

Flora & Fauna Guarantee Action Statement

#57

This Action Statement was first published in 1995 and remains current. This version has been prepared for web publication. It retains the original text of the action statement, although contact information, the distribution map and the illustration may have been updated.

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Gaping Leek-orchid *Prasophyllum correctum*



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Distribution in Victoria (DSE 2002)

Description and Distribution

Gaping Leek-orchid (*Prasophyllum correctum*) is a tuberous terrestrial herb, 15-40 cm tall (Jones 1994). Leek-orchids are dormant in summer; the leaf sprouts from the tuber after good autumn rains (Jones 1988). The Gaping Leek-orchid has a single narrow leaf, 12-30 cm long and 1-5 mm wide. The narrow, loose flower spike is 5-7 cm long, with 10-20 flowers in October and November. Each flower is 7-9 mm wide and predominantly yellowish green and reddish brown (Jones 1994). The common name refers to the widely opening flowers. This species was initially described as *P. chasmo-gamum* R. Bates & D. Jones 1991 (Jones 1991). However, it was subsequently found that the wrong specimen was designated as the type specimen, which was later identified as *P. pyriforme*. The species has now been described as *P. correctum* D.L. Jones sp. nov. (Jones 1994). The Gaping Leek-orchid is endemic to Victoria and was once found over much of

lowland Gippsland (Jones 1991, T. Entwisle, pers. comm.). However, it is now restricted to remnant native grassland on the railway line between Stratford and Bairnsdale. Only two populations have been sighted since 1970 (T. Entwisle pers. comm.; Turner (1993); Jones 1991, 1994).

Recent records of the orchid are from Kangaroo Grass (*Themeda triandra*) grasslands and Black Sheoke (*Allocasuarina littoralis*) grassy woodlands.

Before European settlement, most of the vegetation between Stratford and Bairnsdale was Forest Red Gum (*Eucalyptus tereticornis*) woodland with a ground layer that is assumed to have been dominated by Kangaroo Grass (LCC 1982).

The Gippsland Plains supported about 1200 km² of this grassy woodland vegetation, but relatively intact remnants with a ground layer dominated by Kangaroo Grass are now confined to less than 100 ha, including regularly burnt railway reserve, a few roadsides, and cemeteries (Lunt 1992)

Conservation Status

Current Status

Jones 1991 (after Briggs & Leigh 1988) Australia	Endangered in
N. Walsh (after Gullan <i>et al.</i> 1990) SAC (1992)	Vulnerable Threatened

The only known occurrences are two Category 1 Rare Plant Reserves under the State Transport Authority Railway Reserve Vegetation Management Plan, 'Declared to provide protection for rare and endangered species of flora whose survival would be in jeopardy if a rare plant reserve were not declared'.

Reasons for Conservation Status

The species is at serious risk of disappearing from the wild state within one or two decades if present land use and other causes continue. Destruction or degradation of the orchid's grassland habitat is likely to have led to previous local extinctions. The orchid now has only two confirmed localities. The total population is fewer than 75 plants (I. Lunt, unpubl. data).

Both sites are on a rail reserve and comprise two strips of native vegetation 20 m wide surrounded by cleared agricultural land. The sites include both grassland and grassy woodland communities and have a total area of about 20 ha. Although the species has survived past rail line management, current practices threaten Gaping Leek-orchid.

The SAC (1992) determined that Gaping Leek-orchid is:

- extremely rare in terms of abundance and distribution;
- in a demonstrable state of decline; and
- significantly prone to future threats which are likely to result in its extinction.

Major Conservation Objectives

The major conservation objectives are to:

- protect existing plants of Gaping Leek-orchid and encourage its natural regeneration;
- maintain the integrity of Gaping Leek-orchid habitat and ensure that natural ecological processes continue to operate;
- investigate the potential for propagation and, if feasible, successfully propagate the species for *ex-situ* conservation so three different growers each have at least 50 living plants, and there is a substantial stored seed bank;
- supplement the existing population by planting to increase the population to at least 250 plants;
- establish five new populations of 100 plants in the wild on secure public land in Gippsland by December 1997, and five populations of 250 plants by December 2002.

These actions should change the status of Gaping Leek-orchid from Endangered in Australia and Victoria, to Vulnerable in Australia and Victoria, by December 2003.

Management Issues

Ecological Issues Specific to the Taxon

Gaping Leek-orchid has only recently been recognised as a new species. There is little information about its biology or ecology. Fewer than 75 plants are known from the two sites. The species is restricted to Central Gippsland Plains Grassland, which has been listed as a threatened community on Schedule 2 of the *Flora and Fauna Guarantee Act* 1988. Remnants of this grassland occur along the rail line between Traralgon and Bairnsdale (via Maffra or via Sale). Most of these remnants have yet to be searched for Gaping Leek-orchid.

Gaping Leek-orchid has been propagated from seed at the Adelaide Herbarium (R. Bates, pers. comm.), but it is not known if it can be re-established successfully in its former habitat, or if established plants could replace themselves naturally. A recent attempt to propagate the species from seed at the Royal Botanic Gardens failed. There are very few plants available for seed collection, although each plant produces numerous seeds.

Some current rail line management practices threaten the species. Access tracks and fire breaks are regularly slashed, rotary-hoed or graded for fire prevention. Topsoil is disturbed by the slashers wherever the ground is uneven. Rotary hoeing or grading destroys the habitat of the orchid and provides sites for weed invasion.

The grassland habitat of the orchid is being invaded by trees and shrubs, including Forest Red Gum, Burgan (*Kunzea ericoides*), Black Sheoke (*Allocasuarina littoralis*), and the environmental weed Radiata Pine (*Pinus radiata*). These will eventually shade out the grassland habitat of Gaping Leek-orchid. Tree invasion must therefore be suppressed if the Kangaroo Grass grassland is to survive. Unfortunately, V/Line often uses a bulldozer to remove trees, followed by stacking and burning of saplings. This bares the soil and promotes weed invasion.

There is no ecological information on the response of Gaping Leek-orchid to burning. The only known sites of the orchid have been regularly burnt by the local Country Fire Authority or V/Line in spring and autumn (L. Hoyling, pers. comm.). Regular burning prevents Kangaroo Grass from dominating and crowding out other species (McDougall 1989) and is considered essential for the wellbeing of Gaping Leek-orchid (D.L. Jones, pers. comm.), although it may flower freely without the intervention of summer fires (Jones 1991). Spring burning destroys the above ground parts of plants after they have used much of their energy reserves to grow and produce flowers. With such low numbers of Gaping Leek-orchids, autumn burning is preferable.

The site was grazed once, for two weeks, in 1990, and has been grazed intermittently by sheep in the past (M. Sears, pers. comm.). Prolonged grazing of native grasslands selectively removes palatable herbs, introduces weed seeds and tramples the vegetation and soil (Lunt 1990). Grazing is incompatible with conservation of the orchid.

The known locations of Gaping Leek-orchid have relatively few exotic weeds. Sweet Vernal-grass (*Anthoxanthum odoratum*), Yorkshire Fog (*Holcus lanatus*), St John's Wort (*Hypericum perforatum*), Blackberry (*Rubus fruticosus* spp. agg.) and Radiata Pine (*Pinus radiata*) are the main problem species.

Both sites have a shire road on their northern boundaries. The road reserves support native trees and shrubs. These plants protect the grassland from some agricultural spray drift and dust from the road. Road maintenance and other works need to be managed to prevent damage to Gaping Leek-orchid habitat.

The rail-line site containing Gaping Leek-orchid is long and narrow, making it vulnerable to disturbance (Bennett 1990) and weed invasion. Native vegetation on the rail line and adjacent road side links the site to larger areas of native vegetation. The vegetation may provide a habitat corridor for maintaining ecological processes, including the movement of pollinators (Bennett 1990).

Several stretches of native vegetation on the rail reserve are leased by CNR and receive special attention, but other native vegetation on the line, and vegetation on the roadside, has no special protection. If current management continues, the narrow strips of native vegetation on the rail reserve will be further reduced to islands of native vegetation in an ocean of introduced pasture and weed species. Both sites have recently been fenced by CNR to protect the orchid and its habitat from accidental destruction.

Wider Conservation Issues

Most of the intact remnants of Central Gippsland Plains Grassland are in rail reserves. Some V/Line management practices currently threaten the conservation values of these remnants, and hence the current and potential habitat of the Gaping Leek-orchid. If the Traralgon-Bairnsdale line is closed, as has been proposed, management inputs from V/Line (burning, weed control, tree removal) are likely to decrease, and the habitat would consequently be further degraded. The vegetation would also be subjected to increased damage from grazing and from the dismantling of the line.

Rare or threatened plants at the current site and at potential re-establishment sites include: Purple Diuris (*Diuris punctata*), Diuris (possibly *D. cuneata*), Dwarf Milkwort (*Polygala japonica*) and Austral Moonwort (*Botrychium australe*). The first three plants would benefit from the works proposed to protect Gaping Leek-orchid. The effect upon Austral Moonwort is unknown.

Tree decline is an issue on the Gippsland Plains, and maintaining the native grassland habitat of the Gaping Leek-orchid requires removing regenerating trees and shrubs. However, the areas to be cleared are very small. The proposed actions will increase our knowledge of the genus. At least 15 other rare or threatened leek-orchid species are known from Victoria (Gullan *et al.* 1990, Jones 1991).

Social and Economic Issues

There are no major negative social or economic issues influencing the achievement of the conservation objectives. Local naturalists are keen to conserve the plant and its habitat and have been instrumental in its protection through nomination of the species for listing, application

for grants, monitoring, and contribution of volunteer labour. Neighbouring landholders support proposals to conserve the orchid. Continued liaison with the local community is required for the current site and all potential replanting sites. Avon Shire (now part of Wellington Shire) and CFA officers have supported works that reduce threats to the orchid.

The orchid is not spectacular and unlikely to be of commercial interest; however, because of its rarity, unscrupulous orchid collectors could threaten its survival in the wild. Collectors are aware of the site.

The State Transport Authority Railway Reserve Management Agreement has not succeeded in protecting the orchid or its habitat from damage. Responsibilities for fire protection and suppression, fence maintenance, weed control and tree removal need to be clarified, and prescriptions for these activities developed and implemented to conserve the orchid. The use of the land as a rail line should not be affected. V/Line, CFA, Wellington Shire and CNR staff, particularly those who undertake works, need to be made more aware of the conservation values of native grasslands and their management requirements.

Many rural people view native vegetation as a fire hazard and are suspicious of changes in management. Liaison will be required to ensure that these groups understand that the new fire regime addresses both fire protection and conservation objectives.

Unauthorised grazing occurred when the line was temporarily closed after floods in April 1990. Grazing of the line generally does not occur when trains are running.

The site is bounded by a public road to the north, and private property to the south. There is one rail line crossing within the 3.7 km length of the reserve. This crossing will be maintained. Fencing costs to the owners of adjacent properties will not be altered by protecting Gaping Leek-orchid.

Management Action

Previous Management Action

The sites were recognised in the Railway Reserve Vegetation Management Plan as a Category 2 Significant Native Community in 1988 and sign-posted in 1990. They were upgraded to Category 1 Rare Plant Reserve after Gaping Leek-orchid was noted in the reserve.

Both sites have been fenced adjacent to the rail line and across the ends of each reserve to protect known plants and potential habitat of the orchid.

The Bairnsdale and District Field Naturalists received \$3000 in grants from the 'Adopt A Plant' scheme and the Conservation and Environment Grants scheme in 1992 to contribute to fencing and signposting.

Neighbouring landholders, Wellington Shire and the Country Fire Authority have been advised of the significance of the site. Parts of the rail line were searched for Gaping Leek-orchids between November 1991 and 1994 by the Bairnsdale and District Field Naturalists Club, LaTrobe University and CNR. The Traralgon-Stratford rail line loop (used and disused lines) was rapidly surveyed in autumn 1992 to identify grassland and

grassy woodland sites for more intensive botanical survey. These sites are potential habitat for the Gaping Leek-orchid. Some potential replanting sites on rail lines have been signposted, and some are fenced.

The Adelaide Herbarium has propagated Gaping Leek-orchids from seed (R. Bates, pers. comm.). However, an attempt by the Royal Botanic Gardens to propagate plants from seed collected by the BDFNC had no success.

A draft management statement for the site has been prepared and circulated for comment. A draft Critical Habitat Determination is being prepared.

Part of the site was burnt in the autumns of 1993 and 1994 to begin the environmental burning program.

A pamphlet and poster describing the significance of the rail line vegetation between Traralgon and Bairnsdale have been developed and distributed through railway stations.

Intended Management Action

Management Prescriptions

- Develop detailed management prescriptions for the known site of Gaping Leek-orchid in conjunction with V/Line, and each replanting site.
- Implement the management prescriptions.

Survey and Monitoring

- Survey other grassland sites on railway reserves on the Gippsland Plains. Look for Gaping Leek-orchid and other significant species or communities. Provide additional protection to these sites as appropriate.
- Monitor all known populations each year at flowering time
- Search the known sites of Gaping Leek-orchid and proposed planting sites for other rare, threatened or fire-sensitive species so their management can be integrated with that of Gaping Leek-orchid.

Fencing and Signposting

- Upgrade signposting at the site using both large and small signs.
- Fence and signpost sites selected for re-establishment before planting with Gaping Leek-orchid.

Research

- Encourage research into the ecological requirements of the orchid, including appropriate fire regimes, pollinators, methods of enhancing recruitment, and previous distribution of the orchid and its habitat.
- Encourage research on propagation and replanting.

Propagation

- Liaise with the Adelaide Herbarium about their method and results of propagation.
- If propagation is successful, increase the existing population to 250 plants, and establish new populations of at least 100 plants at five of Munro, Marriage Lane, Hillside, Fulham, Fernbank, Lindenow South and Dawson rail reserve sites, Briagolong Cemetery, and other suitable grassland sites after negotiating with land managers. Continue propagation

and replanting until there are 250 plants at each of five sites.

- Monitor planted individuals each year at flowering time. Initial re-establishment is considered successful at a site if at least 100 flowering plants are counted for at least two consecutive years. Long-term re-establishment is considered successful at a site if populations are maintained at over 100 flowering plants, and plants are self propagating from seed.
- Ensure at least 100 living plants are maintained *ex situ* by the Royal Botanic Gardens Melbourne, Australian National Botanic Gardens Canberra, and competent orchid growers. Ensure a rotating seed bank is maintained at the Royal Botanic Gardens.

Liaison

- Support local field naturalists in activities that enhance conservation of Gaping Leek-orchid. Encourage the formation of a Friends group to help protect and manage the habitat of Gaping Leek-orchid.
- Ensure V/Line is aware of the conservation values of railway reserves, and that management is compatible with the orchid's conservation. Encourage V/Line to be involved in any Friends group.
- Develop a Flora and Fauna Guarantee Public Authority Management Agreement with V/Line to replace the State Transport Authority Vegetation Management Plan.
- Ensure that V/Line employees, at all levels, are aware of the location and management of significant railway reserves.
- Ensure that Wellington Shire and the CFA are involved in management, and that works proposed by these authorities that may affect Gaping Leek-orchid are approved by CNR.
- Continue liaison with neighbouring land holders.
- Liaise with Royal Botanic Gardens staff and orchid growers to ensure *ex situ* conservation of the Gaping Leek-orchid.
- Liaise with Briagolong Cemetery Trust about the possibility of planting Gaping Leek-orchids and management of the grassland.

Control of Introduced Plants

- Ensure works are carried out in a way that minimises soil disturbance and chances of weed invasion.
- Control introduced plants and eradicate them wherever possible using ecologically sensitive methods. High priority will be given to controlling blackberry and St John's Wort.
- Extra weed control, including contact poisoning, may be required to reduce weed invasion (particularly Paspalum) of the strips which were rotary hoed and rolled.

Tree Removal

- Working with V/Line, remove selected native saplings which have invaded the grassland (number to be determined).
- Liaise with Wellington Shire to ensure that they consult with CNR so management of roadside vegetation is

compatible with conservation of the native grassland community.

Grazing

- Exclude domestic grazing animals from known and potential sites of Gaping Leek-orchid.

Fire Management

- Burn each site every 2-3 years, preferably in autumn, to ensure that the Gaping Leek-orchid is not out competed by tree regeneration or Kangaroo Grass.
- Working with V/Line, rationalise firebreaks and access tracks and ensure that their maintenance does not affect the orchid's habitat.

Maintaining and Enhancing Vegetation Corridor

- Maintain native vegetation on the stretches of rail reserve which are not currently Category 1 or 2 rail reserves to maintain the natural corridors linking larger areas of native vegetation to current and potential sites for replanting with Gaping Leek-orchid.
- Investigate ways to protect railway reserve vegetation of the Traralgon-Bairnsdale rail line, now closed.
- Encourage landholders to plant or regenerate indigenous species adjacent to the rail line as a buffer between native grassland and introduced pasture, and to compensate for the loss of trees and shrubs cleared to maintain orchid habitat on the rail line.

Critical Habit

- When grassland sites have been surveyed, declare the known sites of Gaping Leek-orchid, and proposed replanting sites, as critical habitat for the species, including appropriate buffers and vegetation corridors.

Other Desirable Management Actions

- Investigate planting or preservation of vegetation corridors which link the railway line to other areas of public land supporting grassland or grassy woodland: Providence Ponds Flora and Fauna Reserve, Briagolong Red-gum Reserve and Stratford Highway Park.
- Develop further extension material for V/Line stations on the Bairnsdale-Traralgon line. The extension material will increase awareness of rail line vegetation amongst rail passengers and regional V/Line employees.
- Investigate past records of Gaping Leek-orchid and survey these sites to see if the species still occurs.

Legislative Powers Operating

Legislation

Flora and Fauna Guarantee Act 1988: requires all public authorities to comply in the protection of native flora and fauna of Victoria. Provides for declaration of critical habitat for listed species.

Country Fire Authority Act 1958: describes the responsibilities of authorities and individuals in fire prevention and suppression.

State Transport Authority Railway Reserve Vegetation Management Plan 1989: describes the responsibilities of V/Line and CNR in the management of rail-line vegetation.

Licence/Permit Conditions

A Flora and Fauna Guarantee permit for the collection of Gaping Leek-orchid seed or vegetative material will be given only for work which is in accordance with the conservation objectives.

V/Line will not grant permits to graze the known or potential habitat of Gaping Leek-orchid.

Consultation and Community Participation

Local field naturalists will continue to be supported in activities which enhance conservation of Gaping Leek-orchid. Information about the precise location must be restricted because of the associated risk of illegal collection or trampling. CNR will consult with V/Line, neighbouring land holders, CFA and Wellington Shire to promote conservation of the species through increased awareness and appreciation.

Implementation, Evaluation and Review

The Area Manager, Gippsland, is responsible for ensuring the coordinated implementation of this action statement. Management actions will be evaluated annually and this action statement will be reviewed in 1998, when the results of propagation efforts should be known.

Contacts

Management

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Further information

Further information can be obtained from Department of Sustainability and Environment Customer Service Centre on 136 186.

Flora and Fauna Guarantee Action Statements are available from the Department of Sustainability and Environment website: <http://www.dse.vic.gov.au>

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