

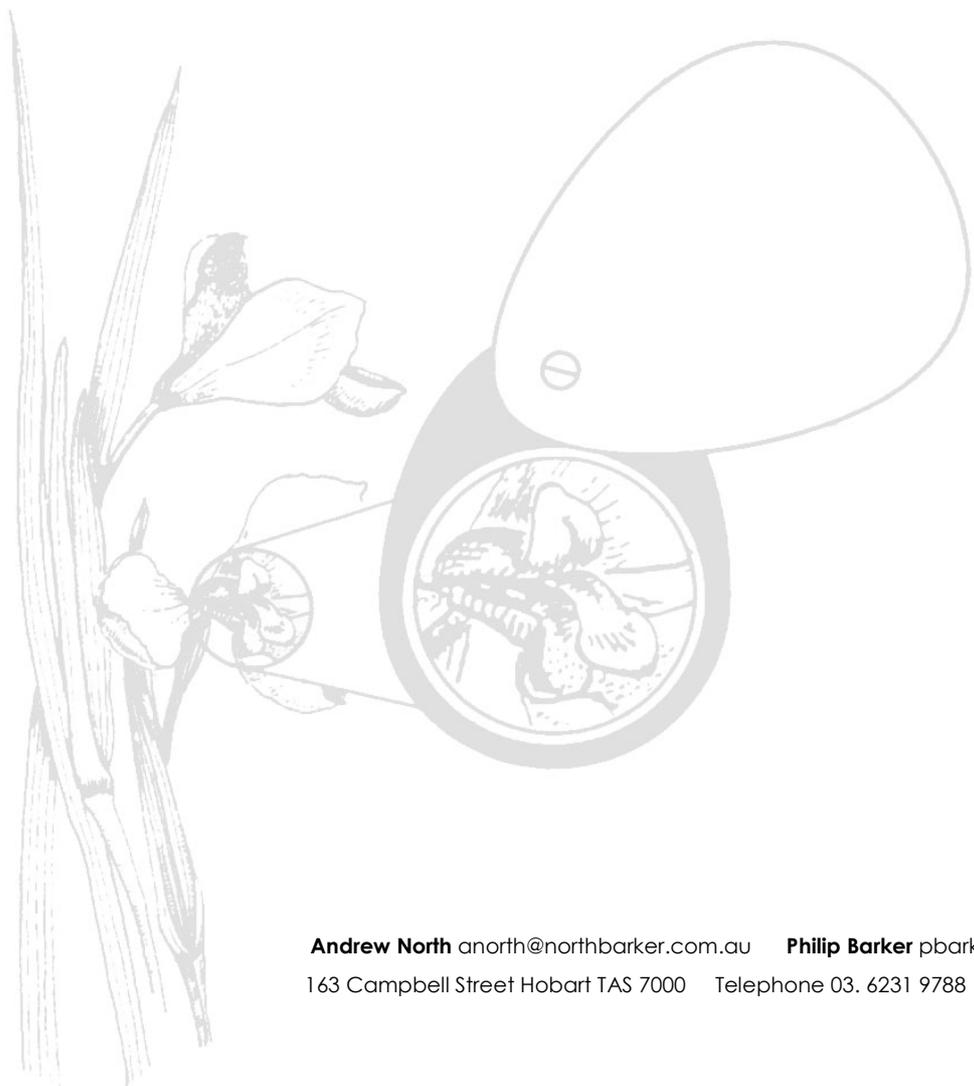
Savage River Mine

Tasmanian devil Survey and Habitat Assessment

April 14th 2010

For Grange Resources

GRA002



SUMMARY

A fauna habitat assessment and fauna survey for Tasmanian devils was undertaken within a mining lease at Savage River, held by Grange Resources, to assess suitability of the area before reconstruction of existing roads and construction of new roads.

The abundance of opportunities for dens such as hollow logs and dead tree stumps indicate that the surveyed area does contain suitable Tasmanian devil denning habitat. High or moderate quality denning habitat for Tasmanian devils occurred on approximately 1.4km of the routes surveyed. The remainder of the survey area is considered to be low quality denning habitat, however devils will still forage and move through these areas.

The presence of devils was confirmed with the observation of numerous devil scats, indicating that devils shelter and forage in the survey area. Active dens suitable for devils were also found within the survey area.

Vegetation community verification and mapping was carried out during the survey. Five native vegetation communities (using TASVEG land-use mapping units) were present, including the following;

1. **RLS** – *Leptospermum* with rainforest scrub
2. **RMT** – *Nothofagus-Atherosperma* rainforest
3. **SWW** – Western wet scrub
4. **WNL** – *Eucalyptus nitida* over *Leptospermum*
5. **WNR** – *Eucalyptus nitida* forest over rainforest

Leptospermum with rainforest scrub (RLS), *Nothofagus-Atherosperma* rainforest (RMT), Western wet scrub (SWW), *Eucalyptus nitida* over *Leptospermum* (WNL), and *Eucalyptus nitida* forest over rainforest are not threatened communities and all are well reserved.

Recommendations:

1. To protect the Tasmanian devil denning habitat, all active dens should be protected with a 30 metre buffer zone. From July to February this zone should be extended to 50 metres with work time being restricted to avoid dawn and dusk.
2. Proposed roads should be re-routed to avoid areas marked as high quality devil denning habitat. Where feasible moderate quality devil denning habitat should also be avoided.
3. Mature trees should be retained where practical.
4. Best practice vegetation clearance practices should be used (see Section 5).
5. A weed and plant pathogen (for *Phytophthora* and myrtle wilt) management plan should be developed in accordance with recognised protocols to limit the risk of introducing or spreading them to currently uninfected sites (see Section 5).

ACKNOWLEDGMENTS

Fieldwork: Vanessa Hayes and Kirsty Kay, NBES.

Report preparation: Philip Barker, Vanessa Hayes and Chris Obst, NBES.

Client consultation: Michael Everitt, Grange Resources.

Mapping: Chris Obst, NBES

Photography: Vanessa Hayes and Kirsty Kay – all photos taken onsite.

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1. INTRODUCTION

1.1 BACKGROUND

Grange Resources has proposed the development of 7.4km of new access routes into an area within a mining lease at Savage River. This particular area is currently unmined, however two previous access roads still exist, and a number of minor access tracks for surveying purposes have been developed. North Barker Ecosystem Services have been engaged by Grange Resources to undertake a fauna habitat assessment for Tasmanian devils within the boundaries of the proposed access routes.

1.2 THE STUDY AREA

The area surveyed within the lease is located approximately 10km south from the existing mine works at Savage River, off Corinna Road, approximately 47km from Waratah.

The original routes to be surveyed included 1.9km of former access roads planned for re-opening, and an additional 4.1km of proposed new access roads, making for a total survey area of 6.0km.

For the purpose of this report all tracks have been re-labelled as tracks 1 to 7, as indicated on Figure 2. Minor amendments to the surveyed routes took place prior to the survey with a slight change to the western end of track 1 and a disjunct section of track added to the track 3 survey area (running off Corinna Rd).

All routes were covered by native vegetation. The routes were surveyed accordingly to priority, with the existing roads as priority one, and proposed new roads priority two or three. Former access roads were surveyed across a 20m corridor, while new roads were surveyed across a 60m corridor.

Due to time restrictions and difficult terrain, the northern priority three route was not surveyed, nor was about 300m of track at the northern end of the other priority three route. At the end of the survey a total of 5.0km was covered. An overview of the area surveyed is illustrated in Figure 2.

The altitude of the lease area ranges from around 250 m to 350 m, with the slope varying across the routes which occasionally run across flat terrain or along a ridgeline.

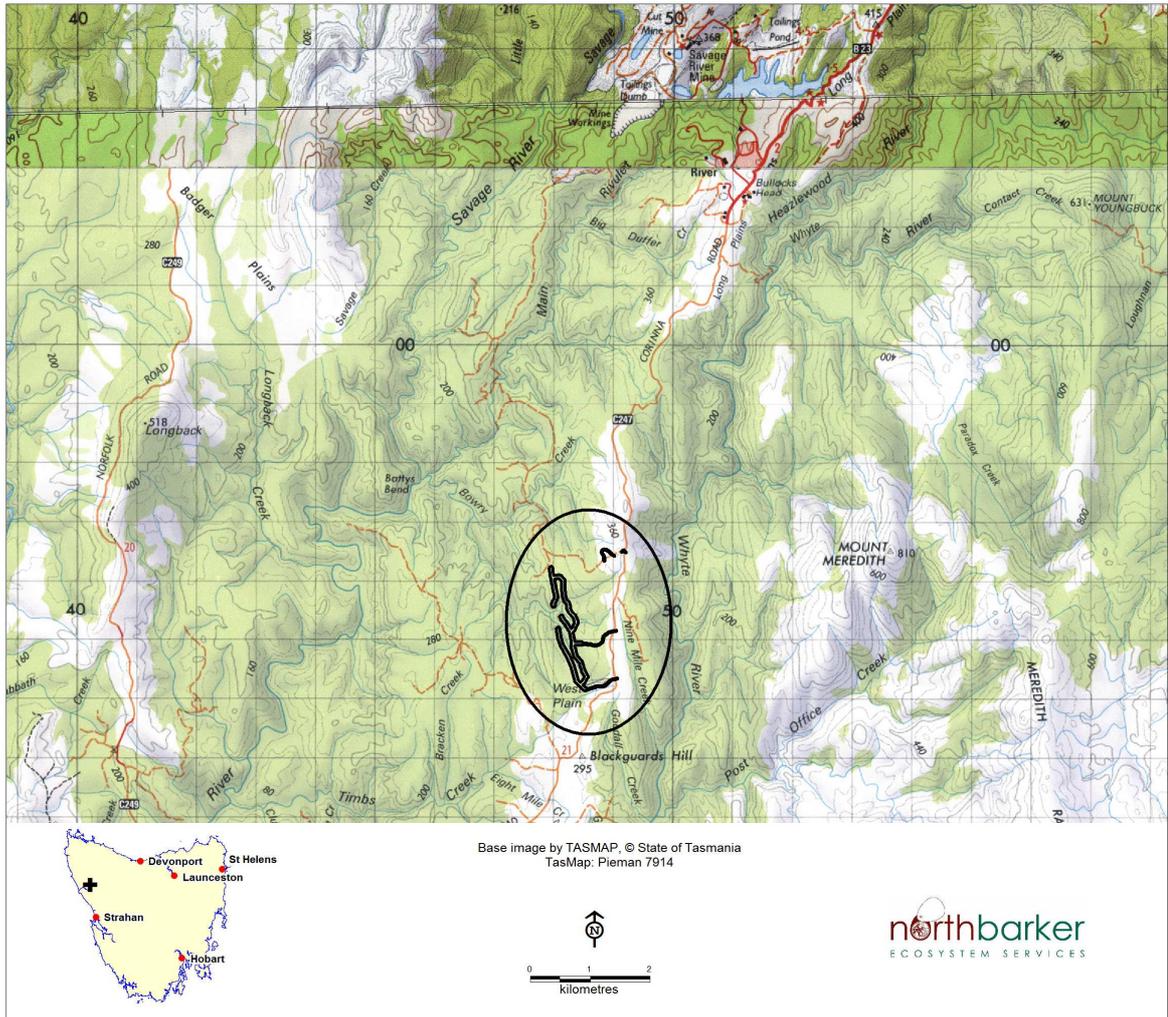


Figure 1 - Location of Study Area

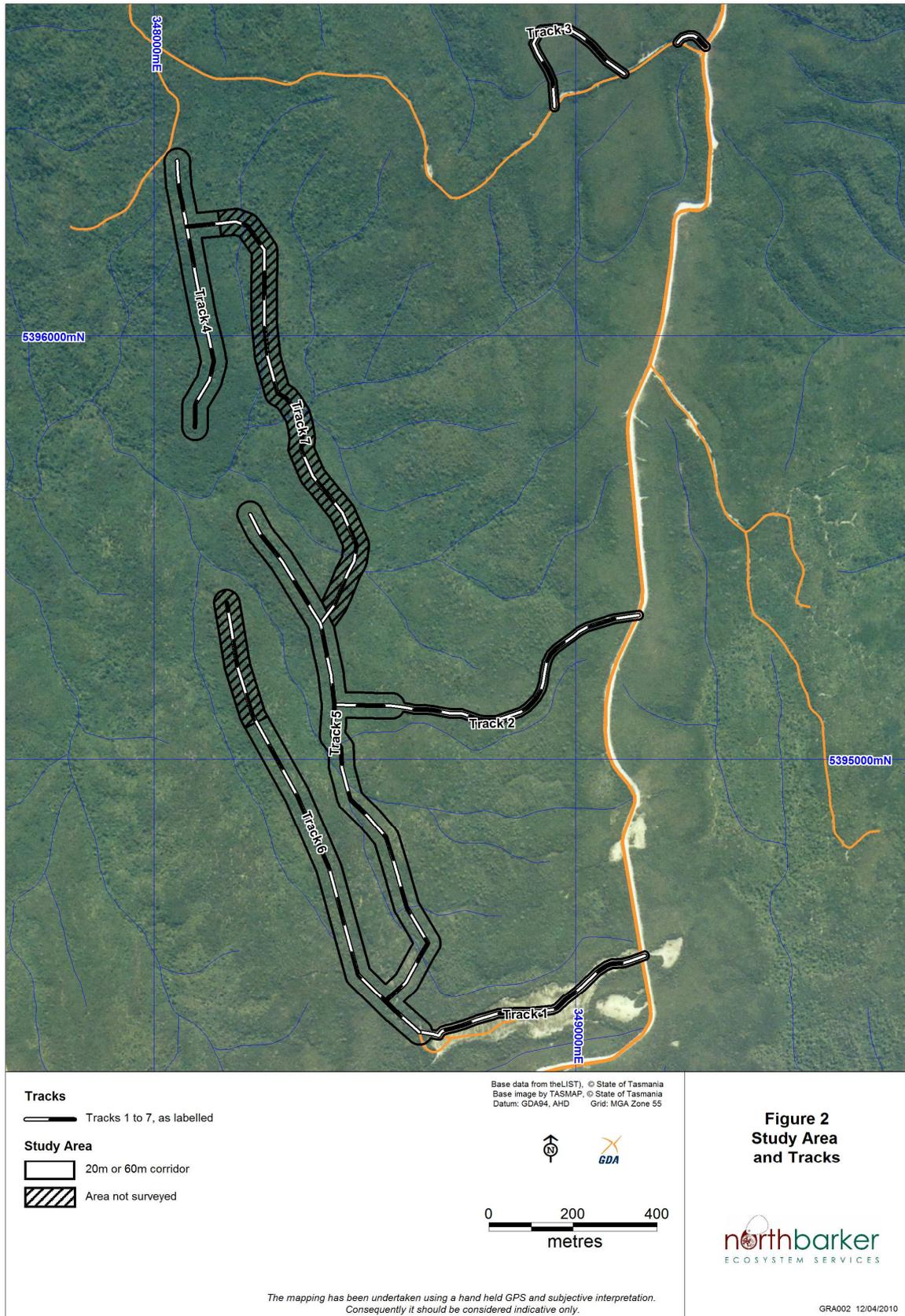


Figure 2 - Tracks and Area Surveyed

2. VEGETATION SURVEY AND FAUNA HABITAT ASSESSMENT

2.1 BACKGROUND RESEARCH

The following sources were used for biological records from the region:

- Natural Values Report Number 38504¹ - all threatened plant and animal records within 5 km of the study area plus potential suitability for other threatened fauna.
- TASVEG 2.0 Digital Data – As of February 2009 - This layer has been field truthed.
- Nature Conservation Act 2002, Threatened Native Vegetation Communities List

2.2 VEGETATION SURVEY

The survey was undertaken from 16th to 19th March 2010. The existing TASVEG mapping was field verified during an on-ground survey, with forest types and dominant flora species recorded.

2.3 FAUNA HABITAT ASSESSMENT

The lease area was assessed for fauna habitat specifically for the Tasmanian devil, which is known to inhabit the area. The habitat assessment was based on the overall structure of the vegetation including identification of factors such as the presence of old growth trees with hollows and logs, as well as topographic slope and ground cover. Evidence of native animal presence, such as scats, dens and burrows, were also noted.

Where active dens were found, sand traps were left overnight in an attempt to record footprints and thereby confirm the fauna type of the inhabitant. However due to heavy rain overnight on the date the sand traps were set, the results were inconclusive.

2.4 ASSESSMENT OF CONSERVATION SIGNIFICANCE

Methods of assessing conservation status of vegetation communities and flora or fauna species are detailed in Appendix 1.

Vegetation types have been classified according to TASVEG². The conservation status of a vegetation type relates to its current extent compared with the modelled extent prior to European settlement. This has allowed an estimate of the extent of loss to land clearing to be calculated. An amendment to the *Nature Conservation Act 2002* includes the listing of threatened native vegetation communities in accordance with their conservation status³.

The State and Federal Governments are committed through the Regional Forest Agreements to achieving a Comprehensive Adequate and Representative (CAR) Reserve System (following JANIS criteria for reservation targets outlined in Appendix 1). Analysis of the reservation status of vegetation types in Tasmania (as

¹ Natural Values Atlas, 01/03/2010, Threatened Species Section, DPIPW.

² Harris & Kitchener 2005

³ DPIW 2006

per current TASVEG mapping) has also only been completed for forest communities as part of the Forest Conservation Fund ⁴. No recent analysis exists for non forest vegetation.

The conservation significance of species is determined at a state and federal level by legislation (Tasmanian *Threatened Species Protection Act 1995* and Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*), the implications of which are considered in the light of relevant legislation (Appendix 2).

2.5 LIMITATIONS

The survey was undertaken in daylight, and as Tasmanian devils are nocturnal, no confirmed sightings were recorded. Similarly, whilst some of the dens found appear to be suited to devils according to location, size, depth etc, occupancy could not be confirmed due to lack of actual sightings or footprints at the entrances. Typically, March is also the breeding season for devils, during which male devils will prevent a female from leaving his den, therefore on-ground evidence of adult devils such as scats and footprints may be less prevalent during this time. Juvenile devils are weaned in summer and have usually left the maternal den by February. The spread of Devil Facial Tumour Disease (DFDT) has however produced a shift in reproductive behaviour, with mating and birthing occurring at atypical times of year.

Wombats also burrow in the survey area, and many wombat scats were found along a number of the surveyed routes. It should be noted however that devils often inhabit disused wombat burrows and often occupy similar habitats.

⁴ FCF 2007

3. THE BIOLOGICAL VALUES

The distribution of vegetation and the impact upon it varies from region to region around Tasmania. The conservation status has been determined and presented at the State and bioregional levels. A bioregion is an area that is similar in biological and physical characteristics throughout and hence the vegetation that occurs in it is generally characteristic of the region. Vegetation that is characteristic of a neighbouring or remote region but also occurs in the bioregion may be considered rare or threatened in one region but not in another. Consequently, the conservation status of any vegetation type may vary from bioregion to bioregion.

3.1 THE VEGETATION

Current TASVEG (version 2.0) vegetation community mapping indicates that most of the site is characterised by *Nothofagus cunninghamii* undifferentiated rainforest (RMU), with patches of wet *Eucalyptus obliqua* undifferentiated forest (WOU), wet *Eucalyptus nitida* undifferentiated forest (WNU) and western wet scrub (SWW).

The field survey concluded that the TASVEG mapping is not a wholly accurate representation of the situation within the site. The most common vegetation community within the study area is *Leptospermum* (tea-tree) with rainforest scrub (RLS). Patches of western wet scrub (SWW), wet *Eucalyptus nitida* over *Leptospermum* (WNL), wet *Eucalyptus nitida* over rainforest (WNR) and *Nothofagus* (myrtle) - *Atherosperma* (sassafra) rainforest (RMT) also occur within the study area (refer Figure 3). None of these communities are listed as threatened native vegetation communities under the Nature Conservation Act, 2002. These vegetation communities are briefly discussed below, and the reservation status is shown in Table 1.

***Leptospermum* with rainforest scrub (RLS) – see Plate 5**

This vegetation community was identified along the lower extent of Track 2, and along most of Track 5 and Track 6. Past logging and the construction of a number of tracks through these areas has most likely influenced the distribution of this community within the study area. Over time, and in the absence of disturbance, this community has the potential to develop into a rainforest community.

The community exists within the study area as scrub (5 – 8m in height) of various densities with an uneven canopy dominated by *Leptospermum* species. There is a mixture of rainforest species in the understorey such as *Nothofagus cunninghamii*, *Eucryphia lucida*, *Phyllocladus aspleniifolius*, *Anopterus glandulosus* and *Andopetalum biglandulosum*. Other common species include *Gahnia grandis*, *Pteridium esculentum*, *Baueria ruboides* and *Pimelea drupaceae*.

RLS generally occurs in western Tasmania on gentle to moderate slopes in high rainfall areas up to an altitude of 800 m above sea level.

***Nothofagus* - *Atherosperma* rainforest (RMT)**

One area of *Nothofagus* - *Atherosperma* rainforest (RMT) was identified along the southern part of Track 4. This area was dominated by *Nothofagus cunninghamii* and other rainforest species including *Acacia melanoxylon*, *Atherosperma moschatum*, *Eucryphia lucida* and *Dicksonia antarctica* with a sparse and open understorey structure consisting of fallen logs, leaf litter and occasional *Pteridium esculentum* and other ferns.

This community is considered to be moderately suitable Tasmanian devil habitat due to the presence of numerous fallen logs and dead tree stumps, which would provide good shelter. However, the minimal ground cover does not provide ideal foraging and hunting opportunities for devils.

Wet *Eucalyptus nitida* forest over *Leptospermum* (WNL) – see Plate 6

Vegetation consistent with WNL was identified at the eastern end of Track 2, close to Corinna Road and on a small section at the north of Track 7. *Eucalyptus nitida* forms a tall canopy over a dense layer of a variety of *Leptospermum* species. The ground layer is dense, predominantly consisting of *Pteridium esculentum*.

WNL is found in the western half of Tasmania on lower slopes, valley bottoms and river flats from sea level to approximately 600m.

Wet *Eucalyptus nitida* forest over rainforest (WNR) – see Plate 4 & 7

The vegetation along most of Track 4 and the northern part of Track 5 is consistent with wet *Eucalyptus nitida* forest over rainforest (WNR). *Eucalyptus nitida* forms a tall canopy over a number of rainforest species including *Nothofagus cunninghamii*, *Eucryphia lucida*, *Atherosperma moschatum*, *Andopetalum biglandulosum*, *Anopterus glandulosus*, *Pomaderris apetala* and *Acacia melanoxylon*. *Coprosma quadrifida*, *Pimelea drupaceae* and *Pteridium esculentum* occur commonly in the understorey.

Western wet scrub (SWW) – see Plate 8

The vegetation along the length of Track 3 and in the short section surveyed between Corinna Road and the northern access road accords with western wet scrub (SWW). The vegetation along the majority of Track 1 also currently accords with this vegetation community based on the species present and vegetation structure, which is a result of the previous disturbance in this area. It is considered that over time this community may evolve into a structure and composition more consistent with wet *Eucalyptus nitida* forest over *Leptospermum* (WNL).

Frequently occurring species within this community include *Leptospermum scoparium*, *Leptospermum nitidum*, *Leptospermum glaucescens*, *Leptospermum lanigerum*, *Melaleuca squarrosa*, *Melaleuca squamea*, *Acacia mucronata*, *Banksia marginata*, *Bauera ruboides*, *Sprengelia incarnata*, *Empodisma minus*, *Gleichenia dicarpa*, *Gahnia grandis* and *Eucalyptus nitida* saplings.

In the vicinity of Track 3, the community occurs as a dense, uneven scrub less than two metres in height. Along the length of Track 1 where the community occurs, it reaches up to four metres.

This vegetation type is abundant in western Tasmania from near sea level to approximately 750m.

Table 1: Conservation and reservation status of the native vegetation communities.

Mapped TASVEG Community	State-wide Conservation Priority⁵⁶	Regional Conservation Priority⁷
<i>Leptospermum with rainforest scrub</i> RLS	Not threatened and adequately reserved Accurate figures not available	Not threatened and adequately reserved Accurate figures not available
<i>Nothofagus-Atherosperma rainforest</i> RMT	Not threatened and adequately reserved 441,200ha remains 385,600ha reserved	Not threatened and adequately reserved 274,000ha remains 255,600ha reserved
<i>Western Wet Scrub</i> SWW	Not threatened and adequately reserved Accurate figures not available	Not threatened and adequately reserved Accurate figures not available
<i>Eucalyptus nitida forest over Leptospermum</i> WNL	Not threatened and adequately reserved 242,800ha remains 221,100ha reserved	Not threatened and adequately reserved 191,300ha remains 177,500ha reserved
<i>Eucalyptus nitida forest over rainforest</i> WNR	Not threatened and adequately reserved 242,800ha remains 221,100ha reserved	Not threatened and adequately reserved 191,300ha remains 177,500ha reserved

⁵ DPIW 2006; FCF 2007.

⁶ CARSAG 2003

⁷ FCF 2007.

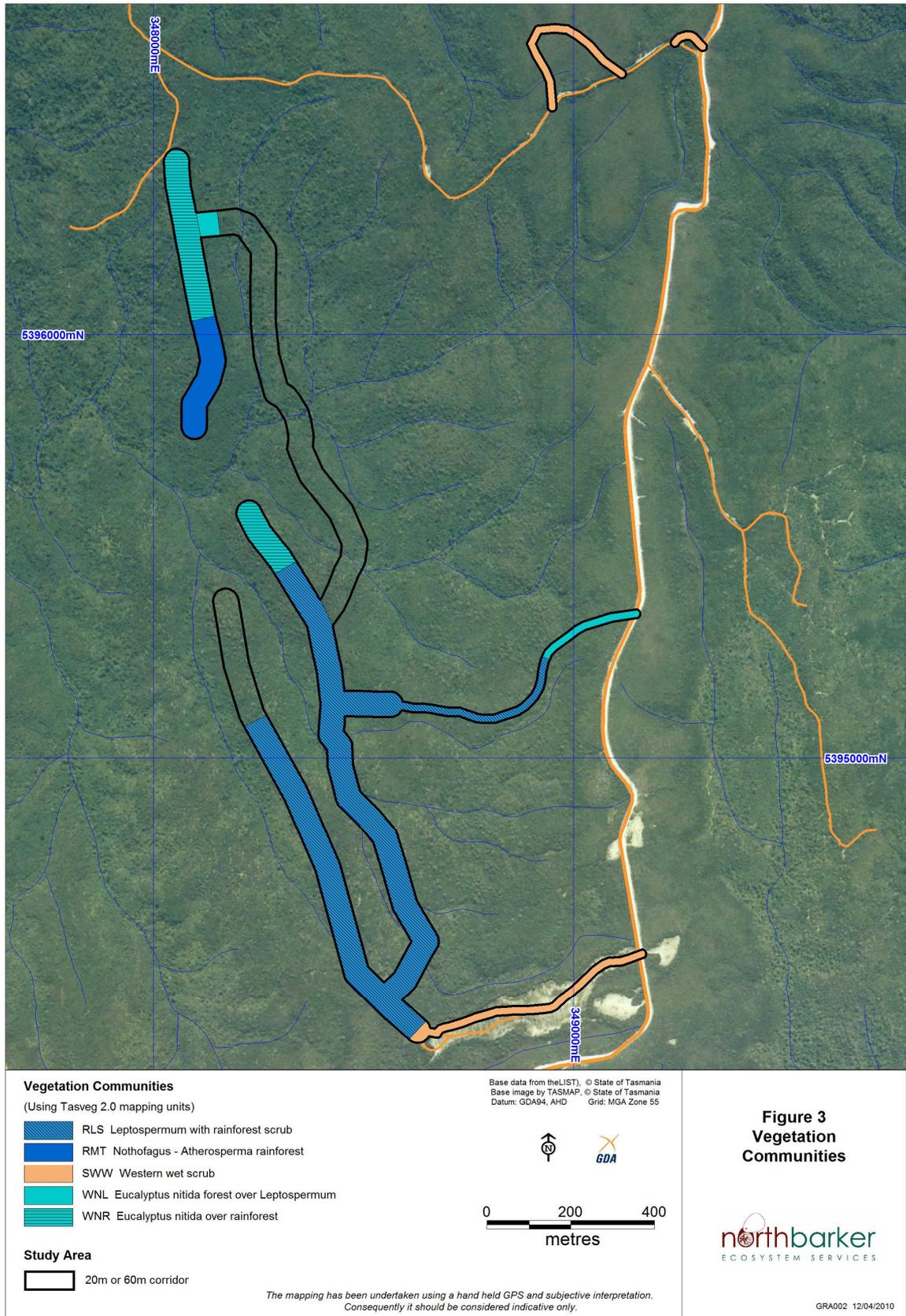


Figure 3 - Vegetation Communities



Plate 1 – Active den on Track 2.



Plate 2 – Active den on Track 2.



Plate 3 – Example of sand trap left at den entrances.



Plate 4 – Wet *Eucalyptus nitida* over rainforest (WNR).



Plate 5 – *Leptospermum* with rainforest scrub (RLS)



Plate 6 – Wet *Eucalyptus nitida* over *Leptospermum* (WNL)



Plate 7 – Wet *Eucalyptus nitida* over rainforest (WNR)



Plate 8 – Western wet scrub (SWW)

3.2 FAUNA HABITAT

The entire area surveyed is considered to be suitable fauna habitat for many different native fauna species. High quality Tasmanian devil denning habitat was less widespread across the survey area.

3.3 FAUNA OF CONSERVATION SIGNIFICANCE

A number of fauna species of conservation significance have been recorded in the vicinity of the site and those, along with species that may be expected to occur in suitable habitat, are shown in Table 2. A brief discussion is given to indicate the reasons why habitat is suitable or unsuitable for these species.

There is a high probability that the lease provides habitat for both the Tasmanian devil and spotted-tailed quoll. No sightings were made as the survey was conducted during daytime.

There is a low to very low probability that the five threatened avian species occur within the survey area due to a lack of suitable habitat being present. However, there have been recorded sightings of Wedge-tailed Eagles in the Savage River region, within 500m of the surveyed area⁸. These birds require large sheltered trees for nesting and prefer to nest on slopes where the canopy of the nesting tree sits below the ridge line. Mature, tall trees suitable for eagle nests were not observed in the surveyed area; however it is likely that the surveyed area is used as a foraging habitat for wedge-tailed eagles.

There is a moderate probability that Hydrobiid snails occur in streams within the survey area.

As the brief for this survey focused on Tasmanian devils, they will now be discussed in more detail.

Tasmanian devil

Tasmanian devils (*Sarcophilus harrisii*) prefer open forests and woodlands, whilst tall wet forests with dense undergrowth are less preferred. Open forests and woodlands are present in the surveyed area.

Male devils have 3-4 dens and females 2-3 dens, with one of these being her maternal den. Maternal dens are used for the life of the female and passed from one generation to the next. Young devils are in the maternal den from July to February. Destroying a den during this time will kill the young devils. Destroying a maternal den at any time will displace the female. Applying the precautionary principle, all dens are assumed to be maternal dens unless proved otherwise.

Suitable denning habitat for devils typically includes gentle slopes, open forests with low-moderate ground cover, rocky outcrops with overhangs, hollow logs and dead tree stumps. This type of habitat is considered to be high or moderate quality denning habitat for devils, and it occurs on approximately 1.4km of the routes surveyed (see Figure 4). The remainder of the survey area is considered to be low quality denning habitat, however devils will still forage and move through these areas, particularly in more open areas, including tracks and roads.

⁸ Natural Values Atlas 1/3/2010, Threatened Species Section, DPIPW.

The abundance of opportunities for dens such as hollow logs and dead tree stumps, and the presence of open tracks for easy night travel indicate that the surveyed area does contain suitable devil denning habitat. The presence of devils was confirmed along the western part of Track 2, with the observation of numerous devil scats. This is evidence that devils shelter and forage in the survey area.

All dens observed in the survey area were recorded and are shown on Figure 4. Dens with suitable characteristics for devils are labelled as either active or disused. Dens with unsuitable characteristics for devils are labelled as other dens. The location of high and moderate quality denning habitat for devils is also shown on Figure 4. No Tasmanian devil tracks were observed in the survey area.

The active dens that were observed in the survey area (see Plate 1 & 2), could not be confirmed that they were occupied by devils, even though they had suitable characteristics for devils. Sand traps (see Plate 3) were used overnight to confirm devil tracks, however due to heavy rain, tracks could not be confirmed. High denning habitat value for devils was found along track 2, 4, 5 and 7.

As at February 2010, DFTD had been confirmed across more than 60% of Tasmania. To date, no confirmed cases have been recorded west of the Murchison Highway⁹. Animals usually die within a few months of the cancer becoming visible. Tasmanian devils appear to succumb between two and three years of age, although some juveniles as young as one have also become infected. This is resulting in very young age-structured populations in which females have only one breeding event during their lifetime, whereas they would normally have three.

Table 2: Fauna species of conservation significance previously recorded, or which may potentially occur, within 5 km of the lease¹⁰.

Species	Status TSPA/EPBCA	Potential to occur	Observations and preferred habitat ¹¹
MAMMALS			
Tasmanian devil <i>Sarcophilus harrisii</i>	Endangered/ Endangered	PRESENT	Tasmanian devils inhabit forest, woodland and agricultural areas. During the day they shelter in caves, dens, burrows and thick scrub. There is suitable habitat in the many dens, logs and thick scrub in the lease area. The lease area also provides good foraging habitat with open forest floors in many areas. A high number of previous sightings in the area have been recorded. Dens and scats were found during the survey.
Spotted-tailed quoll <i>Dasyurus maculatus</i> <i>subsp. maculatus</i>	Rare/ Vulnerable	HIGH	This naturally rare forest-dweller most commonly inhabits wet forest but also occurs in dry forest. The survey area occurs within the range of core habitat, and provides extensive habitat for shelter, particularly in the wet <i>E. nitida</i> forest.

⁹ DPIPW (2010) The Science of Devil Facial Tumour Disease.

¹⁰ Natural Values Atlas Report 1/3/2010, Threatened Species Section, DPIPW.

¹¹ Bryant & Jackson 1999.

Species	Status TSPA/EPBCA	Potential to occur	Observations and preferred habitat
BIRDS			
Wedge-tailed eagle <i>Aquila audax fleayi</i>	Endangered/ Endangered	LOW	Requires large sheltered trees for nesting and prefers taller trees with canopies just below a ridgeline. Suitable trees were not found within the lease area, mainly due to a lack of mature, tall Eucalypt species.
Grey goshawk <i>Accipiter novaehollandiae</i>	Endangered/-	LOW	Inhabits large tracts of wet forest and requires old trees for nesting, particularly in mature blackwood forest. Suitable nesting trees were not found within the lease area. However, the surveyed area may provide suitable foraging habitat for this species.
Masked owl <i>Tyto novaehollandiae</i>	Endangered/-	LOW	Requires hollow bearing trees for nesting however mature trees were not commonly found on the site. It is possible that the area contains good foraging habitat for this species.
Azure kingfisher <i>Ceyx azurea</i>	Endangered/-	LOW	Prefers living in freshwater riparian zones. The surveyed area did not include streams large enough to support adequate prey, nor did it include significant riparian zones.
White-bellied sea eagle <i>Haliaeetus leucogaster</i>	Vulnerable/-	VERY LOW	Similar habitat requirements to the wedge-tailed eagle but is generally more tolerant of disturbance. Distance from the coast suggests this site is unlikely to be within sea eagle foraging range.
INVERTEBRATES			
Hydrobiid Snail <i>Beddomeia bowryensis</i>	Rare/-	MODERATE	These snails have very small geographic ranges, and appear to be very selective in their habitat. They have no obvious means of dispersal, either structurally or by physical vectors. They tend to live in sheltered and inaccessible parts of the stream channel, such as under rock slabs. Where streams exist within the surveyed area, moderately suitable habitat exists for this species.

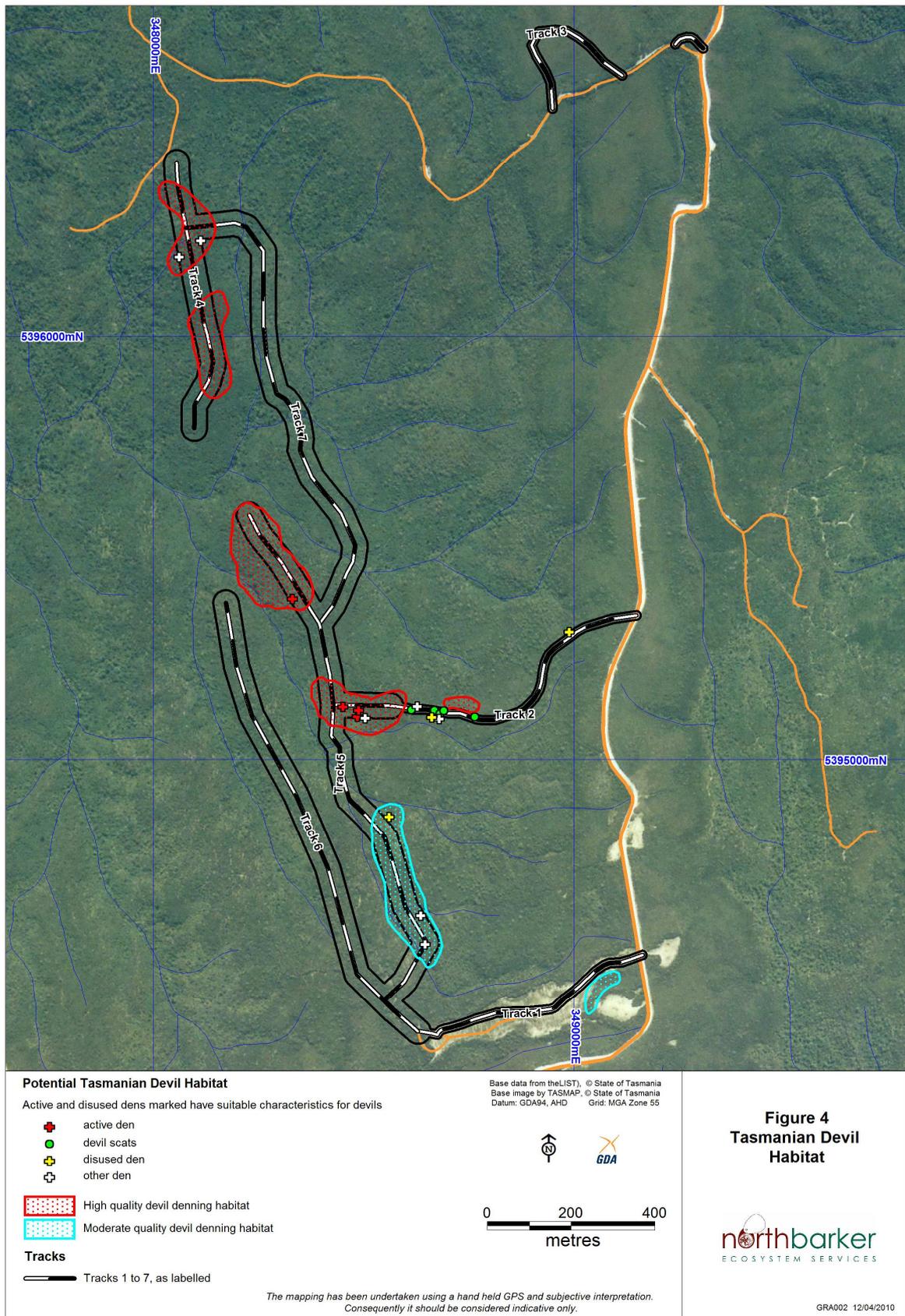


Figure 4 - Tasmanian Devil Habitat

4. ASSESSMENT OF IMPACT

The impact of the proposed new access routes on the native vegetation, flora and fauna values of the lease is dependent upon the final decision on location of routes. There will inevitably be some direct impact on the natural values of the survey area with the development of new access routes. In particular, a decision to develop an access road on Track 2 will likely destroy active dens and suitable Tasmanian devil denning habitat.

4.1 FAUNA HABITAT

High quality devil denning habitat within the survey area occurs on Tracks 2, 4, 5 and 7, while moderate quality devil denning habitat is found on Track 5 and adjacent to Track 1 (see Figure 4). This habitat takes in sections of *Leptospermum* with rainforest scrub (RLS), *Eucalyptus nitida* over rainforest (WNR) and *Nothofagus* – *Atherosperma* rainforest (RMT). This habitat will be impacted upon by the proposed re-opening of roads and construction of new roads.

4.2 VEGETATION COMMUNITIES

There will be impacts to the existing vegetation communities if the proposed road works are carried out, through vegetation clearance and tree removal. However, all five vegetation communities in the surveyed area are not considered to be threatened and are considered to be adequately reserved.

4.3 WEEDS AND PLANT PATHOGENS

Machinery and vehicles that enter the site increase the risk of introducing weeds and plant pathogens, which can have serious negative impacts on native vegetation communities and hence fauna habitat values. The root rot pathogen *Phytophthora cinnamomi* (PC) is of particular risk of being introduced to this site.

Where clearance of *Nothofagus cunninghamii* (myrtle) trees is necessary, there is a risk of causing myrtle wilt through this disturbance and through damage to the trees. Myrtle wilt is caused by the native die-back fungus *Chalara australis*, which enters trees through wounds in damaged trees.

5. MINIMISING IMPACT

5.1 FAUNA HABITAT

Retention and buffering of active devil dens can minimise the impact on the Tasmanian devil population. Areas where active dens were located should be protected from vegetation clearance with a buffer of at least 30 metres. This buffer is designed to protect the dens from increased noise and earth instability. Between July and February work within 50 metres of the dens should be restricted, particularly during the low light periods of dawn and dusk.

Proposed roads should be re-routed to avoid areas marked as high quality devil denning habitat. Where feasible moderate quality devil denning habitat should also be avoided.

Mature trees should be retained where practical.

5.2 VEGETATION COMMUNITIES

Best practice vegetation clearance practices should be used. This should include the use of the following suggested techniques;

- Restricting clearance to a prescribed corridor necessary for the road to be built.
- Minimise damage to adjacent vegetation and trees outside of the proposed road corridor.
- Tree felling should be carried out so that trees fall away from the retained trees and are removed from site.
- Soil from earthworks should not be pushed into adjacent native vegetation.

5.3 WEEDS AND PLANT PATHOGENS

A strategy to prevent the introduction of *Phytophthora* and weeds in the study area should include:

- Clean machinery before entering the site and ensure removal of all dirt, mud and plant material. Machinery should also be washed down prior to being used at another site.
- Road building materials should only be sourced from quarries outside the lease area if they are certified to be free of *Phytophthora* and weed seeds.
- Periodic reconnaissance surveys to be undertaken for *Phytophthora* and weeds in development areas.
- Site managers should have an awareness of best practise for *Phytophthora* and weed management. Basic training in identification and management of *Phytophthora* symptoms and weed species should be undertaken.
- The Contract for the proposed road works should include a requirement to conform to these guidelines for any earth moving machinery and vehicles that enter the site.

The spread of myrtle wilt can be mitigated by minimising damage to adjacent trees when felling myrtle. Felling should be carried out so that trees fall away from the retained trees and are removed from site.

6. LEGISLATIVE IMPLICATIONS

6.1 COMMONWEALTH *ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999 (EPBCA)*

Referral under this Act must take place where a proposed development is likely to have a significant impact on a matter of national environmental significance. Threatened species are listed as a matter of national environmental significance. Determination of “significant impact” is a key consideration. An activity is likely to have a significant impact on a vulnerable or threatened species if it reduces the area of occupancy of an important population, or if it modifies, destroys, removes or isolates the availability of habitat to the extent that the species is likely to decline. The EPBC Act is unlikely to apply to minor new works that will only affect a small number of Tasmanian devils in areas that are disease free¹².

Further detail of criteria can be found under the Significant Impact Guidelines 1.1 produced by the Commonwealth Government.

6.2 TASMANIAN *THREATENED SPECIES PROTECTION ACT 1995 (TSPA)*

In 2008, the Tasmanian devil was listed as endangered under the Tasmanian Threatened Species Protection Act. Under the TSP Act, it is an offence to disturb any listed protected species contrary to a land management agreement, without a permit. If, as recommended, measures to avoid and protect devil dens are implemented, there will not be a requirement for a permit under this act.

Appendix 2 outlines the implications of threatened species in regard to the TSPA.

¹² EPBC Act Policy Statement 3.6

7. SUMMARY OF RECOMMENDATIONS

1. To protect the Tasmanian devil denning habitat, all active dens should be protected within a 30 metre buffer zone. From July to February this zone should be extended to 50 metres with work time being restricted to avoid dawn and dusk.
2. Proposed roads should be re-routed to avoid areas marked as high quality devil denning habitat. Where feasible moderate quality devil denning habitat should also be avoided.
3. Mature trees should be retained where practical.
4. Best practice vegetation clearance practices should be used (see Section 5).
5. A weed and plant pathogen (for *Phytophthora* and myrtle wilt) management plan should be developed in accordance with recognised protocols to limit the risk of introducing or spreading them to currently uninfected sites (see Section 5).

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APPENDIX 1A : DEFINITIONS OF CONSERVATION VALUES OF PLANT AND ANIMAL SPECIES

SPECIES OF NATIONAL SIGNIFICANCE

Listed in Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*

The *EPBC Act* has six categories of threat status for species:

1. **Extinct** - If at a particular time there is no reasonable doubt that the last member of the species has died
2. **Extinct in the wild** - If it is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or If it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form
3. **Critically endangered** - If at a particular time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria
4. **Endangered** - If it is not critically endangered; and it is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria
5. **Vulnerable** - If at a particular time it is not critically endangered or endangered; and it is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
6. **Conservation dependent** - If, at that time, the species is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years

SPECIES OF STATE SIGNIFICANCE

Listed in Tasmanian *Threatened Species Protection Act 1995 (TSP Act)*

Threatened flora and fauna species in Tasmania are listed in Schedules 3 (extinct or endangered), 4 (vulnerable) or 5 (rare). These three categories are defined in Section 15 of the Act.

1. **Extinct** - If no occurrence of the taxon in the wild can be confirmed during the past 50 years
2. **Endangered** - If it is in danger of extinction because long-term survival is unlikely while the factors causing it to be endangered continue operating.
3. **Vulnerable** - If it is likely to become an endangered taxon while the factors causing it to be vulnerable continue operating.
4. **Rare** - If it has a small population in Tasmania that is not endangered or vulnerable but is at risk."

Species that have been nominated and approved by the Scientific Advisory Committee for listing in the Act

SPECIES OF REGIONAL OR GENERAL SIGNIFICANCE

The following definitions are from three publications: Flora Advisory Committee 1994, Vertebrate Advisory Committee 1994, Invertebrate Advisory Committee 1994

Flora only - Species listed as rare but not necessarily 'at risk' (**r3**)

Fauna only – Species requiring monitoring (**m**)

Both – Species of unknown risk status (**k**) in Tasmania, or thought to be uncommon within region, or a species having a declining range or populations within the area.

Species considered to be outside its normal range or of an unusual form as determined and justified in the body of the report.

Species identified in regional studies as being of conservation significance that are not listed in current legislation

Species that have been recognised but have not been formally described in a published journal that are thought to be significant as determined and justified in the body of the report.

Plant species that are not known to be reserved. To be so it must be known to exist in at least one secure Reserve. Secure reserves include reserves and parks requiring the approval of both Houses of Parliament for their revocation. They include: National Parks, Aboriginal Sites, Historic Sites, Nature Reserves, State Reserves, Game Reserves, Forest Reserves, Wellington Park, and insecure reserves in the World Heritage Area which is protected by international agreement under the World Heritage Convention.

APPENDIX 1B : DEFINITIONS OF CONSERVATION VALUES OF PLANT COMMUNITIES

PLANT COMMUNITY RESERVATION STATUS

Representativeness (Kirkpatrick *et al*, 1995 and North *et al*, 1998)

- **Well Reserved** - A viable area of a community is found within two or more reserves, or two or more viable areas are well separated within one reserve, or if all its known occurrences are within viable, secure reserves.
- **Poorly Reserved** - A community is found in one or more reserves, but it does not satisfy one of the conditions required to be considered well reserved.
- **Unreserved** - A community which is not known from any reserve

For this assessment, **reserves** include those areas considered to have the highest security of tenure.

CONSERVATION STATUS OF FOREST COMMUNITIES

The conservation status of communities was assessed based on the following criteria (PLUC 1996):

Rare communities

- **R1** - total area generally less than 10 000 ha
- **R2** - total area generally less than 1 000 ha
- **R3** - patch sizes generally less than 100 ha

Vulnerable communities

- **V1** - approaching greater than 70 % depletion
- **V2** - where threatening processes have caused **either** loss or significant decline in species that play a major role within the ecosystem **or** have caused a significant alteration to the ecosystem process

Endangered communities

- **E1** - distribution has contracted to less than 10 % of pre-1750 range
- **E2** - less than 10 % of pre-1750 area remains
- **E3** - 90 % of area is in small patches and is subject to threatening processes

REGIONAL CONSERVATION STATUS OF FOREST COMMUNITIES

The RFA Private Land Program and CARSAG have determined the conservation priority of forest communities using the Interim Bioregions (Version 5) of Tasmania. Communities have been placed into three categories of significance applying the Conservation status defined above for each community at a bioregional level and also considering 'old growth' values. This is useful for a range of users such as local government for natural resource management strategies, catchment planning, Bushcare, TASVEG 2000, community groups and land owners.

- Category 1 (**HIGH**) – Endangered communities, Vulnerable and Rare communities (old growth only)
- Category 2 (**MODERATE**) – Vulnerable and Rare communities; and other forest communities (old growth only)
- Category 3 (**LOW**) – Other forest communities.

In addition select communities have been ascribed higher priorities at a case by case basis where CARSAG have determined that the particular circumstances of a community require it to be of greater significance than the above method applies (CARSAG 2000)

CONSERVATION STATUS OF NON-FOREST COMMUNITIES

The conservation status of non-forest communities is currently being considered as part of the Tasmanian Vegetation Management Strategy (VMS) 1998 and will be determined on completion of the TASVEG 2000 Statewide vegetation mapping project. Interim Regional conservation priorities have been determined for the VMS (Tasmanian Vegetation Management Strategy 2000)

APPENDIX 2 : LEGISLATIVE IMPLICATIONS OF THREATENED SPECIES

TASMANIAN STATE LEGISLATION AFFECTING THREATENED SPECIES

Threatened Species Protection Act 1995

Threatened flora and fauna species in Tasmania are listed in Schedules 3 (endangered) and 4 (vulnerable) of the Threatened Species Protection Act, 1995. Rare species that are considered to be 'at risk' are listed in Schedule 5 of the Act. These three categories are defined in Section 15 of the Act.

1. "An extant taxon of native flora or fauna may be listed as **endangered** if it is in danger of extinction because long-term survival is unlikely while the factors causing it to be endangered continue operating.
2. A taxon of native flora or fauna may be listed as **vulnerable** if it is likely to become an endangered taxon while the factors causing it to be vulnerable continue operating.
3. A taxon of native flora or fauna may be listed as **rare** if it has a small population in Tasmania that is not endangered or vulnerable but is at risk."

The Act provides mechanisms for protecting these species from threatening processes the implementation of 'recovery plans', 'threat abatement plans', 'land management plans', public authority agreements', and 'interim protection orders'.

Section 51 (a) of the TSPA states that: "A person must not knowingly, without a permit - take, trade in, keep or process any listed flora or fauna". The Act defines 'take' as including: "kill, injure, catch, damage, destroy and collect. A land manager is therefore required to obtain a permit from the Tasmanian Department of Primary Industries, Water and Environment (DPIWE) to carry out management that may adversely affect any of the species listed in the Act

Commonwealth of Australia Legislation Affecting Threatened Species

Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act establishes a process for assessing actions that are likely to have impacts of *national environmental significance*. Such impacts include World Heritage Areas, RAMSAR Wetland sites of international importance, migratory species protected under international agreements, nuclear actions, the Commonwealth marine environment and **nationally threatened species and communities**.

Threatened species are defined in several categories:

1. Extinct

- If at a particular time there is no reasonable doubt that the last member of the species has died

2. Extinct in the wild

- If it is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or
- If it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form

3. Critically endangered

- If at a particular time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria

4. Endangered

- If it is not critically endangered; and it is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria

5. Vulnerable

- If at a particular time it is not critically endangered or endangered; and it is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.

6. Conservation dependent

- If, at that time, the species is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years

An action that is likely to affect species that are listed in any of the above categories may require ministerial approval unless the Commonwealth Environment Minister has granted an exemption. The Act establishes a **referral process** to Environment Australia to determine whether an action requires a formal **approval** and thus would be required to proceed through the **assessment and approval process**.

A referral must provide sufficient information to allow the Minister to make a decision. The Minister is then required to make a decision within 20 business days of the referral. The Minister may decide an approval is not necessary if the action is taken in a specified manner. The action may not require approval but may require a **permit** if undertaken on Commonwealth land. If an approval is required then an **environmental assessment** must be carried out. In such instances the environmental assessment approach will be determined by the Minister and may vary from preliminary documentation to a full public inquiry depending on the scale and complexity of the impact.

APPENDIX 3: PLANT SPECIES LIST

Status codes:

ORIGIN	NATIONAL SCHEDULE	STATE SCHEDULE
i - introduced	EPBC Act 1999	TSP Act 1995
d - declared weed WM Act	C - critically endangered	e - endangered
en - endemic to Tasmania	E - endangered	v - vulnerable
t - within Australia, occurs only in	V - vulnerable	r - rare

Sites:

1	DAC - E448780, N5416700	26/04/2008	Cassandra Strain & Laurel Wadell
2	WOB - E448600, N5416520	26/04/2008	Cassandra Strain & Laurel Wadell

Site	Name	Common name	Status
DICOTYLEDONAE			
APIACEAE			
2	<i>Xanthosia pilosa</i>	woolly crossherb	
ASTERACEAE			
2	<i>Bedfordia salicina</i>	tasmanian blanketleaf	en
1 2	<i>Cassinia aculeata</i>	dollybush	
1	<i>Cirsium vulgare</i>	spear thistle	i
1	<i>Hypochoeris radicata</i>	rough catsear	i
2	<i>Olearia argophylla</i>	musk daisybush	
1 2	<i>Olearia lirata</i>	forest daisybush	
1	<i>Olearia stellulata</i>	sawleaf daisybush	
1	<i>Ozothamnus sp.</i>	everlastingbush	
2	<i>Senecio linearifolius var. linearifolius</i>	common fireweed groundsel	
2	<i>Vellereophyton dealbatum</i>	white cudweed	i
CASUARINACEAE			
1	<i>Allocasuarina monilifera</i>	necklace sheoak	en
EPACRIDACEAE			
1	<i>Epacris impressa</i>	common heath	
1	<i>Leucopogon collinus</i>	white beardheath	

1	<i>Monotoca glauca</i>	goldey wood	
	EUPHORBIACEAE		
1	<i>Amperea xiphoclada</i>	broom spurge	
	FABACEAE		
1 2	<i>Oxylobium ellipticum</i>	golden shaggypea	
	GENTIANACEAE		
2	<i>Centaurium erythraea</i>	common centaury	i
	MIMOSACEAE		
1 2	<i>Acacia dealbata subsp. dealbata</i>	silver wattle	
2	<i>Acacia melanoxylon</i>	blackwood	
	MYRTACEAE		
1	<i>Eucalyptus amygdalina</i>	black peppermint	en
1 2	<i>Eucalyptus obliqua</i>	stringybark	
2	<i>Eucalyptus regnans</i>	giant ash	
1	<i>Leptospermum glaucescens</i>	smoky teatree	en
1	<i>Leptospermum scoparium</i>	common tea-tree	
	POLYGONACEAE		
1	<i>Acetosella vulgaris</i>	sheep sorrel	i
	PROTEACEAE		
1	<i>Banksia marginata</i>	silver banksia	
	RANUNCULACEAE		
2	<i>Clematis aristata</i>	mountain clematis	
	RHAMNACEAE		
2	<i>Pomaderris apetala</i>	common dogwood	
1	<i>Pomaderris elliptica</i>	yellow dogwood	
	ROSACEAE		
1	<i>Acaena novae-zelandiae</i>	common buzzy	
1	<i>Rubus fruticosus</i>	blackberry, bramble	d
	SCROPHULARIACEAE		
1	<i>Digitalis purpurea</i>	foxglove	i
	SOLANACEAE		
1	<i>Solanum species</i>	nightshade	i
	STYLIDIACEAE		
1	<i>Stylidium graminifolium</i>	narrowleaf triggerplant	

THYMELAEACEAE		
1	<i>Pimelea linifolia subsp. linifolia</i>	slender riceflower
MONOCOTYLEDONAE		
CYPERACEAE		
2	<i>Carex appressa</i>	tall sedge
JUNCACEAE		
1	<i>Juncus australis</i>	southern rush
1	<i>Luzula sp.</i>	luzula
ORCHIDACEAE		
1	<i>Acianthus sp.</i>	mosquito orchid
POACEAE		
1	<i>Deyeuxia sp.</i>	bent grass
1	<i>Lachnagrostis sp.</i>	blown grass
PTERIDOPHYTA		
ASPIDIACEAE		
1 2	<i>Polystichum proliferum</i>	mother shieldfern
BLECHNACEAE		
1 2	<i>Blechnum nudum</i>	fishbone waterfern
1	<i>Blechnum wattsii</i>	hard waterfern
DENNSTAEDTIACEAE		
2	<i>Hypolepis rugosula</i>	ruddy groundfern
1	<i>Pteridium esculentum</i>	bracken
DICKSONIACEAE		
2	<i>Dicksonia antarctica</i>	soft treefern
GLEICHENIACEAE		
2	<i>Gleichenia dicarpa</i>	pouched coralfern
PTERIDACEAE		
2	<i>Pteris tremula</i>	tender brake