

Merino Street
Kings Meadows

Threatened Flora and Fauna Assessment

Significant species and vegetation communities at the site of a
proposed subdivision.

Prepared for Cohen & Associates P/L

o.b.o.

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1 Introduction

This report examines an area of land at Kings Meadows where a 10 lot subdivision has been proposed to ascertain the presence of any threatened flora or fauna or vegetation communities of conservation significance. The location of the land of interest (Certificate of Title 132062-1) is shown in Figure 1. It has an area of around 11Ha and is bounded by Connector Park, Merino Street industrial area, the Kings Meadows Connector road and existing residential subdivision to the north.



Figure 1 Area of interest, Merino Street Kings Meadows (5 metre contours, Rivulet location approximate).
 (Base data/image courtesy Cohen & Ass from theLIST & TASMAR, © State of Tasmania).

The land was inspected in January 2005 to locate species on the site listed as threatened under the *Tasmanian Threatened Species Protection Act* or *Commonwealth Environment Protection and Biodiversity Conservation Act*. The presence of habitat suitable for threatened fauna known to occur in the area is a key factor used to assess their likely presence. Significant vegetation communities are assessed using the vegetation community categories and mapping of *Tasveg*.

Prior to the site survey significant species recorded in the neighbourhood of the site were reviewed and considered to mitigate inherent limitations. Flora or fauna species not found on one occasion can not be ruled out and might turn up during a survey on some other season or year; many species, such as orchids, are only seasonally evident and others can be very small or provide insufficient material for identification. In addition any search is limited by sampling probability. Lower plants have not been considered.

1.1.1 General habitat conditions

The site includes a ridgeline dropping with moderate slopes (around 25%) eastwards. Dolerite bedrock outcrops in places on the ridge and in a steep gully cut by the Kings Meadows Rivulet on sites southern boundary, deviating into the adjoining road reserve. Soils are generally well drained clay loam but appeared shallow in places.

Probably once covered by a dry forest the land is now highly disturbed by weed invasion, vehicular tracks and clearing and cutting of trees, perhaps for firewood. The often dense shrubs and weeds that have been encouraged and rock outcrops, a handful of over mature trees provide shelter and a range of habitat options for animals. Tree regeneration is sparse overall. Invasive weeds occur throughout and are dominant cover over perhaps a quarter of the site. The Rivulet is a source of water and includes pools that may be permanent and provide some aquatic habitat. It has however significant road and built areas within its catchment.

The land is isolated by the busy Kings Meadows Connector road, Connector Park, open paddocks and industrial and residential land use. (Extensive forest habitat areas are present 800m to the west.) For wildlife these present a barrier to movements and a source of disturbance. People and domestic animals (feral and truant) are likely to exert significant pressures.

This overall picture of a semi-natural but stressed habitat is consistent with the condition rating of "2" assessed for the site by Blake G., Bell P. et al. (2003). Overall this suggests it is a locally significant habitat that may provide refuge for threatened species if present, but which requires management intervention to halt or repair significant existing and further degradation.

The land is located in the Northern Midlands bioregion (IBRA5).

1.1.2 Information sources

- State GTSpot data on threatened species and vegetation mapping, via a Special Values Report (Parks & Wildlife Service GIS 2005) viewable at: http://www.gisparks.tas.gov.au/ValueReports/VRep0512091048_421.html
- Vegetation Condition Analysis for the Tamar Region (Blake G., Bell P. et al. 2003)
- Threatened Flora of Tasmania CD (Lazarus, Lawrence et al. 2003)
- Tasmania's Threatened Fauna Handbook (Bryant and Jackson 1999)
- (Department of Primary Industries 2005)
- Tasmanian Nature Conservation Priorities (CARSAG 2003)
- GTSpot and Parks and Wildlife Service GIS (Parks & Wildlife Service)
- www.thelist.tas.gov.au

2 Known flora and fauna of significance

2.1 Threatened flora

No threatened plant species are known from or within 500m of the site from existing records (Parks & Wildlife Service GIS 2005).

There are 103 sites within 5 km of the site with records of 51 threatened flora species, many from locations such as the Cataract Gorge and the North Esk River (Parks & Wildlife Service GIS 2005). Within 2Km of the site there are nine threatened plant species known from 32 records (Parks & Wildlife Service). These nine species and an additional 21 species for which suitable habitat may be present on the site (Lazarus, Lawrence et al. 2003) are listed in Table 1.

Table 1 Threatened plant species recorded within 2Km of the site and some others with potential for habitat on the site.

(Source: Parks & Wildlife Service; Parks & Wildlife Service GIS 2005).

Scientific name	Common name	Threatened status # Tasmania /National	Preferred habitat and site comments
<i>Threatened flora known within 2Km</i>			
<i>Arthropodium strictum</i>	chocolate lily	r	Possible habitat. Found in grassland and open dry forest and in the area.
<i>Austrodanthonia procera</i>	tall wallaby-grass	r	Prefers dry dolerite or mudstone sites, though in open forest—marginal/possible.
<i>Bolboschoenus caldwellii</i>	sea club-rush	r	In wetland habitats normally, unlikely.
<i>Brunonia australis</i>	blue pincushion	v	Typically in grassy <i>Eucalyptus amygdalina/viminalis</i> dry forest or woodland and tolerates some disturbance, but prefers gentle slopes and alluvial soils. Possibly on site.
<i>Caesia calliantha</i>	blue grass lily	r	From grassy habitats in the Midlands. Marginal on site.
<i>Caladenia patersonii</i>	Paterson's spider orchid	v	Prefers near coastal low shrubby heathland with moist or well drained soil—unlikely.
<i>Hypoxis vaginata</i>	sheathing yellow-star	r	Typically from wet swampy habitat or unimproved pastures. Marginal habitat and unlikely on site.
<i>Senecio squarrosus</i>	leafy groundsel	r	Possible on site, found in dry forests and responds to disturbance.
<i>Viola cunninghamii</i>	Cunningham's violet	r	Records under revision (many may be miss identified). Thought to in fact be limited to sub-alpine habitats. A small plant not likely on the site.

Table 1 continued.

Scientific name	Common name	Threatened status # Tasmania /National	Preferred habitat and site comments
<i>Other threatened flora</i>			
<i>Alternanthera denticulata</i>	lesser joyweed	e	Possible on moist sites by Rivulet only.
<i>Aphelia pumilio</i>	dwarf aphelia	r	Possible, very small plant easily overlooked.
<i>Callitris oblonga oblonga</i>	South Esk pine	v/EN	May occur in gorge of Rivulet.
<i>Calystegia sepium</i>	great bindweed	r	Possibly along Rivulet, in <i>Melaleuca</i> scrub.
<i>Centaurium spicatum</i>	Australian centaury	r	Wide ranging; possibly introduced to Tasmania.
<i>Cryptandra amara</i>	bitter cryptandra	e	May be on site, prefers dry dolerite based habitat.
<i>Cynoglossum australe</i>	Australian hound's tongue	r	Possible on site.
<i>Diplodum grandiflorum</i>	superb greenhood	r	Prefers shady shrubby or heathy forests or coastal sheoak woodland on sandy or loamy soils. Marginal habitat and unlikely to occur.
<i>Discaria pubescens</i>	hairy anchor plant	e	Site may be suitable.
<i>Doodia caudata</i>	small rasp fern	v	Riparian species, possible in boulder habitat by Rivulet.
<i>Epacris exserta</i>	South Esk heath	v/EN	In dry scrub and forest around wetland/rivers. Marginal habitat by Rivulet.
<i>Grevillea australis linearifolia</i>	narrow-leaf southern grevillea	r	Possible, wide ranging in forests and woodlands.
<i>Hymenochilus cycnocephalus</i>	swan greenhood	e	Unlikely; mostly in the Midlands on basalt or coastal sand soils.
<i>Lythrum salicaria</i>	purple loosestrife	v	Mostly wetland and streambank habitats, weedy and possibly introduced. Marginal habitat.
<i>Persicaria decipiens</i>	slender knotweed	v	Riparian plant, marginal habitat along Rivulet.
<i>Persicaria subsessilis</i>	bristly knotweed	e	Wet or rocky sites or under <i>Melaleuca</i> scrub, marginal habitat along Rivulet?
<i>Poa mollis</i>	soft poa grass	r	From dry cliffs and hill sides with open habitat, possible but marginal.
<i>Prostanthera rotundifolia</i>	roundleaf mint bush	v	Rocky and riverside habitats—possible on site.
<i>Scutellaria humilis</i>	dwarf scullcap	r	Moist shady habitat—site is marginal. Unlikely on site.
<i>Velleia paradoxa</i>	spur velleia	v	Possible on site, occurs in grassy woodland and grasslands.
<i>Vittadinia gracilis</i>	woolly New Holland daisy	r	Predominantly in dry forest habitats though likes dolerite substrates—marginal habitat.

v & VU = vulnerable; e & EN = endangered; r & R = rare.

Tasmanian listing under the *Tasmanian Threatened Species Protection Act*

National listing under the *Commonwealth Environment Protection and Biodiversity Conservation Act*

2.2 Vegetation communities

Present *Tasveg* (ver. 1.1) mapping of the vegetation communities at the site is shown in Figure 2. This data is field checked and based on 1997 aerial photography. The photography underlying Figure 1 is more recent and shows that since then forest to the north of the site has been cleared.

Neither of the two native communities mapped—*Eucalyptus viminalis* grassy woodland and Dry scrub (with sparse *E. viminalis*)—are listed as threatened communities at the state level (Department of Primary Industries 2005). Bioregionally *Eucalyptus viminalis* grassy woodland is approaching a 70% reduction in extent and is considered vulnerable (priority status “B”, bioregional category “3”; CARSAG 2003).

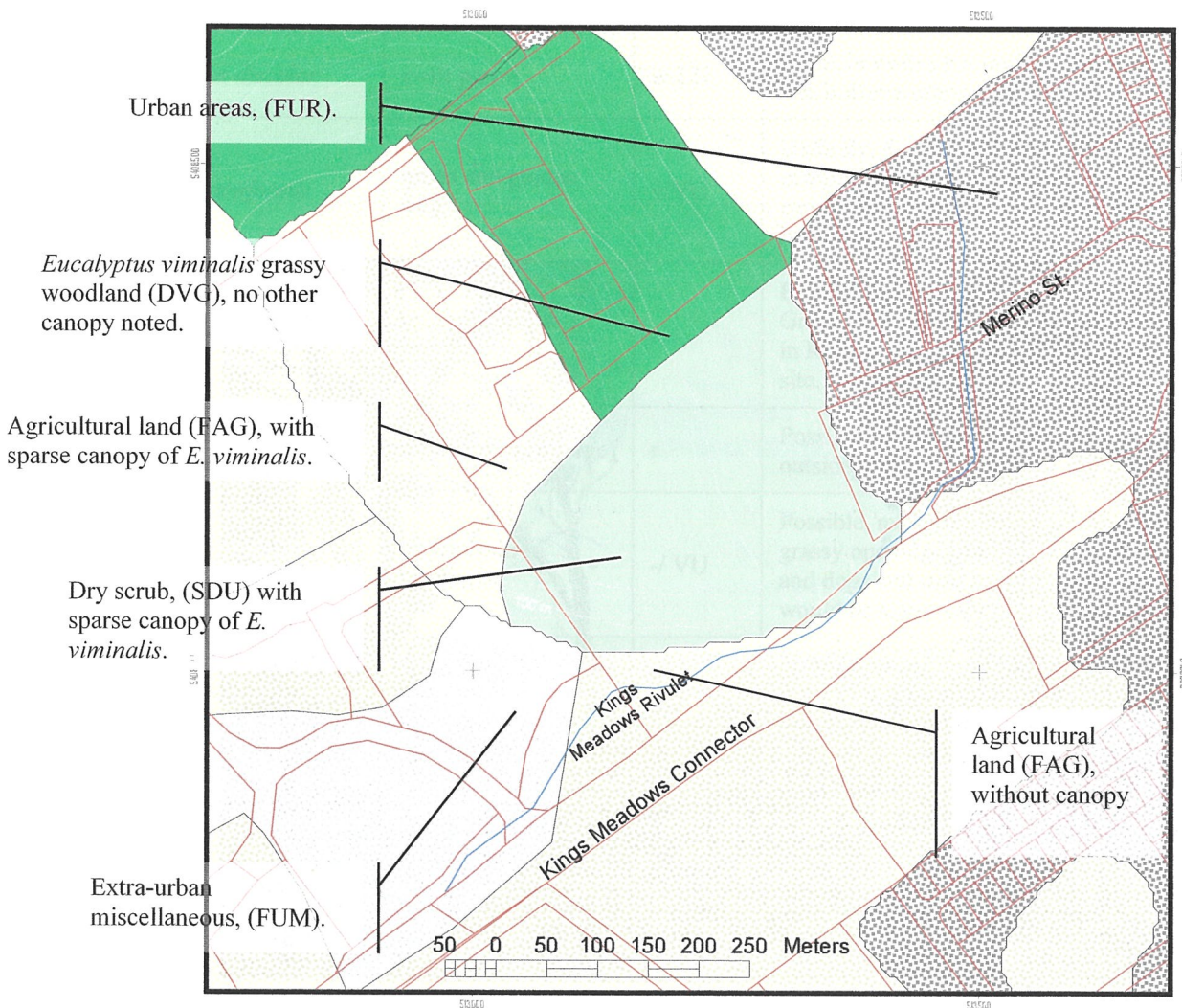


Figure 2 Vegetation communities mapped at the site; *Tasveg* ver. 1.1.
(Base data from theLIST & courtesy Cohen & Ass., © State of Tasmania)

2.3 Fauna

2.3.1 Threatened fauna

No threatened fauna species are known from or within 500m of the site from existing records (Parks & Wildlife Service GIS 2005).

There are 12 threatened animal species known from 41 sites within 5 km of the site (Parks & Wildlife Service GIS 2005). These and the wedge-tailed eagle are listed in Table 2 below.



Figure 3 'Remnant trees and 'woodland' vegetation on the site.

Table 2 Threatened fauna recorded within 5 km (Parks & Wildlife Service GIS 2005), plus the wedge-tailed eagle.

Name	Common name	Listing, Tas./Nat.	Suitable habitat likely on site ?
<i>Aquila audax fleayi</i>	wedge-tailed eagle	e/EN	No. Unlikely on the site due to high disturbance levels.
<i>Beddomeia launcestonensis</i>	hydrobiid snail (cataract gorge)	r	No, beyond known localised range (Cataract Gorge) and poor aquatic habitat.
<i>Dasyurus maculatus maculatus</i>	spotted-tailed quoll	r/ VU	Marginal to unsuitable due to isolation, urban barriers and pressure from domestic & feral competitors/predators.
<i>Lathamus discolor</i>	swift parrot	e/ EN	Possible visitor but unlikely resident. Some tree hollows present for nesting.
<i>Litoria raniformis</i>	green and golden frog	v/VU	Unlikely, Rivulet lacks permeant water with complex vegetation, particularly preferred emergents. Marginal habitat on land boundary.
<i>Migas plumleyi</i>	spider (cataract gorge)	r	Beyond known localised range (Cataract Gorge) and suitable boulder habitat not found in Rivulet gorge and unlikely elsewhere on site.
<i>Pasmaditta jungermanniae</i>	snail (cataract gorge)	r	Possible habitat, but highly degraded and outside localised range.
<i>Perameles gunnii</i>	eastern barred bandicoot	-/ VU	Possible, marginal habitat. Low cover and grassy openings suitable, but predation by cats and dogs and road and built area barriers would be significant pressures.
<i>Prototroctes maraena</i>	Australian grayling	v/ VU	No suitable habitat. Rivulet drains into streams that may be used; though the catchment is already degraded.
<i>Pseudemoia rawlinsoni</i>	glossy grass skink	r	Found at edges of wetlands and streams in moist rushy low dense vegetation. Unlikely to occur.
<i>Sarcophilus harrisii</i>	Tasmanian devil, devil	v(pp)	Unlikely. Predation and competition from cats and dogs, isolation, urban barriers and disturbance would be significant pressures and site is too small on its own.
<i>Thylacinus cynocephalus</i>	thylacine	x/ EX	N/A
<i>Tyto novaehollandiae castanops</i>	masked owl (Tasmanian)	e	Limited foraging habitat and possible hollows for nesting. Marginal habitat.

Species such as devils, the masked owl and quoll are likely to prefer the more extensive and quieter forest habitat available 800m to the east. The site may offer some limited refuge habitat within range of this better habitat, but animals would still need to preserver against the barriers and human disturbance in between.

3 Site survey findings

3.1 Flora

Plant species listed in Table 3 were observed on the site during field inspection on 27/1/05. Conditions were very dry at the time of the survey. This is not a comprehensive list of the site's flora and additional are species likely to occur. Introduced species are a prominent component.

Vegetation of the site generally comprises

- remnant peppermints and white gums of eucalypt forest disturbed by clearing, timber cutting and vehicular tracks and heavily infested by pasture grasses and various weeds.
- regrowth of tall shrubs and sparse tree saplings
- a generally grassy understorey
- patches of dense weed infestation near access points on the north (residential area) and eastern (Merino St.) boundaries
- a narrow band of degraded riparian vegetation along the Rivulet, including small patches of paperbarks, rock outcrops and a diversity of shrub species.

None of the threatened species expected (Table 1) were found on the site. For most the site offers little or no suitable habitat. While not found the disturbed grassy scrub with sparse trees may be suitable for several of these species: the chocolate lily, tall wallaby-grass, leafy groundsel, dwarf aphelia, spur Velleia and orchids.

Native vegetation elements are patchy across the site. Trees are concentrated on the northern half where, apart from a thick patch on the ridge-top of thick blackberry, hawthorn and briar rose, native understorey appears less disturbed than elsewhere. Swamp gums (*E. ovata*) are found emerging from dense silver wattle in the south west corner. Older trees with hollows occur mostly on the ridge. Blackberry, hawthorn, cotoneaster and briar which bear fleshy fruits are widespread in the understorey.



Figure 4 Dry scrub vegetation on the site with grassy groundcover. The shrub canopy is closed in other places, with little groundcover layer.

Table 3 Plant species observed on the site.

Scientific name	Common name	Weeds
<i>Acacia dealbata</i>	silver wattle	
<i>Acacia melanoxylon</i>	blackwood	
<i>Acrotriche serrulata</i>	ants delight	
<i>Allocasuarina verticillata</i>	drooping sheoak	
<i>Astroloma humifusum</i>	native cranberry	
<i>Austrodanthonia</i> sp.	wallaby grass	
<i>Briza maxima</i>	quaking grass	
<i>Bursaria spinosa</i>	prickly box	
<i>Centaurium minus</i>	centaury	
<i>Cirsium vulgare</i>	spear thistle	
<i>Correa reflexa</i>	common correa	
<i>Cotoneaster</i> spp.	cotoneaster	
<i>Crataegus monogyna</i>	hawthorn	
<i>Dactylus glomerata</i>	cocksfoot	
<i>Eucalyptus amygdalina</i>	black peppermint	
<i>Eucalyptus ovata</i>	black gum	
<i>Eucalyptus viminalis</i>	white gum	
<i>Exocarpus cupressiformis</i>	native cherry	
<i>Gahnia</i> sp.	sedges	
<i>Lepidosperma longitudinale</i>	sword-sedge	
<i>Lomandra longifolia</i>	sagg	
<i>Melaleuca ericifolia</i>	swamp paperbark	
<i>Notelaea ligustrina</i>	native olive	
<i>Pinus radiata</i>	radiata pine	
<i>Poa</i> spp.	tussock grass	
<i>Poaceae</i>	grasses	
<i>Pomaderris aspera</i>	hazel pomaderris	
<i>Prunus</i> sp.	stone fruits	
<i>Rosa rubiginosa</i>	sweetbriar	
<i>Rubus fruticosus</i>	blackberry	
<i>Themeda triandra</i>	kangaroo grass	
<i>Ulex europeans</i>	gorse	

Previous mapping of the vegetation communities (Figure 2) on the site is reasonably consistent with the vegetation observed during inspection of the site. Areas of weed infestation and riparian scrub communities are considered too small (<1Ha) and indistinct to warrant mapping. Woodland tree cover extends somewhat further into the site than indicated by the presently mapped *Eucalyptus viminalis* grassy woodland community (Figure 2); but “cut-over” is equally an appropriate qualification to add.

A recent regional vegetation mapping and analysis project rated the condition of site's vegetation as "largely natural" with "non-native components" and limited disturbance, but also contributing locally to the "maintenance of local biodiversity" (Blake G., Bell P. et al. 2003). These findings are supported by this survey, and also the dilemma for management: while the degradation pressures place the values of the vegetation at risk, but would require large inputs to restrain and reverse. Best prospects are perhaps to retain remnant trees and the *Eucalyptus viminalis* grassy woodland community where possible and vegetation in the gorge of the Kings Meadows Rivulet.

3.2 Fauna

No sightings or signs of threatened fauna species were found on the site. Vegetation cover is likely to be encouraging for some of those expected, such as the quoll, bandicoot and devil, but high levels of disturbance are evident; the noise of heavy traffic and urban activity around the site for instance. Apart from two wallabies disturbed in the gorge no skinks or other ground animals were observed. There were signs of rabbits and dogs on the site.

Only a few of the threatened fauna species expected may have very marginal habitat on the site and none are considered likely to be harmed significantly by development on the site. Elements of marginally suitable habitat on the site—such as old trees with hollows, patches of grassy vegetation with few weeds and the Rivulet gorge with its diverse shrubby vegetation—are nonetheless valuable for fauna generally.

4 Conclusions

- No threatened flora or fauna species are known on the site from existing records or inspection of the land.
- No suitable habitat for threatened fauna is considered to exist on the site, primarily due to its small size, surrounding urban and industrial land use and existing degradation. Some elements of useful habitat occur on the site for some species.
- No threatened vegetation communities of significance at the state level occur on the site. An area of *Eucalyptus viminalis* grassy woodland community occurs on the site and is of moderate bioregional (Northern Midlands) conservation significance (Priority B, vulnerable).
- Overall the site contains substantial biodiversity value but is significantly degraded and isolated by urban and industrial development around it. It would require substantial management inputs to recover, against significant existing pressures, or even hold its condition.

Recommendations

Subdivision development has been proposed for the site to create 10 lots.

- Where possible within lots native vegetation should be retained and restored to conserve its regional and local biodiversity significance.
- Suggested key areas on the site are shown in Figure 5 below.
- Conservation of the site's vegetation and habitat values would need to involve planning development to integrate retained natural areas with development and use (into visual screening buffers or to avoid impacts for instance), providing protection during development works and ongoing management for retention and maintenance of natural areas.

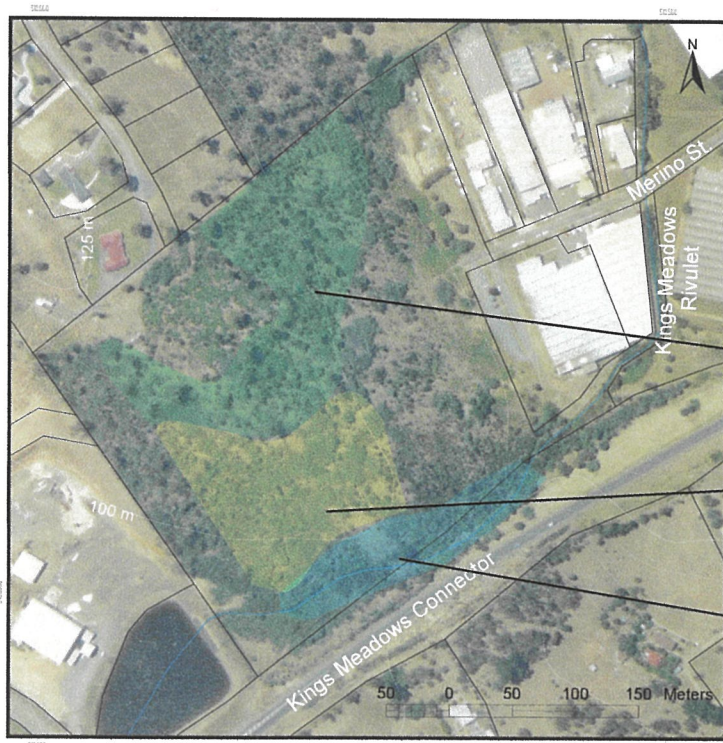


Figure 5 Priority areas biodiversity value.

(Base data/image courtesy Cohen & Ass from theLIST & TASMAR, © State of Tasmania)

Remnant trees—woodland habitat

Grassy scrub habitat

Gorge habitat

References

- Blake G., Bell P., et al. (2003). Tamar Region Vegetation Mapping and Analysis. Launceston, Tamar Region Natural Resource Management Reference Group Inc.
- Bryant, S. L. and J. Jackson (1999). Tasmania's Threatened Fauna Handbook. Hobart, Nature Conservation Branch, DPIWE.
- CARSAG, C., Adequate and Representative Scientific Advisory Group) (2003). Tasmanian Nature Conservation Priorities. DPIWE, DPIWE.
- Department of Primary Industries, W. a. E. (2005). Threatened Native Vegetation Communities List Version 6. DPIWE, Department of Primary Industries, Water and Environment.
- Lazarus, E., N. Lawrence, et al. (2003). "Threatened Flora of Tasmania CD."
- Parks & Wildlife Service. "Parks & Wildlife Service GIS: GTSpot, etc." 2005, from <http://www.gisparks.tas.gov.au/>.
- Parks & Wildlife Service GIS. (2005). "Natural Values Report - MerinoSt_SpValRep_coh-kmf." Retrieved 9/12/05, 2005, from http://www.gisparks.tas.gov.au/ValueReports/VRep0512091048_421.html.