



9 Valleys Wildlife Corridor Project

Property Site Inspection

1611 Martindale Road, Martindale

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1 Introduction

The 9 Valley Wildlife Trail encompasses Jerry's Plains, Martindale and Sandy Hollow areas. These sites have been recognised for their significant ecological values and identified management requirements to improve condition, connectivity and resilience of native vegetation communities and their habitat.

The 9 Valleys Project engaged directly with the Martindale community through an information session, site assessments and a technical workshop to identify existing biodiversity values and opportunities to retain, protect and enhance these values through suitable on-ground activities to improve landscape connectivity across the Hunter Valley.

A small number of properties participated in site assessments to identify biodiversity values present and opportunities to connect vegetation patches internally and to neighboring properties.

A site assessment was undertaken of 1611 Martindale Road which involved a rapid vegetation survey, to identify and confirm vegetation communities present, while also gathering the following information:

- Habitat features including presence of habitat trees, fallen logs, burrows etc.
- Location of all identified vegetation communities, habitat features, potential areas for restoration planting, potential regeneration areas
- Land management issues including weed infestations, pest species
- Location of appropriate tree planting sites to connect contiguous vegetation patches and landscapes
- Areas suitable for restoration i.e. broad scale restoration to increase native grass species diversity
- Endemic tree species and appropriate spacing of trees (based on the existing vegetation communities) to be used in rehabilitation works.

It should be noted that the site assessment was conducted as a "rapid assessment" and was not intended to identify and map all landscape and biodiversity features. The assessment was designed to provide a snap shot of the key biodiversity values to inform advice on restoration and connectivity potential.

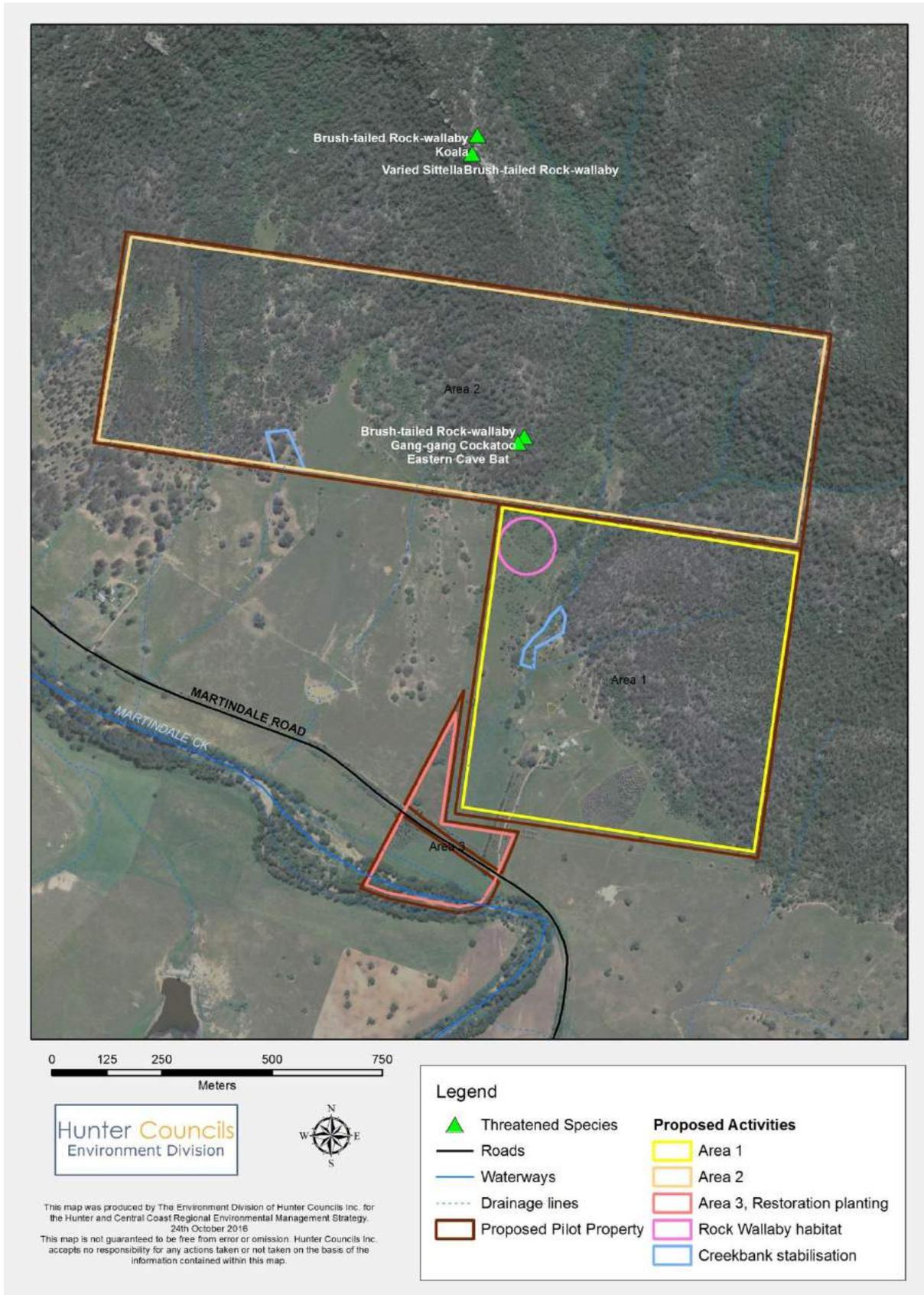
This report details advice based on the funding's of the site assessment.

2 General Property Description

The property is approximately 137 hectares and is made up of 3 land parcels. The two larger land parcels contain approximately 80% of native vegetation in good condition. Native trees have been planted along the southern side of the property and there are patches of regenerating native vegetation along the western side of the property. The cleared or modified areas can be described as gently undulating and the bushland generally occurs on steep rugged slopes. The property contains a number of different Plant Community Types, which currently have not been mapped. There are also a number of tributaries that run through the property and feed into Martindale Creek.

The third smaller land parcel covers an area of 7 hectares encompassing Martindale Creek, which is located on the southern side of Martindale Road. Apart from the riparian zone most of this land parcel has been cleared.

The extent of site assessment focussed on the cleared areas commencing north of the existing dwelling and along the periphery of the bushland, and of two tributaries to the north and north-west of the existing property.



Map 1: Proposed on-ground Activities

3 Property Inspection Method

Date of Inspection

The inspection was undertaken with the landowner on the 8TH September 2016

Duration of Inspection: 2.0 hours.

Inspection Area

The following areas of the property were inspected:

- Drainage line 1 – Area 1
- Rock Wallaby Habitat Area 2
- Drainage line 2 – Area 3

NB: Hunter Local Land Services have undertaken a detailed vegetation survey of the property prior to the site assessment. Therefore vegetation type condition and extent was only noted during the 9 Valleys site assessment included the dominant, tree, shrub and ground cover layers.

The property was inspected for the following:

Habitat Features

- Tree hollows, fallen logs and dead stags
- Assess condition and structure of the riparian zone.

Management issues

- Evidence of pest species
- Soil Erosion
- Priority weed infestations.

Potential Landscape connectivity and restoration opportunities

- Existing and potential natural regeneration areas (A1 & A3)
- Potential restoration areas to improve landscape connectivity.

Overall focus of the Site Assessment

- Provide advice on improving the condition of Area 1 and Area 3
- Identify appropriate locations for the creation of connectivity stepping stones and shelter belts
- Inspect Brush-tailed Rock Wallaby habitat and investigate local Fox and Wild Dog control programs.

4 Outcomes

4.1 Native Vegetation

Rapid vegetation surveys were not undertaken on the property as Hunter Local Land Services recently completed detailed vegetation surveys of the entire property (the results of the surveys have not yet been released). A general inspection was conducted instead.

Based on general desktop analysis of aerial photography there appears to be at least 5-6 native vegetation communities present on the property. This provides a good indication that the property contains significant biodiversity values and provides habitat for a diverse range of flora and fauna species, including threatened and endangered species and populations.

Dominant tree species were noted within Area 3 including *Eucalyptus dawsonii*, *Eucalyptus crebra* and *Allocasuarina leuhmannii*. This site contains species consistent with Hunter Valley Foothills Slatygum Woodland in the Sydney Basin Bioregion – vulnerable ecological community listing under the Threatened Species Conservation Act.

4.2 Habitat Features

Tree Hollows

A number of mature trees containing hollows providing suitable habitat for a range of birds and arboreal fauna were identified on the site.

The property is predominantly vegetated containing good native tree species diversity of mixed age classes, indicating that the vegetation is in good condition, providing habitat for a diverse range of native fauna including woodland birds, micro-bats and arboreal mammals. The site contains mature *Eucalyptus moluccana* (Grey-box), *Eucalyptus dawsonii* (Slaty Gum), *Allocasuarina spp.* and *Eucalyptus crebra* (Narrow-leafed Ironbark), particularly the north western side of the property in Area 3.

Fallen logs and Dead Stags

Fallen Logs, and debris was evident throughout the property, which also indicates that there has been limited clearing of native vegetation undertaken on the property. Woody debris and fallen logs provide important habitat for a range reptiles and ground dwelling mammals.

Fallen logs and debris were also evident within the riparian zone along Drainage line 2 (Area 3). There is minimal vegetation along sections of the riparian zone. *Eucalyptus dawsonii* is dominant in this area and naturally generates woody excessive woody debris and can potentially prevent other species from recruiting.

The landowners are in the process of implementing a 15 year Property Vegetation Plan issued by Hunter Local Land Services. Area 3 is part of the PVP area, which is also fenced.

As one of the activities, the landowner is involved in thinning out *Eucalyptus dawsonii*, to encourage native regeneration of other species. Long-term monitoring of this site is also being undertaken.

Known Brush-tailed Wallaby habitat

Approximately 500m north of the existing dwelling - there is known open grassy area which is suitable foraging habitat for Brush-tailed Rock Wallabies. Brush-tailed Rock Wallabies retreat to the rugged and rocky escarpment areas to the north and north east of the property, where they have been recorded on the Office and Environment Heritage Wildlife database.



Photograph 1 - Area 3 – Riparian Zone, evidence of woody debris and fallen logs suitable habitat for ground dwelling mammals.

4.3 Threatened Flora and Fauna

No threatened flora or fauna species were recorded during the site inspection. The Office of Environment & Heritage (OEH) wildlife database (accessed November 2016) has records of a number of threatened fauna species located on both the property and the adjacent Wollemi National Park to the north, including:

Private Property

- Eastern Cave Bat
- Gang Gang Cockatoo

Threatened Species records just to the north of the property on the adjacent Wollemi National Park include: (Refer to Map 2)

- Brush-tailed Rock Wallaby
- Eastern Cave Bat
- Koala
- Varied Sitella
- Gang Gang Cockatoo

4.4 Management Issues

Noxious and Environmental Weeds

No high priority noxious or environmental weeds were identified on the property. Along Martindale Creek, Blue Heliotrope is the only weed of concern and has been regularly controlled and maintained by the landowner.

Pest Animals

European Red Fox and Wild Dog have been noted on site and are believed to be the cause of a decline in the numbers of Brush-tailed Rock Wallabies over the past few years. The landowner has applied for partnerships grant through the Hunter Local Land Services to undertake monitoring of Brush-tailed Rock Wallabies on the property and also on the adjacent National Park. This is to ascertain whether Wild Dogs of European Red Foxes are impacting on the Wallabies and other native species.

Creek Bank Erosion

Drainage Line 1 – (Area 1) Stream Order 1 – Ephemeral

This site has been experiencing continued gully erosion of the drainage line following severe rain or flooding events. The gully erosion increases every time there is rain event. As a result the water flow and volume also seems to be increasing with each event. There is concern that the embankment upstream will eventually collapse.



Photograph 2 – Evidence of gully erosion



Photograph 3 – Evidence of gully erosion up stream

Drainage Line 2 (Area 3)

The riparian zone is slowly widening after each flooding event and also the creek bank is being washed down hill, preventing germination of native species. There is concern about the extent of erosion and lack of native vegetation, which in turn will cause the creek bank to further erode following future rain events.



Photograph 4 – Evidence of erosion downstream

5 Managing and Enhancing Conservation Corridors (proposed on-ground activities)

The 9 Valleys Wildlife Trail project is primarily focused on developing functional wildlife corridors throughout the Jerrys Plains to Giants Creek region. As such this report focuses on key opportunities that would contribute to the creation of a north south 'stepping stone' corridor through the Property. Please note that there may be a number of additional opportunities that exist that would increase the extent of wildlife habitat throughout the property, but the proposed actions included in this report are limited to the scope of the inspection.

Following are details of the management priorities identified during the site inspection. The location for each of these actions is detailed on Map 1.

5.1 Landscape Connectivity (Stepping stones)

Stepping Stones

Stepping stones or landscape connectivity is the connection of two patches of vegetation which are isolated or devoid of any vegetation features.

Planting of Eucalyptus trees has been extensively undertaken by the property owner's mainly focussing on planting along the northern side of Martindale Creek and also north of Martindale Road (Area 4).

Additional planting could be extended within Area 4 (particularly in areas where there is little evidence of native regeneration) to include a variety of shrubs, vines and ground cover species, creating a mid-storey which is important habitat for woodland birds. Martindale Creek is known habitat for a number of woodland species including the Painted Honeyeater, Diamond Fire-tail and Hooded Robin (Map 2).

Other potential vegetation links may include:

- Extending the riparian corridor linking with the roadside vegetation and also linking to the established restoration sites on the northern side of Martindale Road.

Creek bank Restoration to encourage Woodland Bird Habitat

Following severe rain events along drainage line 2 (Area 3) soil, debris and logs are washed downstream limiting opportunity for native species recruitment and increasing soil erosion. A number of options to address bank erosion and increase recruitment of native species include:

1. Installation of erosion control measures i.e. appropriate erosion matting that will enable stabilisation of slopes, native seed retention and natural regeneration e.g. Coir matting or jute matting
2. Contact the Department of Primary Industries (Water) for specific advice relating to creek bank and gully erosion
3. Plant appropriate endemic species to further stabilise the creek bank in areas where there is no evidence of natural regeneration.

6 Further Information and Resources

Alt S, Jenkins A, Lines-Kelly R. 2009. *Saving Soil, a landholder's guide to preventing and repairing soil erosion*. State of NSW through NSW Department of Primary Industries