



Syzygium paniculatum

Smith

The following information is provided to assist authors of Species Impact Statements, development and activity proponents, and determining and consent authorities, who are required to prepare or review assessments of likely impacts on threatened species pursuant to the provisions of the *Environmental Planning and Assessment Act 1979*. These guidelines should be read in conjunction with the *NPWS Information Circular No. 2: Threatened Species Assessment under the EP&A Act: The '8 Part Test' of significance* (November 1996) and the species profile.

Survey

Syzygium paniculatum is morphologically similar to the more common *S. australe* and care should be taken to correctly identify each species. The leaves of *S. australe* are generally more elliptic than *S. paniculatum* and the fruit of *S. paniculatum* are a deeper magenta colour than the reddish-pink fruit of *S. australe* (Harden 1992).

Life cycle of the species

Changes to local catchment hydrologies are likely to affect the lifecycle of the species, in terms of the habitat conditions for existing populations and in relation to seed dispersal and recruitment. Similarly, weed invasions will prevent seedlings from reaching maturity and ultimately result in a gradual ageing of the population. Fire is likely to kill *S. paniculatum* individuals, and frequent fires will lead to a decline in recruitment and ultimately the loss of local populations.

Development that is proposed adjacent to populations of the species should consider the lifecycle impacts of altered hydrology and ability to manage weed invasions and fire.

Buffer zones to protect the plant and its habitat should be of sufficient size to absorb any potential impacts (which will be site specific) and allow some natural expansion of the population.

Translocation of the species as a development ameliorative measure is generally not recommended given the uncertainties associated with the ensuring success of such a program.

Threatening processes

There are two key threatening processes listed in Schedule 3 of the TSC Act that are relevant to *S. paniculatum*. These are:

- *High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition and*
- *Invasion of Native Plant Communities by Bitou Bush and Boneseed*

Other threats to populations of *S. paniculatum* are likely to include: habitat loss resulting from development; vegetation clearing; grazing in close proximity to creek lines causing root damage, prevention of seedling establishment and erosion; and weed invasion (in particular Lantana). Habitat fragmentation is likely to impact on the fecundity of populations of *S. paniculatum*, due to reduced population numbers and opportunities for successful recruitment.

Viable local population

A 'local population' of *S. paniculatum* should be defined on a catchment basis. That is, occurrences of the plant within each catchment constitute a 'local population'. The rationale for this approach is based on the likely dispersal of seed being related to the riparian habitats in which the plant occurs. For

those occurrences of the species not occurring in riparian habitats, a 'local population' should be defined following Keith *et al.* (1997). That is, all occurrences of the plant within a 1km radius (where there is opportunity for exchange of genetic material) should be defined as constituting a 'population'. Following Keith *et al.* (1997), occurrences of the species within that 1km radius inclusive are called subpopulations.

It should be assumed that each population is viable regardless of its size, until further assessment indicates otherwise. Assessment of each local population should include reference to the number and locations of all subpopulations. *S. paniculatum* is a long-lived species with potentially large seed dispersal areas, and thus even small populations may be viable should the conditions enable successful recruitment.

Significant area of habitat

Given the small size and isolated nature of *S. paniculatum* populations, all areas of known habitat are considered to be significant for the species.

Isolation and fragmentation

Vegetation clearing for urban and agricultural development has fragmented populations of *S. paniculatum* across its range. Populations of the species now occur in isolated patches of remnant vegetation, often along riparian corridors and coastal littoral rainforests.

Management of isolated *S. paniculatum* habitats should aim to maintain the continuity of native vegetation and to remove threats such as grazing. Rehabilitation of riparian corridors through weed removal and buffer

plantings should assist recruitment of the species.

Regional distribution

Syzygium paniculatum occurs in the Sydney Basin Bioregion and the lower reaches of the NSW North Coast Bioregion. Recent confirmed records of the species indicate a current distribution consisting of four broad meta-populations:

- Jervis Bay;
- Towra Point;
- Lower Hunter and Central Coast; and
- Upper Hunter (Bulahdelah-Myall Lakes).

Across this range, the species occupies a narrow, linear, coastal distribution in specific, restricted habitat types that have been extensively cleared and/or modified (ie, riparian corridors and littoral rainforests).

Limit of known distribution

The limits of *Syzygium paniculatum*'s distribution are Booti Booti NP (northern limit) south to Conjola State Forest (southern limit). There are historical (1947) but unconfirmed records of the species west to the Blue Mountains.

Adequacy of representation in conservation reserves

Syzygium paniculatum is not likely to be adequately represented in conservation reserves.

Critical habitat

Critical habitat cannot be declared for *Syzygium paniculatum* as it is not listed in Schedule 1 of the TSC Act 1995 (NSW).

For Further Information contact

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References

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Keith, D.A., Chalson, J.M. and Auld, T.D. (1997) *Assessing the status of threatened plants: a new methodology and an application of the vascular flora of NSW*. Final report: Project number 450. Commonwealth Endangered Species Program. Environmental Australia, Biodiversity Group. Unpublished Report.

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