

THREATENED SPECIES SCIENTIFIC COMMITTEE

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

The Minister's delegate approved this conservation advice on 01/10/2015

Conservation Advice

Grevillea beadleana

Beadle's grevillea

Conservation Status

Grevillea beadleana (Beadle's grevillea) is listed as Endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act). The species is eligible for listing as Endangered as, prior to the commencement of the EPBC Act, it was listed as Endangered under Schedule 1 of the *Endangered Species Protection Act 1992* (Cwlth).

The main factors that are the cause of the species being eligible for listing in the Endangered category are that it has a restricted geographic distribution which is severely fragmented and precarious for the survival of the species.

Description

Beadle's grevillea is a spreading shrub, up to 2.5 m tall and wide. It has dissected and rather soft leaves about 12–16 cm long. There are short hairs on the upper surface and the lower surface is thickly felted with curled hairs. The scarlet flowers are the 'tooth-brush' type and are held prominently at the ends of the branchlets. The fruit is a hairy capsule that splits into two at maturity (OEH, 2015).

Distribution

Beadle's grevillea is known from four disjunct localities in northern NSW: 1) The majority of plants are found in the Binghi region to the north of Torrington and west of the New England Highway. In this area, there are a number of separate populations over an area of about 30 km², with an estimated total of about 40 000 plants; 2) The next largest population is located on the tablelands above the Macleay Gorges escarpment near Enmore, 25 km south-east of Armidale, in and adjacent to the Oxley Wild Rivers National Park; 3) In Guy Fawkes River National Park, 30 km north of Ebor, there are two populations, separated by about 20 km and totalling 700 plants; 4) The fourth locality is Chambigne Nature Reserve 30 km south-west of Grafton on an escarpment in the Orara River catchment. A fifth locality is near Walcha, however despite searches, it has not been relocated in this area since the 20th century (NSW DEC, 2004).

Threats

- Inappropriate fire regimes. Intervals between successive fires need to be sufficiently long to allow seedbank accumulation as fires killed all standing plants and population persistence relies entirely on post-fire seedling recruitment. Long fire intervals may also be detrimental, depending on longevity of the soil seedbank and may interfere with recruitment rates, which are currently unknown. Although seed germination is stimulated by fire, the mechanism and sensitivities are poorly understood. Germination responses may vary with the level of soil heating during fire (related to fire severity) and the seasonal timing of fires, which influence incubation temperatures. Anecdotal information suggests that high severity fires stimulate greater germination responses than low severity fires;
- clearing of habitat in locations not protected by conservation tenures;
- grazing and trampling by domestic stock, feral goats and horses;
- trampling by humans at high visitation sites;
- illegal collection of flowers and plants by wildflower enthusiasts and horticulturalists (OEH, 2015).

Conservation Actions

Conservation and Management priorities

Fire

- Implement an appropriate fire management regime for protecting key habitat. This would include periodic hot fires to promote seed germination, but not too frequent to kill young plants before they mature and contribute to accumulation of a soil seedbank. It is estimated that about 15 years between fires is required to allow plants to develop to full maturity and for the seedbank to be replenished to levels that would support appreciable recruitment after a subsequent fire (OEH, 2015; NSW DEC, 2004).

Habitat loss, disturbance and modifications

- Prevent clearing, fragmentation or development of known or potential habitat, e.g. through property agreements and voluntary conservation agreements (OEH, 2015).

Impacts of domestic species

- Exclude livestock from known and potential habitat and control feral herbivores such as horses and goats when detected in the vicinity of the population (NSW DEC, 2004; OEH, 2015).

Stakeholder Management

- Inform landowners and managers of sites where there are known populations and consult with these groups regarding options for conservation management and protection of the species;
- encourage and support property agreements and voluntary conservation agreements;
- provide signage in national parks to encourage the public to keep to established paths and to avoid collecting wildflowers or damaging plants in any way;
- prepare and display leaflets for the NSW National Parks and Wildlife Service, Councils, landholders and the community to raise awareness of the need to conserve this threatened species (NSW DEC, 2004; OEH, 2015).

Other conservation actions

- Collect seed stores for the NSW Seedbank (OEH, 2015);
- Investigate the merit and feasibility of establishing linkages between populations.

Survey and Monitoring priorities

- more precisely assess population size, distribution, ecological requirements and the relative impacts of threatening processes;
- review monitoring activities in the light of the above to assess the species' status and the effectiveness of management actions;
- adapt management actions as necessary.

Information and research priorities

- undertake seed germination experiments to determine the effect of varied heat shock temperature treatments on seed dormancy, and the effect of incubation temperatures on requirements for successful establishment to determine appropriate fire regimes for management,
- investigate seed viability, germination, dormancy and longevity (in the wild),
- determine the rate of seedbank accumulation under varied natural conditions,
- assess the relative impact of the threats affecting the species in potential and known habitat (NSW DEC, 2004),
- investigate options for linking, enhancing or establishing additional populations,
- prepare an ex situ program and conduct a reintroduction feasibility study.

References cited in the advice

NSW DEC (NSW Department of Environment and Conservation) (2004). Approved Recovery Plan for *Grevillea beadleana*. NSW Department of Environment and Conservation. Hurstville.

OEH (Office of Environment and Heritage) (2015). Beadle's grevillea – profile. Available on the Internet at: <http://www.environment.nsw.gov.au/threatenedspeciesapp/profile.aspx?id=10360>