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Threatened flora in Tasmanian wood production forests: a pragmatic approach to management

Mark Wapstra^{1,2}, Fred Duncan¹ and Nina Roberts¹

¹Forest Practices Authority, 30 Patrick St Hobart 7000, ² Current address: ECOTas 28 Suncrest Avenue, Lenah Valley, TAS 7008
CONTACT: +613 62 33 7804 fred.duncan@fpa.tas.gov.au +613 62 33 7716 nina.roberts@fpa.tas.gov.au



Tasmania's forests

Forests cover 3,600,000 ha of Tasmania's land area:

- 40% in formal reserves (e.g. National Parks, State Reserves) – mainly on public land;
- 30% on other public land – mainly on public land (including informal reserves) managed by Forestry Tasmania (government business enterprise);
- 30% on other private land.

Tasmania's threatened forest flora

Tasmania has about 1800 native vascular plant species, of which about 470 are listed as threatened (Rare, Vulnerable, Endangered or Presumed Extinct) on Tasmania's *Threatened Species Protection Act* (TSPA). About half occur in wood production forests, mostly in dry sclerophyll forests and woodlands that have relatively low timber quality.

Many of these species also require protection through the Commonwealth EPBC Act or the Tasmanian *Regional Forest Agreement*. In wood production areas, threatened flora is managed through Tasmania's forest practices system.

Training and education

The Tasmanian forest practices system places a strong emphasis on education. Planning tools, training and field days allow FPOs to develop and update their skills.



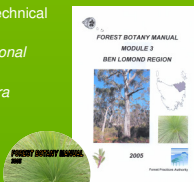
Mark Wapstra discusses management of threatened species with a harvesting supervisor and logging contractor. In this case, *Pimelea filiformis* (*slender riceflower*) - a low shrub listed as Rare on the TSPA - was protected in an informal reserve. Recent research has established that this species is more abundant within its range than previously thought. It is currently being considered for delisting from the TSPA.

Assessing if threatened flora could occur in FPP areas

FPOs use several planning tools to determine if an area has the potential to contain threatened flora. Sites known or likely to contain threatened species must be referred to the FPA for specialist advice – this is often preceded by detailed surveys.

The Forest Botany Manual and Flora Technical Notes allow FPOs to:

- identify vegetation types in operational areas;
- assess potential for threatened flora to be present;
- address other management issues (e.g. Phytophthora cinnamomi hygiene procedures).



Web-based databases indicate known locations of threatened species in the vicinity of operational areas. Other site details help determine requirements for survey and prescriptions.



Developing management prescriptions – a cooperative approach

About 1000 FPPs are certified each year, mainly for logging operations. About 5-10% of FPPs require FPA specialists (in association with DPIW staff, researchers, land managers, FPOs and logging contractors) to take account of threatened flora that may be affected by the operation.

Prescriptions incorporated into FPPs must be operationally practical and result in effective management of the species. Prescriptions will depend on:

- Attributes of the proposed operation (e.g. selective logging, clearfelling, plantation establishment, agricultural clearing);
- Characteristics of the species (e.g. ecology, distribution, population size).

Site-specific prescriptions are developed for many FPPs (e.g. modified silviculture or hygiene measures) to ensure that threatened species are maintained on-site. Forestry operations may be excluded entirely for very localised species, or species highly susceptible to pathogens or forestry-related disturbance. Special prescriptions may not be needed for species that cope readily with disturbance.



Cyathea cunninghamii (*slender tree fern*) is known from about 15 sites in Tasmania, all near creeklines in wet forests. It is listed as an Endangered species on the TSPA. A proposed logging operation adjacent to a key population required:

- Assessment of populations by staff of FPA, DPIW and Forestry Tasmania and fern expert Michael Garrett;
- Assessment of risks (physical damage, exposure, hydrological changes, windthrow damage, fire escape).

Site-specific prescriptions included widening streamside reserves to reduce changes in microclimate; and conducting regeneration burning under stringent conditions.



A disjunct population of *Eucalyptus subcrenulata* (*yellow gum*) is excluded from a logging coupe in northeast Tasmania following discussion between Brad Potts (Tasmania's eucalypt specialist) and staff of Forestry Tasmania and FPA.



Tasmania's forest practices system

The Forest Practices Authority (FPA) regulates forestry activities in Tasmania. Forest Practices Plans (FPPs) must be prepared by accredited Forest Practices Officers (FPOs) for all forestry operations on public and private land. This includes logging, road construction, and clearing native forest for plantations or agriculture.

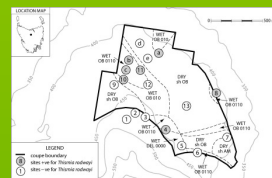
The *Forest Practices Act* and associated *Forest Practices Code*, the *Tasmanian Threatened Species Protection Act* and *Tasmanian Regional Forest Agreement* all include requirements to manage threatened species.

Staff of the FPA train and accredit FPOs, monitor forestry operations and enforce regulations. FPA scientific staff undertake research and incorporate research results into general systems of forest management and prescriptions for specific FPPs. Research and development of prescriptions also involves liaison with botanists from Department of Primary Industries and Water (DPIW) – Tasmania's conservation agency – as well as other stakeholders.



Research: underpinning adaptive management

The FPA collaborates with other organisations such as the University of Tasmania, CRC Forestry, Tasmanian Herbarium, DPIW, Forestry Tasmania and forestry companies to undertake research into the ecology, distribution and conservation status of threatened species and effects of forestry activities. Such research is critical in developing and adapting management prescriptions. Research results also inform reviews of the conservation status of listed species.



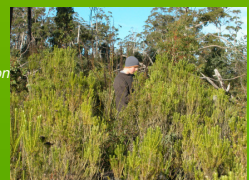
Left: *Thymia rodwayi* (*fairy lanterns*) is Tasmania's only virtually subterranean flowering plant. It is listed on the TSPA as a Rare species. It is known from about 25 separate sites, all in wet eucalypt forests. A chance encounter in a proposed coupe (HU302D) prompted further surveys.

Centre: Distribution of *Thymia* in coupe HU302D. Vegetation types also shown.

Right: Map from Forest Practices Plan for HU302D. Green areas are reserved from logging; they include most *Thymia* sites, as well as areas reserved for landscape and water supply. One *Thymia* site (red arrow) has been logged to assess the species' ability to recover from disturbance.



Oxidia achlaena (*golden everlastingbush*) has a very localised distribution in southeast Tasmania, and is listed as a Rare species on the TSPA. Recent research shows that *Oxidia* proliferates (right) on disturbed sites (population estimated at >10,000 per ha on one regrowth coupe 7 years after logging). Special management prescriptions are not usually required for forestry operations on sites containing this species.



Monitoring impacts and efficacy of prescriptions

FPA staff assess the implementation and effectiveness of threatened flora prescriptions in FPPs. Research and monitoring allow management prescriptions to be refined.

Hovea corrickiae (*glossy purplepea*) occurs locally on moist slopes in northeast Tasmania. It is listed as a Rare species on the TSPA. Management prescriptions in FPPs exclude logging from some Hovea sites and allow other sites to be logged. Post-harvest monitoring indicated that the prescriptions were implemented. The species was colonising disturbed ground including firebreaks, log landings and clearfelled (and burnt) slopes.



Other management options

Land managers can enter into agreements with the State government under the *Threatened Species Protection Act*. Private landowners can also enter conservation covenants, receiving payments for reserving land supporting threatened flora.



Forestry Tasmania has entered into a Public Authority Management Agreement (PAMA) for the management of *Eucalyptus radiata* (*Forth River peppermint*), a Rare species that is restricted to a few river systems (mainly on State forest) in Tasmania's Central North. The PAMA includes generic management prescriptions, which provides security of the wood resource and the species.



Tetratheca gunnii (*shy pinkbells*), once thought to be extinct in Tasmania, was rediscovered in 1985. It is restricted to serpentinite rocks in a localised part of northeast Tasmania. It is listed as an Endangered species, partly because it is highly susceptible to *Phytophthora cinnamomi* and requires specific fire regimes to regenerate. Collaboration between State agencies has led to reservation of most populations on public and private land.