

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

Approved Conservation Advice for
***Brachyscias verecundus* (Ironstone Brachyscias)**

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

Brachyscias verecundus, Family Apiaceae, also known as Ironstone Brachyscias, is a glabrous annual herb, 12–22 mm high, that appears in November. The species displays white flowers in early December and the herb has no growth above ground in January (TSSC, 2006b). The inner bases of compound inflorescence bracts are white. The petals are free, ovate, inflexed and 0.7 mm long and 0.5 mm wide. Sepals are absent and flowers are pedicellate, minute and mostly male (Luu & English, 2004).

Conservation Status

Ironstone Brachyscias is listed as **critically endangered**. This species is eligible for listing as critically endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) as, in 2006 the Minister considered the Threatened Species Scientific Committee's (TSSC) advice under section 189 of the EPBC Act and amended the list under section 184 to include Ironstone Brachyscias. The TSSC determined that this species met criterion 2, 3 & 4 of their eligibility criteria (TSSC, 2006b). The species is also listed as rare under Schedule 1 of the *Wildlife Conservation (Rare Flora) Notice 2008* (Western Australia).

Distribution and Habitat

Ironstone Brachyscias is endemic to Western Australia, currently restricted to two populations east of Busselton. The populations are adjacent, one occurring on a rail reserve and the other on private property. Another population in Shannon National Park has not been located since 1986 (TSSC, 2006b). Surveys between 2000 and 2002 recorded 30–60 individuals; however, a survey in 2003 found no individuals (CALM, 2005). Lack of disturbance affects germination, and annual population fluctuations may suggest seed dormancy rather than extinction (TSSC, 2006b). Of the known populations, total area of occupancy is less than 0.42 km² (CALM, 2005).

Ironstone Brachyscias is endemic to winter-wet clay over ironstone, in open to tall shrubland (Luu & English, 2004). Common species in the Busselton area include *Kunzea rostrata*, *Pericalymma ellipticum*, *Acacia stenoptera*, *Hakea varia*, *Hemiandra pungens*, and *Viminaria juncea* (Gibson et al., 1994). This species occurs within the South West (Western Australia) Natural Resource Management Region.

The distribution of this species overlaps with the “Shrublands on southern Swan Coastal Plain ironstones” EPBC Act-listed threatened ecological community.

Threats

The main identified threats to Ironstone Brachyscias are lack of disturbance to stimulate germination; inappropriate fire regimes; firebreak maintenance; hydrological change; weed invasion; and rabbits (*Oryctolagus cuniculus*) (TSSC, 2006a). Lack of fire limits germination of the species and regular fire during the growing season would rapidly deplete the soil seedbank (Luu & English, 2004). Grading, chemical spraying and mowing of roadside vegetation associated with firebreak maintenance threaten the species and may encourage weed

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

invasion (Luu & English, 2004). Clearing in the Busselton area has led to increased runoff and groundwater recharge that may lead to water logging of Ironstone Brachyscias habitat (Luu & English, 2004).

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.

Regional and Local Priority Actions

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

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.
- Identify populations of high conservation priority.
- Ensure firebreak maintenance activities in areas where Ironstone Brachyscias occurs do not adversely impact on known populations.
- Manage any changes to hydrology that may result in changes to the water table levels and/or increased run-off, salinity, or pollution.
- Control access routes to suitably constrain public access to known sites on public land.
- Suitably control and manage access on private land.
- Minimise adverse impacts from land use at known sites.
- Ensure chemicals or other mechanisms used to eradicate weeds do not have a significant adverse impact on Ironstone Brachyscias.
- 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

- Identify and remove weeds in the local area, which could become a threat to Ironstone Brachyscias, using appropriate methods.

Trampling, Browsing or Grazing

- Manage known sites to ensure appropriate cattle grazing regimes occur outside the growing season, i.e. when plants are not fertile.
- Implement management plan for the control and eradication of rabbits in the local region (EA, 1999).

Fire

- Develop and implement a suitable fire management strategy for Ironstone Brachyscias.
- Identify appropriate intensity and interval of fire to promote seed germination.
- 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 Ironstone Brachyscias within the local community.

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

Enable Recovery of Additional Sites and/or Populations

- Undertake appropriate seed collection and storage.
- Investigate options for linking, 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 Ironstone *Brachyscias*, 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

- Ironstone *Brachyscias* (*Brachyscias verecundus*) Interim Recovery Plan 2004–2009 (Luu & English, 2004),
- Shrubland Association on Southern Swan Coastal Plain Ironstone (Busselton Area) (Southern Ironstone Association) Interim Recovery Plan 1999–2002 (English, 1999), and
- Threat Abatement Plan for Competition and Land Degradation by Feral Rabbits (EA, 1999).

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

Information Sources:

Department of Conservation and Land Management (CALM) 2005, Records held in CALM's Declared Flora Database and Rare Flora Files, Western Australian Department of Conservation and Land Management.

English, V 1999, *Shrubland Association on Southern Swan Coastal Plain Ironstone (Busselton area) (Southern Ironstone Association): Interim Recovery Plan No 44: 1999-2002*, Department of Conservation and Land Management, Western Australia, viewed 9 April 2008,

<<http://www.environment.gov.au/biodiversity/threatened/publications/recovery/southern-ironstone/index.html>>

Environment Australia (EA) 1999, *Threat Abatement Plan for Competition and Land Degradation by Feral Rabbits*, Biodiversity Group, Environment Australia, viewed 9 April 2008,

<<http://www.environment.gov.au/biodiversity/threatened/publications/tap/rabbits/index.html>>

Gibson, N, Keighery, B, Keighery, G, Burbidge, A & Lyons, M 1994, *A floristic survey of the Southern Swan Coastal Plain*, Unpublished report for the Australian Heritage Commission prepared by Department of Conservation and Land Management and the Conservation Council of Western Australia (Inc.).

Luu, R & English, V 2004, *Ironstone Brachyscias (Brachyscias verecundus) Interim Recovery Plan 2004-2009*, Department of Conservation and Land Management, Western Australia, viewed 9 April 2008,

<http://www.naturebase.net/pdf/plants_animals/threatened_species/irps/bra_ver_irp174.pdf>

Threatened Species Scientific Committee (TSSC) 2006a, 'Commonwealth Conservation Advice on *Brachyscias verecundus*', Department of Environment, Water, Heritage, and the Arts, viewed 9 April 2008,

<<http://www.environment.gov.au/biodiversity/threatened/species/pubs/brachyscias-verecundus-conservation.pdf>>

Threatened Species Scientific Committee (TSSC) 2006b, 'Commonwealth Listing Advice on *Brachyscias verecundus*', Department of Environment, Water, Heritage, and the Arts, viewed 9 April 2008,

<<http://www.environment.gov.au/biodiversity/threatened/species/pubs/brachyscias-verecundus-listing.pdf>>

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