterostylis ziegeleri* syn. *P. cycnocephala*. Held by the Tasmanian Department of Primary Industries and Water, Hobart.