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Second interim report of a field survey for the Striped Legless Lizard (*Delma impar*) and Grassland Earless Dragon (*Tympanocryptis pinguicolla*) along the proposed alignment of the Geelong – Melbourne pipeline.

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Background

The Barwon Regional Water Corporation proposes to construct a 55 km potable water connection between Lovely Banks Basin and the Cowies Hill Reservoir to ensure Geelong's water supply. Kellogg Brown & Root Pty Ltd (KBR) has been commissioned by Barwon Water to design and provide environmental support for the pipeline.

The proposed pipeline has been identified as containing several potential habitat areas for the threatened Striped Legless Lizard (SLL) and Grassland Earless Dragon (GED). Wildlife Profiles Pty Ltd was contracted to undertake surveys for these species in previously identified areas of potential remnant habitat.

Objective

To survey selected areas of identified potential habitat for both threatened reptiles species, using methodologies and survey intensity recognised as appropriate and adequate for the target species. Identification of survey sites was facilitated by previous mapping of remnant grassland vegetation and stony knolls by KBR – most sites were selected within these previously identified areas, and incorporated a good geographic coverage along most of the easement from the south-west to the north-east. Locations of survey sites are indicated in Table 1 below.

Methodology

An initial one-day site inspection on 4th December 2009 enabled selection of survey sites, and formulation of the detailed methodology survey effort required.

Tile grids are the main field survey technique employed for the SLL. Roofing tiles are placed as artificial refuge sites, which are then checked periodically for SLL. Typically, tiles are placed in a 5 x 10 grid arrangement, with tiles 5m apart – however, the linear nature of the pipeline easement necessitated a modification of this arrangement to a 2 x 25 arrangement, allowing the grid to be encompassed within the pipeline easement. Ten such grids were placed in areas of potential grassland habitat along the alignment, at sites as indicated in Table 1. These sites were established on 7th and 8th December 2009.

For the GED, four techniques are being utilised – deployment of artificial shelter sites ("spider-tubes"), checking of invertebrate burrows and soil cracks with an endoscope, hand-checking of other shelter sites (rocks), and searching for active individuals with the aid of binoculars. These techniques are being deployed as recommended in the current National Recovery Plan for the species. Six sites along the pipeline alignment are being examined in this manner, using all four techniques, with some

additional sites using a combination of the latter three techniques. Grids of spider tubes, in a 4 x 25 arrangement of 100 tubes at 10 metre spacing, have been established at each of five sites along and within the vicinity of the pipeline alignment – locations of sites are indicated in Table 1. Fortuitously, at one site (Peak School Road) the Department of Sustainability and Environment surveyed for the GED last year, and we are able to also utilise the results of that survey.

Results

To date, the tile grids for SLL have been examined four times (scheduled fortnightly), on 6-7th and 20th January, 2-3rd and 16-17th February 2010. No SLL were detected, with evidence of only three vertebrate species apparent – the introduced House Mouse (*Mus musculus*), the native Fat-tailed Dunnart (*Sminthopsis crassicaudata*) and the Common Blue-tongued Lizard (*Tiliqua scincoides*).

The spider-tube grids for GED have been examined four times (weekly checks scheduled), on 2-3rd, 10-11th, 16-17th and 22nd February 2010. No GED were detected, nor was there any evidence of other vertebrates utilising the spider-tubes. Searching has been completed at three sites, and endoscope examination at three sites – no GED were detected.

One reptile species, the Common Blue-tongued Lizard (*Tiliqua scincoides*) was observed at three sites.

Fieldwork is scheduled until the end of March 2010.

Table 1. Locations of survey sites for Striped Legless Lizard and Grassland Earless Dragon

Grid: UTM, Datum: GDA94

Tile Grid 1	269243 5793251	Spider-tube Grid 0 (DSE 2009)
Tile Grid 1	269269 5793378	
Tile Grid 2	277184 5803218	
Tile Grid 2	277197 5803306	
	278399 5802618	Spider-tube Grid 1
	278490 5802405	Spider-tube Grid 1
Tile Grid 3	277274 5803949	Spider-tube Grid 2
Tile Grid 3	277263 5803810	
Tile Grid 4	279476 5807041	Spider-tube Grid 3
Tile Grid 4	279370 5806963	
Tile Grid 5	282836 5809534	Spider-tube Grid 4
Tile Grid 5	282726 5809461	
Tile Grid 6	284633 5810873	
Tile Grid 6	284751 5810962	
Tile Grid 7	285074 5811296	
Tile Grid 7	284963 5811127	
Tile Grid 8	291117 5812074	Spider-tube Grid 5
Tile Grid 8	291256 5812063	
Tile Grid 9	293543 5811795	
Tile Grid 9	293679 5811793	
Tile Grid 10	294035 5811784	
Tile Grid 10	293895 5811779	

Discussion

While there have been no records of either target reptile species to date, it is possible that either may still be detected as the study proceeds. Each survey site supports vegetation of a composition and structure suitable for these species, and in which they are known to occur elsewhere.

Because historical and current uses of the grassland habitats are likely to influence the capacity of the sites to support these two species, it is not possible to predict where the two reptile species may occur with any reliability – hence the intensive survey currently being undertaken. We will have a better understanding of likely occupation of the survey sites once the full survey period and effort has been completed.

Furthermore, the study sites represent only a small sub-sample of the area of potential habitat present along the proposed pipeline alignment. It is therefore quite possible that either species occurs elsewhere along the pipeline alignment outside the current survey sites. Consequently, we would recommend that a conservative approach be taken when planning construction activities, by assuming that all rocky knoll and all remnant grassland patches may support the species. As such, we can suggest the following interim recommendations.

Interim Recommendations

- Minimise disturbance to rocky knolls, by narrowing the pipeline easement to a minimum in such areas, and not allowing any access outside the easement.
- Minimise disturbance to patches of remnant native grassland, by narrowing the pipeline easement to a minimum in such areas, and not allowing any access outside the easement.
- Where rocky knolls support remnant native grassland vegetation, particular attention should be given to construction techniques which further minimise disturbance to these areas.
- Consideration should be given to fencing to exclude stock from such areas. This will be essential during rehabilitation after construction.
- Immediately prior to first disturbance by construction activities, rocky knoll areas and remnant grassland patches should be thoroughly checked by suitably qualified and experienced biologists, with the aid of earth-moving equipment, to inspect potential shelter sites of threatened species.
- During construction, if it is necessary to leave any open trenches, these must be checked at least daily, by a suitably qualified and experienced biologist, for any vertebrates that may have entered the trench.
- Contingency plans must be in place prior to commencement of construction, to cater for the possibility of threatened species being located during or immediately prior to construction.
- Detailed plans for rehabilitation of the pipeline after construction must include provision of those habitat requirements considered important for these threatened species, with subsequent monitoring of the success of this rehabilitation.

Peter Robertson