

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

Approved Conservation Advice for
Solanum dunalianum

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

Solanum dunalianum, Family Solanaceae, is a shrub growing to 2–4 m high. The branches, leaves and inflorescence are virtually hairless. Prickles are absent. The adult leaves have short stalks, are elliptical to ovate, 13–23 cm long, 4.3–7.5 mm wide, dark green on the upper surface, and paler below. Inflorescences (flower clusters) are two branched, with 15–25 flowers. The calyx tube is smooth and cone-shaped, with the apex of the cone pointing down, and is 1.5–2 mm long. The corolla is mauve, deeply lobed, 7–9 mm long. There are five stamens surrounding the style. Fruits are globular, 8–9 mm in diameter and red. Seeds are pale yellow, flattened, and 2–2.7 mm long (Bean, 2004).

Solanum dunalianum is close to *S. viridifolium*, which also occurs on Cape York Peninsula, but is distinguished from the latter which has hairless young leaves (cf *S. dunalianum*, whose young leaves have star-shaped hairs), and leaf stalks more than 15 per cent of the leaf blade length (cf *S. dunalianum*, whose leaf stalks are 7-10% of the leaf blade length (Bean, 2004).

Conservation Status

Solanum dunalianum 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). *Solanum dunalianum* is also listed as vulnerable under the *Nature Conservation Act 1992* (Queensland).

Distribution and Habitat

In Australia, *Solanum dunalianum* is known from Thursday Island, Sabai Island and near Weipa, Cape York Peninsula, Queensland, but Landsberg and Clarkson (2004) considered that it was “likely to be much more widespread”. The Queensland Herbarium records this species as covering approximately 50 km between Embley River and Possum Scrub (Queensland Herbarium, 2008). The total population is unknown. The minimum extent of this species is 135 km² and the minimum range is 42 km² (Landsberg and Clarkson, 2004). It inhabits semi-deciduous notophyll vine forest, or the edges of that community (Queensland Herbarium, 2008). Landsberg and Clarkson (2004) reported that one population was rediscovered during surveys in 2001–02 and that no other populations were found in the Weipa area despite targeted searching.

Beyond Australia, this species occurs from Malesia through New Guinea to the western Pacific (Landsberg and Clarkson 2004).

This species occurs within the Cape York (Queensland) Natural Resource Management Region.

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The distribution of *Solanum dunalianum* is not known to overlap with any EPBC-listed ecological community.

Threats

The main identified threats to some populations of *Solanum dunalianum* are associated with localised settlement pressures including land clearing; exotic animals, such as feral pigs (*Sus scrofa*); weeds; and altered fire regimes (Landsberg & Clarkson, 2004).

The main potential threat to *S. dunalianum* is habitat destruction caused by strip mining (Landsberg & Clarkson, 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/occurrences/remnants.
- More precisely assess population size, distribution, ecological requirements and the relative impacts of threatening processes.
- Undertake seed germination trials to determine the requirements for successful establishment.
- Undertake research on the fire ecology of this species.

Regional and Local Priority Actions

The following regional and local priority recovery and threat abatement actions can be done to support the recovery of *S. dunalianum*.

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.
- Minimise adverse impacts from land use at known sites, especially mining.
- Investigate formal conservation arrangements, management agreements and covenants on private land, and for crown and private land investigate inclusion in reserve tenure if possible.
- Undertake targeted searches for this species prior to clearing (or allocation of lands for clearing) for strip-mining.

Invasive Weeds

- Identify and remove weeds in the local area, which could become a threat to *S. dunalianum*, using appropriate methods.
- Manage sites to prevent introduction of invasive weeds, which could become a threat to the species, using appropriate methods.
- Ensure chemicals or other mechanisms used to eradicate weeds do not have a significant adverse impact on *S. dunalianum*.

Trampling, Browsing or Grazing

- Control introduced pests to manage threats at known sites.

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- Implement the Threat Abatement Plan for the control and eradication of feral pigs in the region (DEH, 2005).

Fire

- Develop and implement an appropriate fire management regime for local populations.

Conservation Information

- Raise awareness of *S. dunalianum* within the local community, particularly among mining interests and local Indigenous communities.
- Establish and/or maintain partnerships with private landholders and managers of land on which populations occur to ensure appropriate conservation.

This list does not necessarily encompass all actions that may be of benefit to *S. dunalianum*, 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

- Threat Abatement Plan for Predation, Habitat Degradation, Competition and Disease Transmission by Feral Pigs (DEH, 2005).

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

Information Sources:

Bean, AR 2004, 'The taxonomy and ecology of *Solanum* subg. *Leptostemonum* (Dunal) Bitter (Solanaceae) in Queensland and far north-eastern New South Wales', *Austrobaileya*, vol. 6, no. 4, pp. 639–816.

Department of Environment and Heritage 2005, *Threat Abatement Plan for Predation, Habitat Degradation, Competition and Disease Transmission by Feral Pigs*, Commonwealth of Australia, Canberra, viewed 15 August 2008, <<http://www.environment.gov.au/biodiversity/threatened/publications/tap/pig/pubs/feral-pig-tap.pdf>>.

Landsberg, J & Clarkson, J 2004, *Threatened plants of Cape York Peninsula, A report to the Australian Government Department of Environment and Heritage*, Tropical Savannas CRC.

Queensland Herbarium 2008, specimen label information, viewed 24 July 2008.