

# THREATENED SPECIES SCIENTIFIC COMMITTEE

Established under the *Environment Protection and Biodiversity Conservation Act 1999*

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The Minister's delegate approved this Conservation Advice on 01/04/2016.

## Conservation Advice

### *Prasophyllum favonium*

western leek-orchid

#### Conservation Status

*Prasophyllum favonium* (western leek-orchid) is listed as Critically Endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act). The main factor that is the cause of the species being eligible for listing in the Critically Endangered category are its very low number of mature individuals (TSSC 2001).

*Prasophyllum favonium* (western leek-orchid) is listed as Endangered under the *Threatened Species Protection Act 1995* (Tasmania).

#### Description

The western leek-orchid belongs to a group of orchids commonly known as leek-orchids because the erect hollow leaf has some resemblance to that of a leek. *Prasophyllum* species are herbaceous perennial terrestrials with small, fleshy, round or oval tubers and a few fleshy, irregular roots. Most species are dormant over summer and autumn and begin growth in early winter. The single leaf is reddish at the base as opposed to green as in onion orchids (*Microtis* species). The flower spike emerges through the side of the leaf above the middle, with the portion of leaf above the point of emergence being free and often withered by the time the flowers open. The flower spike bears many flowers that are held upside-down and are often fragrant. The labellum (lower petal) often has prominent wavy or frilly margins (TSU 2000).

The leaf of western leek-orchid is pale-green to dark green with a reddish base, the free part 6–13 cm long. When in flower, the plants are 15–35 cm tall, with 5–15 flowers in a condensed spike 3–7 cm long. The ovary is green with dark ribs. The flowers are slightly fragrant, 11–13 mm long and 5–6 mm wide and brownish, with a dark median line on the petals, and a dark purple labellum. The lateral sepals are not joined. The petals are 5–6 mm long and 1.5 mm wide. The labellum is abruptly recurved at right angles near the middle and most of the upper surface and margins are covered with small elongate papillae (small projections). The labellum has wavy to twisted, curled or crumpled margins. The thickened fleshy, green callus on the labellum is broadly channelled and covered with small elongate papillae. It extends just beyond the bend on the labellum (Jones 1998; Jones et al. 1999).

The western leek-orchid is one of three species closely related to *Prasophyllum fitzgeraldii* that previously may have been identified in Tasmania as *Prasophyllum rogersii*. It is most similar to *Prasophyllum secutum* but can be distinguished from that species by its shorter flowering spike, larger flowers, and a dark purple labellum (TSU 2000).

#### Distribution

The western leek-orchid is endemic to Tasmania and in 2000 was known from a narrow 30 km area between West Point and Sandy Cape in the far north-west of the state. There are five known localities within the Arthur-Pieman Conservation Area: West Point, Sundown Creek, just north of Sardine Creek, near Conta Rocks and Rebecca Creek. Populations are very small with one or two colonies containing 3–5 plants each. The total number of mature individuals is estimated to be less than 40. Its area of occupancy is less than 2 km<sup>2</sup> (TSU 2000).

The western leek-orchid may be assumed to have had a more widespread distribution in the coastal heathlands of the northern West Coast of Tasmania, but much of the suitable habitat in the area has been converted to agricultural use. If it does occur in remnants of suitable habitat

north of Marrawah, there are a number of ongoing threats which may impact on the species' habitat (TSU 2000).

### Relevant Biology/Ecology

The western leek-orchid grows among shrubs in windswept dense low heathland in drained dark grey to black sandy peaty loam, at altitudes from 10–30 m above sea level (Jones 1998; Jones et al. 1999).

Flowering occurs in October and November. The labellum produces quantities of nectar on which a wide range of insects feed. Some of these insects, particularly native bees, wasps and beetles, are effective pollinators (TSU 2000). Reproduction is solely from seed (D.Jones 2001, pers. comm.). Although this species flowers without the intervention of fire, flowering is probably stimulated by summer fires (Jones 1998).

### Threats

Table 1 – Threats

Threat factor	Threat type	Threat status	Evidence base
Habitat loss, disturbance and modifications			
Land clearing	known	current	Remnants of suitable habitat at West Point north of Marrawah are threatened by land clearing and pasture development (TSU 2000).
Disturbance	potential	future	The western leek-orchid has a very small number of colonies and small number of plants in each. This makes the loss of a population from localised events such as animals digging tubers a real threat (TSU 2000).
Fire			
Fire frequency	potential	future	Infrequent fire regimes may pose a long-term threat but only if large areas are excluded from burns for periods over 20–30 years. The species flowers in the absence of fire e.g. on rocky outcrops, but it is thought to respond well to fire, especially in dense heathland (TSU 2000).  In 2000 DPAW observed that in West Point the habitat seemed to generally remain free of wildfires (TSU 2000). More recent evidence of fires in the area demonstrate that fire remains a possible stochastic event in this area, although it is unlikely to severely impact the rocky outcrops where this species is associated, especially as such outcrops are unlikely to become overgrown with shrubs to the exclusion of smaller plants (TSU 2000). In 2016 bushfires occurred in the West point area the impact of these fire on the western leek – orchid have yet to be determined.
Impacts of domestic species			
Trampling	potential	future	Cattle agistment poses a potential but small threat to the western leek-orchid within the Arthur-Pieman heathlands (TSU 2000).

## **Conservation Actions**

### **Conservation and Management priorities**

#### Habitat loss disturbance and modifications

- Prevent habitat disturbance. Control access routes by installing gates to suitably constrain vehicle and public access to known sites on public land to prevent accidental damage to plants.
- Pursue management options with landowners/managers to protect populations of western leek-orchid against possible changes in land use that would be detrimental to the species.
- Ensure land managers are aware of the species' occurrence and provide protection measures against key and potential threats.

#### Fire

- Maintain an appropriate burning regime to prevent heathlands from becoming too dense and to encourage flowering.
- Reduce biomass if habitat becomes overgrown, taking care to allow plants to seed before taking action.
- Implement an appropriate fire management regime for protecting key habitat that includes buffers to prevent frequent wildfire or managed fire from impacting the habitat, unless prescribed fire is being used following sound scientific evidence of the critical need for such a prescribed fire.
- Provide maps of known occurrences to local and state Rural Fire Services and seek inclusion of mitigation measures in bush fire risk management plan/s, risk register and/or operation maps.

#### Impacts of domestic species

- If livestock grazing occurs in the area, ensure land owners/managers use an appropriate management regime and density that does not detrimentally affect this species to allow regeneration from seedlings and manage total grazing pressure at important sites through exclusion fencing or other barriers.

#### Stakeholder Engagement

- Continue to liaise with land managers on management activities (Department of Parks and Wildlife, Tasmania).
- Prepare a management strategy with input from local experts.

### **Survey and Monitoring priorities**

- Undertake survey work when plants are in flower in October and November, in suitable habitat and potential habitat, especially recently burnt areas, to locate any additional occurrences to more precisely assess population size and distribution.
- Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.

### **Information and research priorities**

- Investigate options for linking, enhancing or establishing additional populations.

- Determine the optimum fire frequency for the western leek-orchid. Fire trials should only be undertaken as a last resort when all other means of regeneration of the species has been investigated and, in addition, all weed management and fire impacts including the timing of fire impacts are fully understood. Burning should only occur when plants are dormant.
- Assess the species' ecological requirements relevant to the persistence of the species for recruitment.
- Undertake seed germination and/or vegetative propagation trials to determine the requirements for successful establishment.

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