

**Approved Conservation Advice for  
*Philotheca freyciana* (Freycinet Waxflower)**

(s266B of the *Environment Protection and Biodiversity Conservation Act 1999*)

This Conservation Advice has been developed based on the best available information at the time this Conservation Advice was approved; this includes existing plans, records or management prescriptions for this species.

### **Description**

*Philotheca freyciana*, Family Rutaceae, also known as the Freycinet Waxflower, is a small woody shrub that grows to approximately one metre in height, has hairless leaves and stems, and prominent tuberculate glands on the branches. Flowers have been observed in autumn (April to May) and also in spring and early summer (September to December) (TSS, 2009).

The species can be readily identified by its distinctive leaves, which are sessile (attached directly to stem) and almost imbricate (intertwined) in appearance, broadly obovate (heart to egg shaped and joined by narrowest point to stem) and folded through to 90°, 9–13 mm long, 8–13 mm wide, with prominent tubercular glands on the lower surface, and margins tinged with red (TSS, 2009).

The Freycinet Waxflower is distinguished from *P. virgata*, that grows in close proximity to the Freycinet Waxflower, by its five-petalled flowers as oppose to the four-petalled flowers of *P. virgata*, which also has thinner and flatter leaves with an acute apex (TSS, 2009).

### **Conservation Status**

The Freycinet Waxflower is listed as **endangered**. This species is eligible for listing as endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) as it has a very low number of mature individuals and occurs in a region where the soil pathogen *Phytophthora cinnamomi* is known to occur (TSSC, 2006). The species is also listed as endangered under the *Threatened Species Protection Act 1995* (Tasmania).

### **Distribution and Habitat**

The Freycinet Waxflower is known only from the Freycinet Peninsula on the central east coast of Tasmania. The Freycinet Waxflower has a scattered occurrence through the massive granite monolith known as The Hazards, within the Freycinet National Park, occurring from just above sea level to the higher elevations (10–440 m). About 100 plants have been recorded to date, with a concentration of 50–60 plants over a 20 by 30 m area near Mt Mayson in the western Hazards. A solitary plant is also known from near Cape Tourville, several kilometres to the northeast of The Hazards (TSS, 2009).

The linear extent of the Freycinet Waxflower is 7.5 km, with an extent of occurrence of about 7 km<sup>2</sup>, and an area of occupancy of less than 0.2 ha (TSS, 2009).

The Freycinet Waxflower occurs exclusively on Devonian granite, growing either in crevices or shallow soils in the runnels within the massive granites. The surrounding vegetation is generally a dry open scrub dominated by *Kunzea ambigua*, with *Leptospermum grandiflorum*, *Calytrix tetragona*, *Epacris barbata*, *Allocasuarina monilifera*, *Dillwynia glaberrima*, *Monotoca submutica* and *Hakea megadenia*, while mallee-form eucalypts may also be present (TSS, 2009).

This species occurs within the Tasmanian South East Bioregion and the South Tasmanian Natural Resource Management Region.

The distribution of this species is not known to overlap with any EPBC Act-listed threatened ecological community.

### **Threats**

The main identified threats to the Freycinet Waxflower are inappropriate fire regimes, where too frequent burning poses a threat to the long-term survival of individuals; risk of extinction due to the small population size; and illegal collection by tourists and/or native plant enthusiasts (TSS, 2009).

Scattered infestations of *Phytophthora cinnamomi* occur throughout the species' habitat, with mortality observed in species such as the EPBC-listed shrub *Epacris barbata* (Schahinger et al., 2003). Although at the time of listing *P. cinnamomi* was thought to be a threat to this species, laboratory trials conducted in 2007–2008 demonstrated that *Philothea freyciana* exhibits resistance to the disease, whilst still acting as a host for the pathogen (Rudman et al. 2008). Although the Freycinet Waxflower may still be indirectly affected by *P. cinnamomi* where die back of coexisting species that are susceptible to the disease results in habitat modification.

### **Research Priorities**

Research priorities that would inform future regional and local priority actions include:

- Design and implement a monitoring program or, if appropriate, support and enhance existing programs.
- Undertake survey work in suitable habitat and potential habitat to locate any additional populations/occurrences/remnants.
- Investigate the potential and efficacy of DNA-based or other approaches for the identification of individual plants and/or populations to provide a means for detecting and prosecuting illegal collection from the wild (see for example Palsboll et al., 2006).

### **Regional and local Priority Actions**

The following priority recovery and threat abatement actions can be done to support the recovery of the Freycinet Waxflower.

#### Habitat Loss, Disturbance and Modification

- Monitor known populations to identify key threats.
- Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.
- Ensure there is no disturbance in areas where the Freycinet Waxflower occurs, excluding necessary actions to manage the conservation of the species/ecological community.
- Control access routes to suitably constrain public access to known sites on public land.
- Undertake survey work in suitable habitat and potential habitat to locate any additional populations/occurrences/remnants.

#### Fire

- Implement the *Freycinet Reserves Fire Management Plan* for the habitat of the Freycinet Waxflower.
- Identify the appropriate intensity and interval of fire to promote seed germination and regeneration of the species.
- Where appropriate, provide maps of known occurrences to local and state Rural Fire Services and seek inclusion of mitigative measures in bush fire risk management plan(s), risk register and/or operation maps.

### Conservation Information

- Raise awareness of the Freycinet Waxflower within the local community, tourist information centres in the surrounding area, and within the nursery industry promote protection from illegal collection.

### Diseases, Fungi and Parasites

- If required, develop and implement suitable hygiene protocols to protect known sites from outbreaks of dieback caused by *Phytophthora cinnamomi*.

### Enable Recovery of Additional Sites and/or Populations

- Undertake appropriate seed collection and storage.
- Investigate options for enhancing or establishing additional populations.
- Implement national translocation protocols (Vallee et al., 2004) if establishing additional populations is considered necessary and feasible.

This list does not necessarily encompass all actions that may be of benefit to the Freycinet Waxflower, but highlights those that are considered to be of highest priority at the time of preparing the Conservation Advice.

### **Existing Plans/Management Prescriptions that are Relevant to the Species**

- Parks and Wildlife Service (2002). Freycinet Reserves Fire Management Plan. Department of Primary Industries, Water and Environment, Hobart.
- Threatened Species Section (2008). Draft Greater Freycinet Region Threatened Species Recovery Plan 2008–2012. Department of Primary Industries and Water, Hobart.
- Conservation of Tasmanian Plant Species & Communities Threatened by *Phytophthora cinnamomi* - Strategic Regional Plan for Tasmania (Schahinger et al., 2003).

These prescriptions were current at the time of publishing; please refer to the relevant agency's website for any updated versions.

### **Information Sources:**

Palsboll PJ, Berube M, Skaug HJ and Raymakers C (2006). DNA registers of legally obtained wildlife and derived products as means to identify illegal takes. *Conservation Biology* 20: 1284–1293.

Parks and Wildlife Service (2002). Freycinet Reserves Fire Management Plan. Department of Primary Industries, Water and Environment, Hobart.

Rudman T, Iłowski M and Schahinger R (2008). The susceptibility to *Phytophthora cinnamomi* of the threatened species *Boronia gunnii*, *Boronia hemichiton*, *Boronia hippopala* and *Philothea freyciana*. Nature Conservation Report 08/05, Biodiversity Conservation Branch, Department of Primary Industries and Water, Hobart. Available on the Internet at: [http://www.dpiw.tas.gov.au/inter.nsf/Attachments/LJEM-7HQ84D/\\$FILE/Section1\\_P.cinnamomi\\_Boronia.pdf](http://www.dpiw.tas.gov.au/inter.nsf/Attachments/LJEM-7HQ84D/$FILE/Section1_P.cinnamomi_Boronia.pdf)

Schahinger R, Rudman T and Wardlaw T (2003). Conservation of Tasmanian Plant Species & Communities threatened by *Phytophthora cinnamomi*. Strategic Regional Plan for Tasmania. *Technical Report 03/03*. Hobart, Tasmania: Nature Conservation Branch, Department of Primary Industries, Water and Environment.

Threatened Species Scientific Committee (TSSC) (2006). Commonwealth Listing advice for *Philothea freyciana* (Freycinet Waxflower). Available on the Internet at: <http://www.environment.gov.au/biodiversity/threatened/species/pubs/68227-listing-advice.pdf>

Threatened Species Section (2008). Draft Greater Freycinet Region Threatened Species Recovery Plan 2008–2012. Department of Primary Industries and Water, Hobart.

Threatened Species Section (TSS) (2009). Listing Statement for *Philotheca freyciana* (Freycinet waxflower). Department of Primary Industries and Water, Tasmania. Available on the Internet at:

<http://www.dpiw.tas.gov.au/threatenedspecieslists>

Vallee L, Hogbin T, Monks L, Makinson B, Matthes M and Rossetto M (2004). Guidelines for the Translocation of Threatened Plants in Australia - Second Edition. Australian Network for Plant Conservation, Canberra.