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

Conservation Advice

Myrsine richmondensis

purple-leaf muttonwood

Conservation Status

Myrsine richmondensis (purple-leaf muttonwood) 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 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 the species has a total population of less than 500 individuals occurring in three separate locations (NSW DEC, 2004).

Description

The purple-leaf muttonwood is a small, evergreen tree or shrub that grows to 5 metres high. It occurs in the vegetation communities of tall open sclerophyll forest with a rainforest subcanopy, swamp sclerophyll open forest and on the margins of subtropical rainforest (DEC, 2004).

Distribution

The purple-leaf muttonwood occurs in north-eastern New South Wales (NSW) and is currently only known from three populations within the Richmond River and Clarence River catchments. It is estimated that 407 plants exist distributed across these three populations. The three populations occur on private property near Tathan, in Boatharbou Nature Reserve Lismore and in Mallangee National Park, west of Casino.

Threats

<u>Known threats</u>

- Loss and fragmentation of habitat through clearing and development,
- weed invasion and competition (weeds identified as threatening the ripple-leaf muttonwood include:
  - *Protoasparagus africanus* (asparagus fern)
  - *Solanum seaforthianum* (climbing nightshade)
  - *Passiflora suberosa* (corky passionfruit)
  - *Glycine* sp.
  - *Ligustrum sinense* (small-leaved privet)
  - *Lantana camara* (lantana)
  - *Andredera cordifolia* (madeira vine)
  - *Ageratina riparia* (mistweed) and
  - *Tradescantia fluminensis* (tradescantia)
- inappropriate fire regimes,
- damage from roadside maintenance (e.g. herbicide spraying or drainage works) (NSW DEC, 2004).

Potential Threats

- Fire within adjacent vegetation
- grazing by cattle
- illegal collection
- disturbance from logging activities (NSW DEC, 2004).

Conservation Actions

Conservation and Management Actions

Habitat loss, disturbance and modifications, damage and removal of plants

- Protect known populations and associated habitat from clearing.
- Reduce disturbance to the habitat around known populations (excluding necessary actions to manage the conservation of the species).
- implement and maintain roadside markings for areas of purple-leaf muttonwood. Avoid accidental damage to the known population by road maintenance staff and local land managers.
- keep precise locations of purple-leaf muttonwood confidential to discourage illegal collection (NSW DEC, 2004).

Grazing pressure and Invasive species

- Restrict access by fencing known sites to protect from grazing by cattle,
- control weeds, in accordance with bush regeneration plans as part of a co-ordinated program at known sites (NSW DEC, 2004).

Fire

The fire regime within which a population of purple-leaf muttonwood could persist is unknown (NSW DEC, 2004). The purple-leaf muttonwood appears to persist on the margins of forest types that are either fire intolerant or require a relatively long time between fire events (NSW DEC, 2004).

- Implement an appropriate fire management regime in neighbouring vegetation communities, to reduce risk of frequent fire in purple-leaf muttonwood populations.
- Provide maps of known occurrences to local and state Rural Fire Services and District Bush Fire Management Committees and seek inclusion of mitigation measures in bush fire risk management plan/s, risk register and/or operation maps (NSW DEC, 2004).

Stakeholder Management

- Engage with private landholders and land managers responsible for the land on which populations occur and encourage these key stakeholders to contribute to the implementation of conservation management actions (NSW DEC, 2004).
- Train road maintenance staff and local land managers to identify this species to help prevent accidental damage (NSW DEC, 2004).
- Raise awareness of the problems caused to the species by illegal collection.

Other conservation actions

- Restore degraded habitat using bush regeneration techniques.

Survey and Monitoring priorities

- More precisely assess population size, distribution, ecological requirements and the relative impacts of threatening processes through regular monitoring of populations and targeted surveys.
- 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.
- Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.

Information and research priorities

- Undertake further ecological research into the species' life history and ecology to assess the species' ecological requirements relevant to the persistence of the species. Key areas for investigation include:

    - reproductive biology including conditions required for the production of flowers and fruit
    - conditions in which seedling recruitment occurs
    - propogation techniques
    - key habitat requirements
    - response to fire

- investigate options for linking, enhancing or establishing additional populations,
- investigate the establishment of an ex situ seedbank by researching this species' seed storage requirements, to be used as a form of insurance against the loss of genetic diversity should any site be destroyed,
- establish an ex situ representative from each genetically distinct population in an appropriate location eg. Botanic Gardens (NSW DEC, 2004).

References cited in the advice

NSW DEC (NSW Department of Environment and Conservation) (2004). Approved Recovery Plan for the Ripple-leaf Muttonwood (Rapanea species A Richmond River, NSW Department of Environment and Conservation. Hurstville.

OEH (Office of Environment and Heritage) (2015). Ripple-leaf Muttonwood - profile. Available on the Internet at: http://www.environment.nsw.gov.au/savingourspeciesapp/project.aspx?ProfileID=10728