

The Tasmanian Land Conservancy: protecting Tasmania's biodiversity through conservation on private land

Matthew Taylor and Denna Kingdom

Tasmanian Land Conservancy, Hobart, Tas. Email: mtaylor@tasland.org.au

Introduction

The productive landscapes of northern, central and eastern Tasmania comprise few protected reserves. These fertile areas are largely privately owned and have been the focus of agricultural development in Tasmania since the early colonial period. Vegetation types most affected by human activities in Tasmania include grassland, woodland and dry eucalypt forest, which support many of Tasmania's threatened plant species. Of nearly 2000 vascular plants native to Tasmania (Baker and Duretto 2011) 472 are listed as threatened under State or Commonwealth legislation.

The Tasmanian Land Conservancy (TLC) was formed in 2001 with the primary aim of protecting biodiversity on private land in Tasmania. The TLC is a private, non-profit conservation organisation that works closely with the Tasmanian community, landowners, Government and business. This year the TLC celebrates its tenth year of delivering conservation programs that have achieved significant outcomes for plant conservation on private land in Tasmania.

The TLC employs three main mechanisms to protect conservation values on private land:

1. Acquisition of land to be kept and managed by the TLC as private, permanent reserves.
2. Operation of a 'Revolving Fund' where properties are purchased, protected by conservation covenants and resold, thereby returning capital to the fund to be spent on further conservation purchases.
3. Partnership with the State Government to promote and facilitate voluntary conservation agreements on private land.

The following case studies illustrate how some of these mechanisms are contributing to the conservation of threatened flora in Tasmania.

The Vale of Belvoir Reserve

The Vale of Belvoir Reserve is a 473 hectare property that was purchased by the TLC in 2009. It supports diverse sub-alpine grasslands that are critical habitat for eight threatened plant species. This property has a long and stable management history. Regular mosaic burning of the *Poa* grasslands and low intensity, summer cattle grazing has occurred since 1897. The TLC is currently investigating the effect of fire and grazing on grassland diversity and threatened plant species at the Vale.

A primary goal of reserve management at the Vale of Belvoir is the protection of Alpine Candles (*Stackhousia pulvinaris*), a mat-forming perennial herb with distinctive flowers in early summer. The only known population of this species in Tasmania occurs at the Vale of Belvoir and the species is listed as vulnerable under State legislation. The species is locally abundant in disturbed grassland areas, such as bare ground around sinkhole margins and along animal pads (Threatened Species Section 2010a).

The TLC has completed extensive surveys that have identified additional populations and increased the known extent of Alpine Candles at the Vale. Further research is also being conducted into the ecology of the species. This information will be used to ensure ongoing sustainable management of Alpine Candles and other threatened species at the Vale of Belvoir.

Rubicon Sanctuary

In 2003 the Rubicon Sanctuary became the first property to be purchased by the TLC's Revolving Fund initiative. A conservation covenant has been registered on the land title to protect the ecological values of the property. The property was resold in 2007. The nineteen hectare property supports over two hundred species of vascular plants and is an extremely significant site for orchid conservation in Tasmania. Over fifty species of orchid have been recorded on the property, of which five are listed as threatened.



The iconic Miena Cider Gum (*Eucalyptus gunnii* subsp. *divaricata*). Photo Matthew Taylor.

The Marsh Leek-orchid (*Prasophyllum limnetes*) is only known from this location. It grows in an ecotone between coastal *Eucalyptus amygdalina* woodland and low-lying marshy heath and sedgeland. The flowering of many Leek-orchids is strongly dependent on hot summer fires. Orchid flowering and reproduction usually increase in the year following a fire and decrease in subsequent years (Threatened Species Section 2010b).

Monitoring and adaptive management of orchids at Rubicon Sanctuary ensures the long term viability of threatened orchid populations. An ecological burn program has been established to create a temporal and spatial burn mosaic, thereby increasing structural and floristic diversity of the reserve. This promotes the persistence of the orchid taxa by maintaining openness in the heathy sedgelands and grasslands that are their primary habitat.

Ironhouse Point Protected Area

The steep coastal terrain of Mt Elephant in north-east Tasmania is subject to short periods of extremely heavy rainfall that result in frequent and intense flash flooding of streams. This has excised deep gullies where damp and shaded conditions exist in an otherwise dry landscape and provide a haven for rare and unusual species of fern (Garrett 1992). In 2010 a conservation covenant was registered on private land at Ironhouse Point at the base of Mt Elephant to provide protection for two threatened fern species that have an extremely restricted distribution in Tasmania.

A population of Prickly Rasp Fern (*Doodia aspera*) was discovered during the covenant survey by a TLC conservation officer. This is a highly significant find as the species had not previously been recorded in Tasmania. The population is confined to a narrow band along Billy's Creek that is subject to frequent disturbance from flash flooding. The Ironhouse Point Protected Area also supports a population of the threatened Gristle Fern (*Blechnum cartilagineum*), which is only known from four geographically isolated locations in northern and eastern Tasmania.

The New Leaf Project

The latest conservation initiative of the TLC is the New Leaf project, which aims to protect important natural values on 27 000 ha of recently purchased land throughout Tasmania. The core area of the New Leaf project is the central highlands of Tasmania, where several large properties contain potential habitat for the Miena Cider Gum. The Miena Cider Gum (*Eucalyptus gunnii* subsp. *divaricata*) is an iconic Tasmanian tree and is nationally listed as endangered. The species is endemic to Tasmania and is restricted to frost hollows and forest margins on the Central Plateau. The sap of the Miena Cider Gum is edible and provides an important food source for native fauna. It is thought to have been eaten by indigenous Tasmanian people and early European settlers, and the naturally fermented sap may have been consumed for an intoxicating effect (Potts et al. 2001). Substantial population decline of the Miena Cider Gum has occurred over the last twenty



Left: The endangered Marsh Leek Orchid (*Prasophyllum limnetes*). Photo Phil Collier. Right: Prickly Rasp Fern (*Doodia aspera*) – a new species for Tasmania. Photo Matthew Taylor.



Volunteers assist with monitoring of threatened flora at the Vale of Belvoir Reserve. Photo: Vicki Campbell.

years because of drought, grazing and inappropriate fire regimes. The TLC will undertake extensive surveys of New Leaf properties to identify new populations within the core range of the species. Where populations are found the TLC will work with local experts to develop management strategies to protect this iconic Tasmanian species.

References

- Baker, M.L. and Duretto, M.F. (2011). *A Census of the Vascular Plants of Tasmania and Index to the Students Flora of Tasmania*. Tasmanian Herbarium, Tasmanian Museum and Art Gallery, Hobart.
- Garrett M. (1992). Pteridophytes of northeastern Tasmania. *Tasforests* 4:57-68.
- Potts, B.M., Potts, W.C. and Kantvilas, G. (2001). The Miena Cider Gum, *Eucalyptus gunnii* subsp. *divaricata* (Myrtaceae); a taxon in rapid decline. *Papers and Proceedings of the Royal Society of Tasmania* 135: 57-61.
- Threatened Species Section (TSS) (2010a). *Listing Statement for Stackhousia pulvinaris (alpine candles)*, Department of Primary Industries, Parks, Water & Environment, Hobart.
- Threatened Species Section (TSS) (2010b). *Listing Statement for Prasophyllum limnetes (marsh leek-orchid)*. Department of Primary Industries, Parks, Water and Environment, Hobart.