

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

**Approved Conservation Advice for**  
***Zieria verrucosa***

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**

*Zieria verrucosa*, Family Rutaceae, is a many branched, conspicuously hairy shrub, to 1.5 m tall. Leaves are opposite, with three leaflets. Leaflets are densely glandular, tuberculate and often strongly aromatic, 8–50 mm long and 1–5 mm wide, dark green with scattered hairs on the upper surface and whitish, velvety, hairy on the lower surface. Leaflet margins are tuberculate and curved or curled towards the lower surface. Inflorescences are in leaf axils and shorter than the subtending leaves, with up to 60 flowers. Flowers are creamy white to pink and 4–6 mm in diameter. Fruit are hairless and gland-dotted (Armstrong, 2002).

**Conservation Status**

*Zieria verrucosa* is listed as **vulnerable**. This species is eligible for listing as vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) as, prior to the commencement of the EPBC Act, it was listed as vulnerable under Schedule 1 of the *Endangered Species Protection Act 1992* (Cwlth). *Zieria verrucosa* is also listed as vulnerable under the *Nature Conservation Act 1992* (Queensland).

**Distribution and Habitat**

*Zieria verrucosa* is endemic to Queensland and restricted to a small area in the Burnett district near Mundubbera. Herbarium specimens have been collected from about 19 locations over a range of 19 000 km<sup>2</sup> (CPBR, 2008). It is known to occur in semi-evergreen vine thicket on red soils and also in Ironbark (*Eucalyptus sideroxylon*) woodland on red clay soil (Queensland Herbarium, 2008). Most original vegetation on these soil types in the region has been cleared for agriculture or grazing. *Zieria verrucosa* is not represented in any conservation reserves and most of the occurrences are confined to roadsides or private land in non-remnant vegetation (as defined under the *Vegetation Management Act 1999* (Queensland)) and are therefore not protected (Duretto & Forster, 2007; Queensland Herbarium, 2008). No population estimate is available. This species occurs within the Burnett Mary (Queensland) Natural Resource Management Region.

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

**Threats**

The main identified threats to *Zieria verrucosa* are continuing land clearing for agriculture and habitat degradation by cattle grazing (Duretto & Forster, 2007).

The main potential threats to the species include frequent hot fires, which would deplete the soil seed bank, and competition from introduced pasture grasses such as Green Panic (*Megathyrsus maximus* var. *pubiglumis*) and to a lesser extent Buffel Grass (*Pennisetum ciliare*) (Thomas, 2008, pers. comm.). These weeds threaten *Z. verrucosa* by direct competition and by increasing the fuel load and altering fire regimes. Most occurrences are confined to roadsides and are therefore potentially impacted from road widening and maintenance activities.

### **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.
- More precisely assess population size, distribution, ecological requirements and the relative impacts of threatening processes.
- Investigate optimal fire interval to ensure maintenance of healthy populations.
- Undertake survey work in suitable habitat and potential habitat to locate any additional populations/occurrences/remnants.

### **Regional and Local Priority Actions**

The following priority recovery and threat abatement actions can be done to support the recovery of *Z. verrucosa*.

#### **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 chemicals and other mechanisms used to eradicate weeds do not have a significant adverse impact on the *Z. verrucosa*.
- Ensure road widening and maintenance activities and development activities involving substrate or vegetation disturbance in areas where the *Z. verrucosa* occurs do not adversely impact on known populations.
- Minimise adverse impacts from land use at known sites.
- Investigate formal conservation arrangements, management agreements and covenants on private land, and for crown and private land investigate inclusion in reserve tenure if possible.

#### **Invasive Weeds**

- Develop and implement a management plan for the control of Green Panic and Buffel Grass in the region.
- Identify and remove weeds in the local area, which could become a threat to *Z. verrucosa*, using appropriate methods.

#### **Trampling, Browsing or Grazing**

- Develop and implement a stock management plan for roadside verges and travelling stock routes.
- Manage known sites to ensure appropriate cattle grazing regimes occur to allow recruitment from seedlings.
- Prevent grazing pressure at known sites through exclusion fencing or other barriers.

#### **Fire**

- Develop and implement a suitable fire management strategy for *Z. verrucosa*.
- Provide maps of known occurrences to local and state Rural Fire Services and seek inclusion of mitigative measures in bush fire risk management plans, risk register and/or operation maps.

#### **Conservation Information**

- Raise awareness of *Z. verrucosa* within the local community.

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

- Undertake appropriate seed collection and storage.
- Investigate options for linking, enhancing or establishing additional populations.

This Conservation Advice was approved by the Minister / Delegate of the Minister on: 1/10/2008

- 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 *Z. verrucosa*, 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**

- Burnett Mary Region 'Back on Track' Biodiversity Action Plan (EPA, 2008).

This prescription was current at the time of publishing; please refer to the relevant agency's website for any updated versions.

### **Information Sources:**

Armstrong, JA 2002, 'Zieria (Rutaceae): a systematic and evolutionary study', *Australian Systematic Botany*, vol. 15, no. 3, pp. 277–463.

Centre for Plant Biodiversity Research (CPBR) 2008, *Australia's Virtual Herbarium*, viewed 16 May 2008, <<http://www.cpbr.gov.au/cgi-bin/avh.cgi>>.

Duretto, MF & Forster, PI 2007, 'A taxonomic revision of the genus *Zieria* Sm. (Rutaceae) in Queensland', *Austrobaileya*, vol. 7, no. 3 pp. 473–544.

Environmental Protection Agency (EPA) 2008, *Burnett Mary Region 'Back on Track' Biodiversity Action Plan*, Environmental Protection Agency, Queensland Government.

Queensland Herbarium 2008, specimen label information, viewed 30 April 2008.

Thomas, M (Queensland Herbarium EPA). Personal communication. 8 May 2008.

Vallee, L, Hogbin, T, Monks, L, Makinson, B, Matthes, M & Rossetto, M 2004, *Guidelines for the Translocation of Threatened Plants in Australia* (2<sup>nd</sup> ed.), Australian Network for Plant Conservation, Canberra.