Fourfoot Road Geeveston: Environmental Management Plan

Huon Valley Council Natural Resource Management Unit

V3.1

June 2021

1. Purpose of this management plan

An environmental management plan (EMP) is a technical document which describes what is on a site, what needs to be done to maintain and improve the natural and cultural values, how these actions will be funded, and who is responsible for implementing them. This EMP focuses on two Council owned properties in the Geeveston area. The plan details existing natural and cultural values and outlines the approach to managing these, with prescribed monitoring and reviews to ensure the EMP is achieving the set objectives.

2. Site Characteristics

Huon Valley Council (HVC) owns three properties (33854/1, 84488/1) which make up PID 5250527 and 21211/3 referenced as PID 7175970, unofficially known as the 'Fourfoot Road properties'. All three lots are zoned Rural Resource, and are subject to the Biodiversity, Waterway and Coastal, Landslide Hazard, Bushfire Prone, and Scenic Landscape codes. 33854/1 and 84488/1 are entirely covered by native vegetation while 21211/3 is predominantly improved pasture with some large paddock trees and a section of native vegetation in the south western corner that links with vegetation on 33854/1 and 84488/1. Vehicular access is via an easement off Fourfoot Road. There is an informal footpath that skirts the eastern edge of 84488/1 while the recently completed 'Geeveston to Port Huon' walking track follows the Kermandie River along the south eastern boundary of 21211/3. A portion of 33854/1 was quarried with an old access track leading to a pit with scree and exposed rock walls.

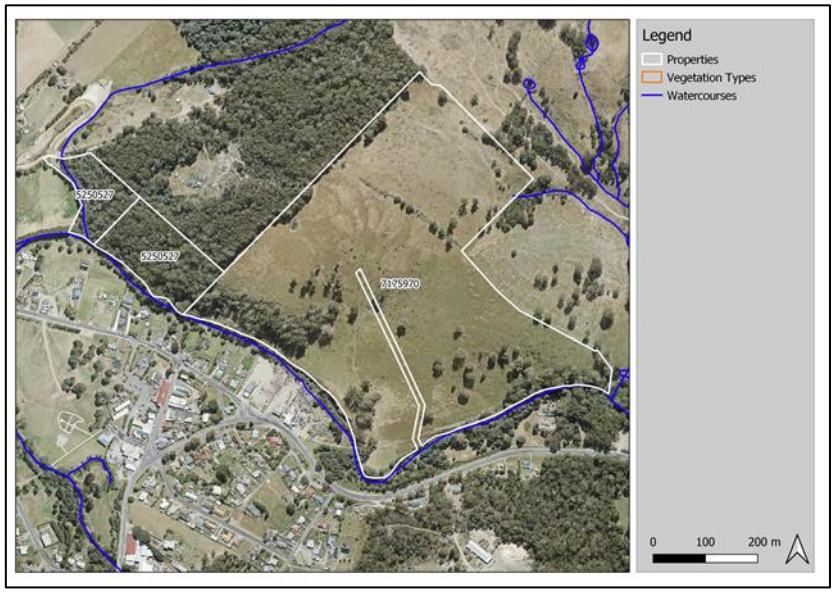

Figure 1: Lots comprising PID 5250527 and PID 7175970.

The total area of properties that NRM proposes to manage is approximately 10 ha, almost all of this being native vegetation. This is part of contiguous vegetation patch of 27.5 ha and is one of the largest remaining native vegetation patches in the local area (the closest neighbouring vegetation patch is over 1 km to the east and 700 m to the south). These properties therefore provide important habitat in an area which has had extensive historical clearance.

TasVeg 4.0 mapping shows three main vegetation types within or directly adjacent to the properties (figure x):

Vegetation community	State status*	Federal status+	Identification notes
Eucalyptus viminalis wet forest (WVI)	Threatened	Nominated as critically endangered	*Eucalyptus viminalis* dominated canopy, mix of small and broad leaf understory species.
Eucalyptus ovata forest and woodland (DOV)	Threatened	Critically endangered	Dominated by *Eucalyptus ovata* and /or *E. viminalis* with a shrubby understory. Preferential to damp soils.
Eucalytpus obliqua dry forest (DOB)	Not listed	Not listed	Dominated by *Eucalyptus obliqua* with a diverse shrub understory but sparse ground cover.

*Nature Conservation Act 2002

+ Environmental Protection and Biodiversity Conservation Act 1999

The floral diversity of each of these vegetation communities ranges from fairly limited (DOB) to diverse (WVI and DOV). Areas of anthropogenic disturbance, especially within the quarry and surrounds, have a modified species composition which is dominated by *Acacia dealbata* and similar generalist and pioneer species.

Figure 2: vegetation communities contained within and *adjacent to the site with selected imagery* to show vegetation structure

The site has not had a recorded fire event in recent history and appears to not have been impacted on by the large scale 1967 bushfires (Land Tasmania Fire History dataset). None of the large *Eucalyptus* trees showed evidence of fire scares which supports the lack of fire records.

Camera trap sampling revealed a good population of pademelon and brushtail possum and it is very likely that the properties are habitat for a range of threatened fauna including eastern barred bandicoot, Tasmanian devils, masked owl, grey goshawk, swift parrot, and eastern quoll. *Eucalyptus ovata* is one of two food plants for swift parrots, adding to the conservation importance of the site. There is a den/burrow located within a pile of wood and rock in the south east portion of 84488/1 with evidence of recent use. Given the fragmented nature of natural areas in this region, this

burrow and the broader rock and wood pile, should be considered a key habitat feature. Camera traps have been positioned to try and determine which species are using it (often multiple species will share a single burrow).

The Kermandie River flows along the south western boundary of the site. The river and adjoining banks are subject to regular flooding. The NRM Unit conducts water sampling at a stormwater outflow marked on figure 3. Sampling focuses on nutrient loads, which can cause algal blooms and encourage weed infestation of riparian zones, and petroleum hydrocarbons, which can kill aquatic macro and micro fauna and flora. Management of stormwater contaminants will be directly beneficial to the management of the Fourfoot Road properties.

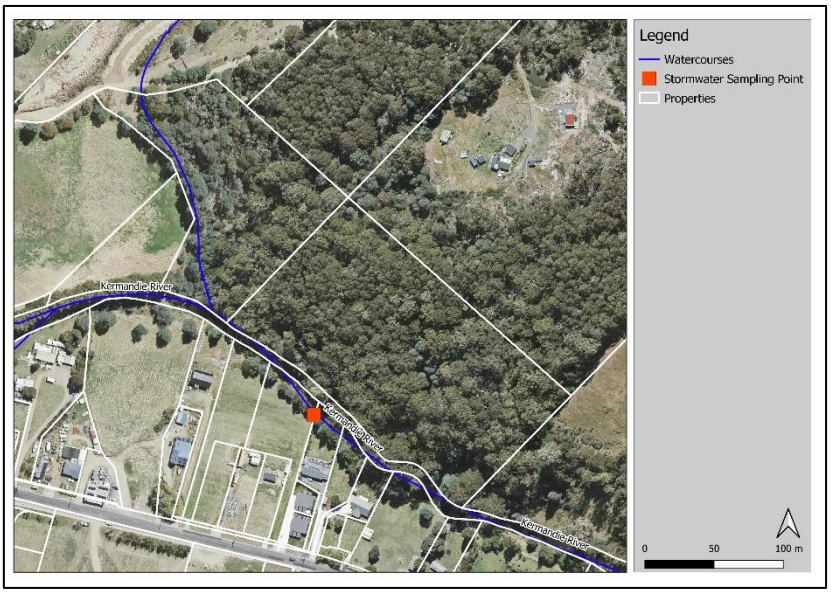

Figure 3: Watercourse and stormwater sampling points relevant to the site

Management Zones and Objectives

Any management intervention should aim to maintain and improve ecosystem integrity. Different areas of the site require different interventions. The site has been split into management zones based on shared management requirements and habitat types. The features of each zone are briefly described and management actions detailed.

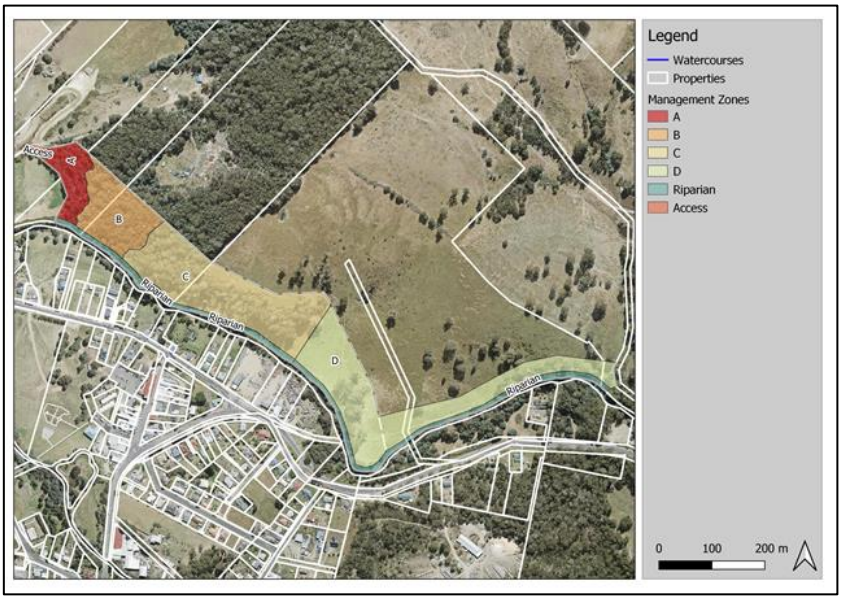

Figure 4: Fourfoot Road management zones

Zone A

Zone A encompasses an area which was historically operated as a quarry. There is a clear distinction between this and other zones as the dominant canopy tree is *Acacia dealbata*, an indicator species of disturbance. The under story floral diversity is varied with patches of bare ground near areas of weed infestation. Weed species are mostly *Ilex aquifolium* (holly) and *Crataegus monogyna* (hawthorn). Debris from the quarry operation are still present at the site.

Figure 5: Holly (a) and solid waste (b) found in zone A

Zone Management objectives:

- Work towards improving the floral diversity and ecosystem resilience of this area so that it provides an ecological buffer for neighbouring vegetation communities.
- Aim to recreate *Eucalyptus viminalis* wet forest and *Eucalyptus ovata* forest and woodland, where suitable.
- Explore opportunities to utilise this area for environmental/cultural education activities.
- Control all declared and serious environmental weeds.

Management actions for this zone are:

1. Control holly and hawthorn.
2. Remove solid waste and debris from quarry site (excluding cultural relics).
3. Undertake focused revegetation of ground cover and understory, especially in areas where weeds have been removed.
4. Monitor establishment of revegetated plants and potentially thin out Acacia dealbata to open the canopy and reduce competitive pressure on floral recruitment.

Zone B

Zone B is predominantly covered by DOB with some DOV on the lower slopes. The canopy is dominated by Eucalyptus obliqua with *E. ovata* and *E. viminalis* sub dominant in sections. The mid story plants include *Monotoca glauca*, *Acacia verticillata*, and *Cassinia aculeata*, while the ground level is sparsely populated (indicative of this vegetation type) with a few herbs and ferns such as *Senecio linearifolius, Pteridium esculentum* and *Astroloma humifusum*. Limited ground cover may be a product of over browsing and can be confirmed by erecting browsing exclusion plots. Some of the gully lines have minor erosion. *Ilex aquifolium* (holly) is the primary weed of concern for this zone.

Zone Management objectives:

- Improve the understory floral diversity of *Eucalyptus ovata* forest and woodland and *Eucalyptus obliqua* dry forest.
- Rehabilitate areas of existing erosion.
- Control all declared and serious environmental weeds.

Management Actions:

1. Control holly

2. Use ‘soft’ interventions, such as cut weed brush and or hay bails to manage sites of minor erosion.
3. Erect browsing exclusion plots to determine if browsing pressure is lowering ground cover diversity.
4. Explore revegetation opportunities in areas of erosion and bare soil.

Zone C

Zone C is predominantly covered by threatened WVI. The dominant canopy tree is *Eucalyptus viminalis* with scattered *E. ovata* closer to the river. The understory vegetation is diverse with a range of shrubs, ferns and small trees (e.g. *Acacia dealbata*, *Dicksonia antartica*, *Gahnia grandis*, *Coprosma quadrifida*). There is good recruitment of *E. viminalis* in the understory, an indicator of a healthy ecosystem. There are a range of weed species, with *Rubus* sp. (blackberry) and *Ilex aquifolium* (holly) the most common. Scattered patches of *Ulex europaeus* (gorse) and *Erica lusitanica* (Spanish Heath) are located close to the informal track.

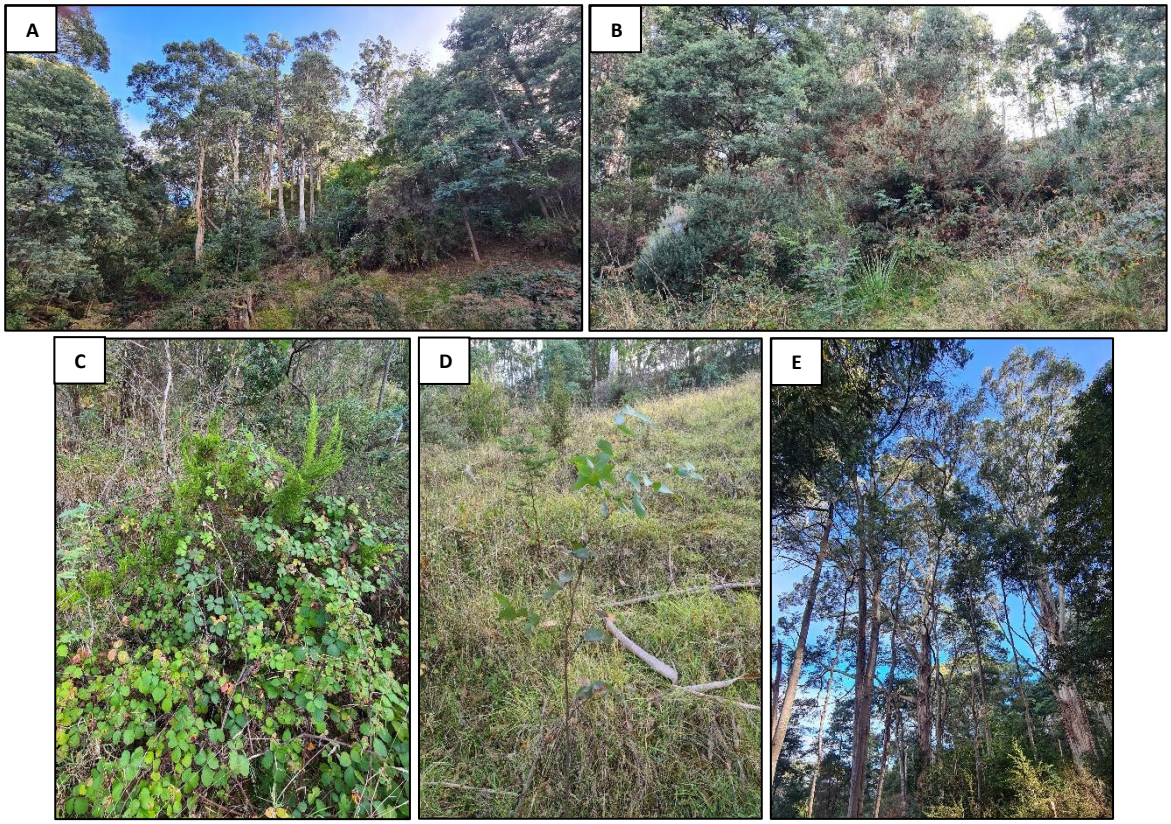

Figure 6: Features found within zone C including (a and e) *Eucalyptus viminalis* canopy, (b) gorse, (c) blackberry and Spanish heath, (d) young *E. viminalis* seedlings.

Zone management objectives:

- Maintain the level of floral diversity
- Limit anthropogenic disturbance and threats to high value ecological features.
- Control all declared and serious environmental weeds.

As this zone is in a good climax state, limited management actions are required:

1. Control *Rubus* sp. (blackberry), *Ilex aquifolium* (holly), *Ulex europaeus* (gorse), and *Erica lusitanica* (Spanish Heath).
2. Assess the need to revegetate weed control areas with locally native species.

Zone D

Largely covered by pasture and native grasses with a patch large *Eucalyptus ovata* and *Eucalyptus viminalis*. These large trees provide foraging habitat for critically endangered swift parrot and have the potential to contain hollows that could be used by swift parrot and vulnerable masked owl. A dead vulnerable eastern barred bandicoot was found in this zone indicating that the pasture grass area is likely a foraging site for this species. There are a range of pasture associated weeds (e.g. thistle spp. and Spanish Heath). The lower lying areas have several *E. ovata* saplings emerging and the area may return to a representative form of critically endangered *E. ovata* forest and woodland.

Figure 7: landscape view of Zone D with the large Eucalyptus spp. in the far right

Zone management objectives:

- Improve floral biodiversity and encourage key species recruitment.
- Limit anthropogenic disturbance and threats to high value ecological features.
- Control all declared and serious environmental weeds.

Management actions required:

1. Replace pasture grass with native grasses and shrubs.
2. Encourage further recruitment of *Eucalyptus ovata* and *E. ovata* forest and woodland associated species.
3. Control *Rubus* sp. (blackberry), *Ilex aquifolium* (holly), *Ulex europaeus* (gorse), and *Erica lusitanica* (Spanish Heath).
4. Assess the need to revegetate weed control areas with locally native species.

Riparian Zone

A riparian area is land immediately adjacent to a watercourse or wetland which is often characterised as having fertile alluvial soils and a unique assemblage of flora adapted to periodic inundation and flooding disturbance. Flooding disturbance can facilitate weed infestation and erosion. Sections of this riparian zone have blackberry and Spanish Heath infestations but otherwise are in good condition with no significant erosion.

Figure 8: A section of riparian zone showing intact native vegetation and limited erosion.

Zone management objectives:

- Maintain riparian and in stream habitat condition.
- Control all declared and serious environmental weeds.

Management actions:

1. Control *Rubus* sp. (blackberry) and Spanish heath patches.
2. Regularly monitor the riverbanks for any signs of erosion or weed infestation
3. Review storm water monitoring results and the potential impacts they may have on the riparian zone.

Access Zone

The access zone is level area where vehicles can park. There are piles of stone and soil blocking the trail down to the quarry. Hawthorn has been planted either side of the track.

Zone management objectives:

- Formalise the parking area and remove unsightly rubble and solid waste.
- Control all declared and serious environmental weeds.

Management Actions:

1. Control hawthorn
2. Assess the feasibility of replacing stone piles with bollards or rocks

3. Resource implications

The Natural Resource Management Unit will be responsible for all management actions and will draw on a range of existing resources and programs to achieve these. The table below broadly outlines each action type, the program it will be drawn from and whether the associated cost can be covered by existing budget or requires additional funding.

Management Action	Existing NRM program alignment	Estimated cost pa	Financial source
Weed management	Priority Weed Management Program	$2200 pa for the 1st year. $1000 for the following 2 years.	Existing NRM budget with supplementary grant funding when available
Revegetation	Plant Provision program	$500 pa for the first 3 years.	Existing NRM budget
Erosion control	Actions to be carried out using material from weed management actions. No specific program	No additional cost, will be included in weed management actions	No cost
Browsing exclusion plots	No specific program. Materials for this are available to the NRM Unit	No cost as materials already available.	No cost

Initial discussions have been held with the local Kermandie Landcare group who are interested in assisting where they can. This may lower management costs.

4. Bushfire Risk Management

An important consideration of reserve management is managing and mitigating the risk of bushfire. The level of active management should be informed by the surrounding land uses and their vulnerability.

In the case of Fourfoot Road, the surrounding land uses are predominantly pasture (north, north west, east, and south east boundaries) while the southern boundary is buffered by the Kermandie River and the rocky riparian area either side of it. The northern neighbouring property has a residential dwelling which is surrounded by native vegetation that connects with the Fourfoot Road properties. The property has an endorsed bushfire hazard management plan (BHMP) which was designed to a BAL-12.5 specification. The property has a maintained bushfire hazard management area (an area where fuel loads are kept to a minimum) of between 35 and 100 m. These distances are significantly more than

what is required by their BHMP and correspond with BAL 19 and 29 in table 2.4.2 of AS 3959-2009 'Construction of buildings in bushfire prone areas'.

Another mitigating factor is that most of the vegetation on the properties is wet forest with a broad leaf understory. Wet forest is likely to be more resistant to ember derived ignition and should burn at a lower intensity. Those sections which are not wet forest have sparse understory with low fuel loads. The fact that there are no historical records of fire events for the vegetation patch supports the notion of reduced risk of ignition.

While there is only one adjoining property with a dwelling with an endorsed BHMP and wet forest is less likely to ignite and burn intensely, there are still mitigating actions that can be implemented. These are;

1. No revegetation activities or browsing exclusion plots will be located within 15 meters of the property boundary of PID 2586906. This will maintain the existing understory low fuel load and natural fire buffer.
2. Periodically engage Tasmanian Fire Service (TFS) to review bushfire management and risk assessment. Initial discussions with TFS suggest that, while fuel reduction is likely not required, they can assist with this if required (at no significant cost to Council). Fuel reduction activities must be aligned with ecological management activities to ensure there is no unintended negative impact on natural values.
3. Through the planning and compliance process, ensure that property owners of PID 2586906 continue to comply with their endorsed BHMP.

5. Monitoring and Review

The success of a management plan can only be determined by regular monitoring of actions and the outcomes achieved from these. Monitoring and being adaptive to the findings allows for management of natural areas to be responsive to changes in ecosystem condition, external pressures, and conservation priorities. The approach of developing

management plans that are informed and amended by regular monitoring and reviews is termed 'adaptive management' and is illustrated in figure 6 below.

Figure 9*:* An illustration of adaptive management approach (adapted from CSIRO Marine and Atmospheric Research).

To ensure that this EMP is accurate and responds to site conditions, the following monitoring actions are proposed:

1. Develop a photo point monitoring program with a focus on revegetation, weed management, and browser exclusion areas to determine success of these actions.
2. Regularly undertake motion camera monitoring to assess presence of fauna and habitat use.
3. Undertake three yearly reviews of this management plan to assess applicability to site characteristics and make any necessary changes to ensure relevance.

6. Way forward

A concise yearly work schedule will be developed that outlines sub actions, where they will be carried out, and when they will be initiated and completed by. Actions will be reviewed against this schedule at the end of the yearly management cycle.