

**DINGLEY CORRIDOR – WARRIGAL ROAD TO
WESTALL ROAD**

**GROWLING GRASS FROG
TARGETED SURVEY**

VicRoads Eastern Projects



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1. EXECUTIVE SUMMARY

VicRoads Eastern Projects engaged Brett Lane and Associates Pty. Ltd. (BL&A) to conduct a targeted Growling Grass Frog survey in wetlands situated along a six kilometre proposed road corridor from Warrigal Road to Westall Road Extension, Dingley, southeast of Melbourne.

This investigation was commissioned to provide information on the extent and condition of potential Growling Grass Frog habitat and identify if any populations of this species exist in the study area.

Growling Grass Frog was not recorded during the assessment. Therefore, the proposed development will not impact this species. Due to the absence of Growling Grass Frog in the development footprint no implications pertain to the project in relation to this species.

Consideration should be given to including the mitigation measures described below in a construction and operational environmental management plan for the project. This would ensure that all frog species would be protected during the construction and operation of the proposed development.

- During construction:
 - All construction machinery must be cleaned before entering the site to avoid spreading weeds and diseases that are detrimental to frogs.
 - The proposed development must be designed to avoid hydrological changes and subsequent impacts to frog habitat, tributaries and / or significant drainage lines.
 - All construction personnel must be trained to identify Growling Grass Frogs and a construction management plan, including salvage and translocation protocol must be prepared in the eventuality that Growling Grass Frogs are identified during construction works. Translocation must only be done by an appropriately trained ecologist.
- Where possible, retain all suitable habitats and dispersal corridors.
- Where possible, construction related activities should be sited at least 10 metres away from all watercourses, wetlands and significant drainage lines:
 - This buffer must be revegetated with appropriate (and preferably indigenous) species to minimise any potential long-term adverse impacts on the waterbody quality.
 - Invasive and non-indigenous species must be progressively manually removed in and adjacent to the watercourses.
 - Sediment and contaminant traps in addition to erosion control barriers must be erected to protect the wetlands and watercourses during construction.

2. INTRODUCTION

VicRoads Eastern Projects engaged Brett Lane and Associates Pty. Ltd. (BL&A) to conduct a targeted Growling Grass Frog survey in wetlands situated along a six kilometre proposed road corridor from Warrigal Road to Westall Road Extension, Dingley, southeast of Melbourne.

This investigation was commissioned to provide information on the extent and condition of potential Growling Grass Frog habitat and identify if any populations of this species exist in the study area.

This report outlines any implications under various national, state and local legislations.

Specifically, the scope of the investigation included:

- A site survey involving a search of suitable habitat over two nights during ideal conditions.
- Identification and GPS mapping of any threatened fauna recorded.
- A report presenting the results of the survey.

This report is divided into the following sections:

Section 3 presents the sources of information and species biology.

Section 4 presents the methods of the survey.

Section 5 presents the results of the assessment.

Section 6 presents the regulatory implications.

Section 7 presents the conclusions and recommendations.

This investigation was undertaken by a team from Brett Lane & Associates Pty. Ltd., comprising Khalid Al-Dabbagh (Zoologist), James Iaconese (Zoologist), Gabrielle Roy (Zoologist), and Alan Brennan (Senior Ecologist & Project Manager).

3. SPECIES BIOLOGY

3.1. Description

The Growling Grass Frog (*Litoria raniformis*) is a large frog species growing to a size of approximately 85 millimetres. It is dull green to bright emerald green with blotches of brown or rich golden bronze and numerous large warts above and whitish below. It has a narrow stripe from the nostrils along each side to the groin, which is bright blue or blue-green (Cogger 2000).

3.2. Habitat

The Growling Grass Frog is predominantly an aquatic species. Core habitat for the species includes permanent water bodies such as streams, lagoons, farm dams and old quarry sites supporting fringing aquatic vegetation (Cogger 2000 and Organ 2002). Waterbodies supporting the Growling Grass Frog usually support floating and emergent flora species such as Common Reed (*Phragmites australis*), Bulrush (*Typha spp.*) and Water Ribbon (*Triglochin spp.*).

This species hides by day under debris and in vegetation and is active at night (Turner 2004).

3.3. Distribution

Historically the Growling Grass Frog was known to be common throughout most of Victoria except the Mallee and Alpine regions. Presently the species is found along Kororoit Creek and associated nearby wetlands, including the water feature associated with the Caroline Springs development, Merri, Edgars and Darebin Creeks (north of the Western Ring Road), Little River and Western Treatment Plant, Pakenham area and in wetlands adjacent to the Yarra River at Yarra Glen (Organ 2002; P.S. Lansley, B. Lane pers. obs.).

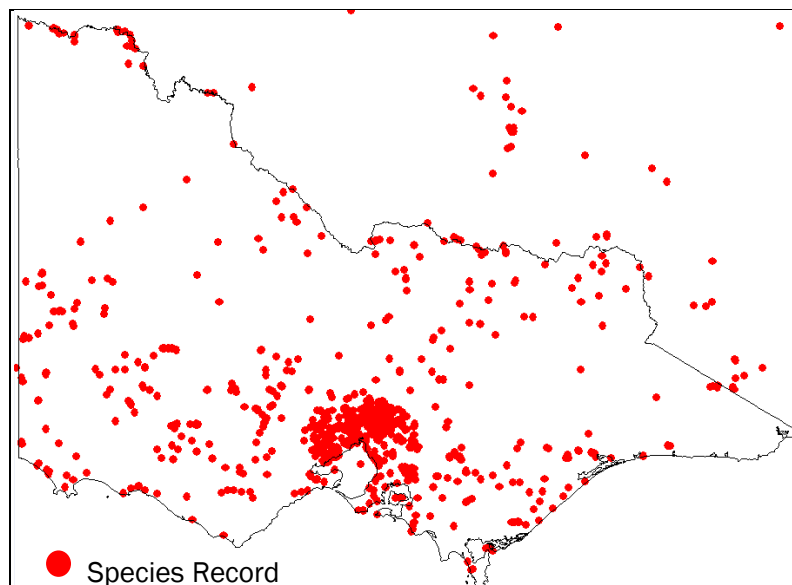


Figure 1: Distribution of Growling Grass Frog in Victoria (Source: AVW database 2009)

3.4. Threats

The species has undergone a dramatic decline since the 1970s (Tyler 1997; Flora and Fauna Guarantee – Scientific Advisory Committee 1999). The reasons for this decline are not completely understood but a number of factors are believed to be contributing to the species' decline. These factors include habitat loss and fragmentation through land clearing for agricultural and urban development, drainage and degradation of wetlands, increasing salinity and water pollution (e.g. glyphosate), and increased predation of tadpoles by the introduced Mosquito Fish (*Gambusia spp.*) (Tyler 1997; Flora and Fauna Guarantee – Scientific Advisory Committee 1999).

3.5. Legislative protection

The Growling Grass Frog is listed as *vulnerable* under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). It is also listed as threatened under the Victorian Flora and Fauna Guarantee Act 1988 (FFG Act) and *endangered* in Victoria under the Department of Sustainability and Environment (DSE) threatened species advisory list (DSE 2007) and as *vulnerable* under the Frog Action Plan (Tyler 1997).

4. METHODS

4.1. Existing information

Existing information regarding Growling Grass Frog utilised as part of this investigation is described below.

- Victorian fauna records from the Atlas of Victorian Wildlife (AVW), a public database maintained by the DSE, were obtained for the purpose of this investigation. This search listed all Growling Grass Frogs found within a ten kilometre search region the approximate centre point of the study area, coordinates: latitude 37° 59' 43" S and longitude 145° 09' 34" E.
- Information on field survey methods for the Growling Grass Frog was obtained from Heard *et al.* (2004), and the *Biodiversity Precinct Planning Kit* (DSE 2009).
- Further information on habitat requirements and status of Growling Grass Frog was obtained from a number of investigations (Organ 2002; Robertson *et al.* 2002; Heard *et al.* 2004).

4.2. Habitat assessment

Wetland habitats were assessed for their suitability for the Growling Grass Frog using the following criteria:

High: Habitat components listed below are usually all present.

- Permanent, or largely permanent, still water body;
- Slow-flowing stream with dense in-stream vegetation;
- Water body with large areas of fringing and aquatic vegetation (eg. Common Reed, Bulrush, Sedges, Rushes (*Juncus* spp.) and Water Ribbon;
- Thick ground cover vegetation, or rocks, for shelter;
- Connectivity with other areas of suitable habitat.

Moderate: Some fauna habitat components are often missing although linkages with other remnant habitats in the landscape are usually intact.

- Water body likely to hold water for most of the year (i.e. permanent, or largely permanent);
- Water body with some fringing and aquatic vegetation (e.g. Common Reed, Bulrush, Sedges, Rushes (*Juncus* spp.) and Water Ribbon;
- Some ground cover vegetation, or rocks;
- Some connectivity with other areas of suitable habitat.
- Water body shows some signs of disturbance (such as erosion, access to stock, feral predators and pets)

Low: Many habitat elements have been lost. Aquatic habitats that are:

- Likely to be ephemeral (only hold water for part of the year);
- Little or no fringing or in-stream aquatic vegetation;

- Isolated (little or no connectivity);
- Showing signs of disturbance (such as erosion, access to stock);
- Thick ground cover vegetation or rocks absent.

4.3. Targeted Survey

To determine the occurrence of the Growling Grass Frog in the study area, a targeted survey was undertaken on January 7th and 11th 2011. The survey was undertaken at three locations:

- Karkarook Park (Survey locations 1, 2 & 3);
- Lantrak Quarry (Survey locations 4, 5 & 6); and
- The wetland located at the corner of Westall Road and Spring Road.

Karkarook Park and the wetland located at the corner of Westall Road and Spring Road had been identified as supporting suitable habitat in 2008. The Lantrak Quarry was not able to be accessed and was not therefore assessed during the 2008 survey. The Lantrak Quarry was recommended for a targeted survey as Growling Grass Frog is known to inhabit quarry holes.

The habitat at Lantrak Quarry was found to be of low quality for Growling Grass Frog due to the low abundance of fringing and submerged vegetation. Concurrently, the wetland was located at the bottom of very steep banks. Therefore, the edge of the wetland could not be safely searched for the species. Call playback was undertaken on the first survey night but this was not repeated on the second night due to the low habitat quality.

At the time of the current targeted survey, the wetland located at the corner of Westall Road and Spring Road was found to support no water despite good levels of rainfall over the preceding months. As the habitat was found to be unsuitable, no targeted surveying was undertaken at this location.

The survey at Karkarook Park was undertaken over two nights. Surveying was limited to times when weather conditions were considered appropriate to detect Growling Grass Frog. This consisted of warm evenings and nights with air temperature of 15 °C or more, with moderate to no wind. Under these conditions, frogs are more likely to be calling and active and be easily detected.

Field surveys took place between 21:00 (after sunset, almost dark) and 23:00, Australian Eastern Daylight time (AEDT). At the beginning of each survey a period was spent at the water's edge listening and recording the species and the abundance of the frogs calling. After five minutes listening time, playback of a recorded male Growling Grass Frog advertisement call was conducted to encourage any frogs that were present to respond. A further five minutes was then spent listening for a response.

Following call playback and listening time, each site was systematically searched for frogs with a spotlight and visual inspection covering up to 50 metres along the banks where accessible. Call recognition and limited active searching (turning surface debris) was also conducted. The number of frogs including Growling Grass Frogs, seen or heard at each survey site and notes on quality of habitat and aquatic vegetation present were recorded.

Survey site locations are provided in Figure 2.

4.4. Limitations of field assessment

Where feasible, all efforts are made to schedule Growling Grass Frog field surveys in optimal weather conditions and times of year. Nevertheless, field surveys usually fail to record all species present for various reasons, including the seasonal absence of some species and short survey duration. Rare or cryptic species are often missed in short surveys.

The targeted assessment was undertaken during warm and rainy conditions. These conditions were considered suitable for detecting frog species likely to occur in the study area.

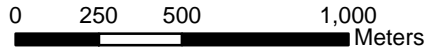
Wherever appropriate, a precautionary approach has been adopted in the discussion of implications. That is, where insufficient evidence is available on the occurrence or likelihood of occurrence of a species, it is assumed that it could be in an area of suitable habitat. The implications under legislation and policy are considered accordingly.



Legend

- Study Area
- Survey Location
- 1 Survey ID

Figure 1: Survey Locations		
Project: Dingley Corridor - Warrigal Rd to Westall Rd		
Client: VicRoads Eastern Projects		
Project No.: 8094.9	Date: 09/02/2011	Created By: K.AI-Dabbagh/ M.Ghasemi
BL&A	Brett Lane & Associates Pty. Ltd. Ecological Research & Management	
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5. RESULTS

5.1. Existing information

The AVW holds nine records of Growling Grass Frog within 10 kilometres of the proposed Dingley Bypass. The location of these records and others in the wider area is presented in Figure 3. The most recent record was in 1999.

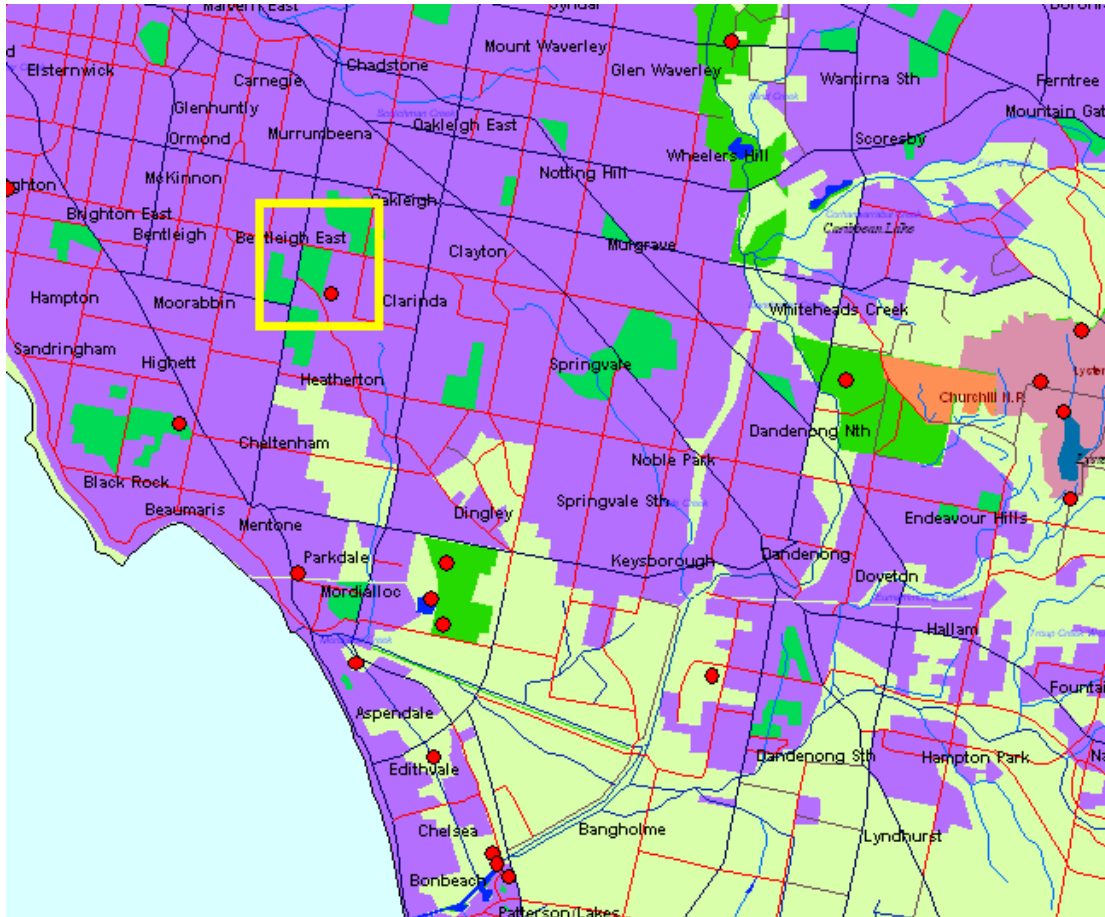


Figure 3: Map of existing records from the AVW (2009).

The yellow box shows the approximate survey location. The red dots present the location of the Growling Grass Frog records \pm 10 kilometres

5.2. Habitat Assessment

The habitats located in Karkarook Park supported moderate to high quality Growling Grass Frog habitat. The wetlands were full and supported abundant submerged, emergent and fringing vegetation. Dominant species included Common Reed. Basking and breeding habitat was also present. Fringing vegetation comprised rush and sedge species. The wetlands were located in a large wetland complex which provided a movement corridor between areas of suitable habitat.

5.3. Survey results

No Growling Grass Frogs were observed or heard during the targeted survey. Four frog species were recorded: Common Froglet, Spotted Marsh Frog, Southern Brown Treefrog and Banjo Frog. Survey results are presented in Table 2.

Table 1: Targeted survey results

Date	Site Number	Species Heard During Call Playback	Species Observed During Search
7/1/11	1	Banjo Frog, Spotted Marsh Frog	Spotted Marsh Frog
7/1/11	2	No frogs heard	
7/1/11	3	Banjo Frog, Spotted Marsh Frog	
7/1/11	4	Banjo Frog, Common Froglet	
7/1/11	5	Banjo Frog, Spotted Marsh Frog	
7/1/11	6	Banjo Frog	
11/1/11	1	Banjo Frog, Spotted Marsh Frog	Spotted Marsh Frog
11/1/11	2	Spotted Marsh Frog, Common Froglet	Spotted Marsh Frog
11/1/11	3	Banjo Frog, Spotted Marsh Frog, Common Froglet	

6. IMPACTS AND REGULATORY IMPLICATIONS

6.1. Proposed development and direct impacts

The proposed development will involve the construction of an approximately six kilometre long bypass between Warrigal Road and Westall Road, Victoria. The proposed development footprint supports one site (wetland) which was originally considered to support Growling Grass Frog habitat. This was located at the corner of Westall Road and South Road. However, during this assessment the habitat was not considered suitable for the species due to a lack of water, despite the survey being undertaken in an above-average rainfall year. Several wetlands adjacent to the proposed bypass were surveyed for the species. One site – Karkarook Park – supported moderate to high quality Growling Grass Frog habitat. However, no Growling Grass Frog was recorded during the assessment and none are considered likely to occur. Therefore the proposed development would not impact Growling Grass Frog.

6.2. EPBC Act

The *Environment Protection and Biodiversity Conservation Act 1999* contains a list of threatened species and ecological communities that are considered to be of national conservation significance. Any impacts on these species considered significant requires the approval of the Australian Minister for the Environment. If there is a possibility of a significant impact on nationally threatened species or communities or listed migratory species, a Referral under the EPBC Act should be considered. The Minister will decide after 20 business days whether the project will be a 'controlled action' under the EPBC Act, in which case it cannot be undertaken without the approval of the Minister. This approval depends on a further assessment and approval process (lasting between three and nine months, depending on the level of assessment).

No Growling Grass Frogs were recorded in the study area and none are considered likely to occur. Therefore the proposed development will not have a significant impact on the species. As such, there are no implications under the EPBC Act.

6.3. FFG Act

The Victorian *Flora and Fauna Guarantee Act 1988* lists threatened flora and fauna species to provide for their protection and management. The FFG Act has limited direct application to private land. However, Clause 15.09 of the Planning Scheme makes reference to this Act. The local planning authority is likely to consider impacts on FFG Act-listed species and communities when deciding on planning permit applications.

The proposed development does not support Growling Grass Frogs and it is unlikely that this species is present in the development footprint. Therefore, the proposed development will not result in a significant impact on Growling Grass Frog.

6.4. EE Act

Under the *Environment Effects Act 1978*, proponents are required to prepare a Referral to the state minister for Planning, which will determine if an Environment Effects Statement (EES) is required for the project. Criteria related to flora and fauna are:

- Potential clearing of ten hectares or more of native vegetation from an area with endangered EVC, or vegetation that is or is likely to be, of very high conservation significance according to Victoria's Native Vegetation Management Framework, except where authorised under an approved Forest Management Plan or Fire Protection Plan;
- Potential long-term loss of a significant proportion (1 to 5% depending upon conservation status of species concerned) of known remaining habitat or population of a threatened species in Victoria;
- Potential long-term change to a wetland's ecological character, where that wetland is Ramsar listed, or listed in 'A Directory of Important Wetlands in Australia';
- Potential major effects upon the biodiversity of aquatic ecosystems over the long term;
- Potential significant effects on matters listed under the *Flora and Fauna Guarantee Act 1988*.

One or a combination of these criteria may trigger a requirement for a Referral to the Victorian Minister for Planning who will determine if an EES is required.

Taking into consideration the proposed development will not result in a significant impact on the species a referral to the minister for Planning is not required.

6.5. DSE advisory lists

Rare and threatened species advisory lists administered by the Department of Sustainability and Environment include flora and fauna species known to be rare or threatened throughout the state. Although the advisory list has no statutory status, the Responsible Authority will consider impacts on any species on the list when assessing a planning application.

Growling Grass Frog was not recorded in the study area and it is not considered likely to occur. Therefore, the proposed development will not result in a significant impact on the species.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1. Conclusions

Growling Grass Frog was not recorded during the assessment. Therefore, the proposed development will not impact this species. Due to the absence of Growling Grass Frog in the development footprint no legal implications pertain to the project in relation to this species.

7.2. Mitigation Recommendations

Consideration should be given to including the mitigation measures described below in a construction and operational environmental management plan for the project. This would ensure that all frog species would be protected during the construction and operation of the proposed development.

- During construction:
 - All construction machinery must be cleaned before entering the site to avoid spreading weeds and diseases that are detrimental to frogs.
 - The proposed development must be designed to avoid hydrological changes and subsequent impacts to frog habitat, tributaries and / or significant drainage lines.
 - All construction personnel must be trained to identify Growling Grass Frogs and a construction management plan, including salvage and translocation protocol must be prepared in the eventuality that Growling Grass Frogs are identified during construction works. Translocation must only be done by an appropriately trained ecologist.
- Where possible, retain all suitable habitats and dispersal corridors.
- Where possible, construction related activities should be sited at least 10 metres away from all watercourses, wetlands and significant drainage lines:
 - This buffer must be revegetated with appropriate (and preferably indigenous) species to minimise any potential long-term adverse impacts on the waterbody quality.
 - Invasive and non-indigenous species must be progressively manually removed in and adjacent to the watercourses.
 - Sediment and contaminant traps in addition to erosion control barriers must be erected to protect the wetlands and watercourses during construction.

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