

# Giant Gippsland Earthworm Assessment - Proposed Residential Subdivision at 951 Yannathan Road, 30 Glovers Road and 379 Lang Lang -Poowong Road, Nyora

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## Revision List

Revision	Revision Date	Description of Revision	Reviewer
Revision 1	29/08/2017	First Draft	B. Van Praagh
Revision 2	13/09/2017	Final	Brett MacDonald

## ABBREVIATIONS

SGSC: South Gippsland Shire Council

DELWP: Department of Environment, Land, Water and Planning

DoE: Department of the Environment

DOP: Development Plan Overlay

EPBC Act: *Environment Protection and Biodiversity Conservation Act 1999*

ESO4 Environmental Significance Overlay

FFG Act: *Flora and Fauna Guarantee Act 1988*

GGE: Giant Gippsland Earthworm, *Megascolides australis*

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## EXECUTIVE SUMMARY

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### PROJECT BACKGROUND

INVERT-ECO was commissioned by Brett Lane & Associates Pty Ltd to undertake a targeted survey for the threatened Giant Gippsland Earthworm, *Megascolides australis* (GGE) at the site of a proposed residential development. The study area comprises 951 Yannathan Road, 30 Glovers Road and 379 Lang-Lang Poowong Road, Nyora.

A portion of the study area is covered by the South Gippsland Shire Council (SGSC) ESO9 – Gippsland Giant Earthworm Conservation Overlay and a Development Plan Overlay Schedule 10 (DPO10). Both include specific conditions in relation to the conservation of GGE when planning applications are proposed. This investigation was undertaken to identify any GGE colonies within the study area, assess potential impacts of the proposed development and advise on mitigation strategies to avoid or reduce environmental impacts on the species.

### METHODS

A field assessment at 379 Lang Lang- Poowong Rd was undertaken by two workers on 21<sup>st</sup> August 2017 by digging soil quadrats to look for evidence of GGEs. The primary focus of the sampling was along the creek-banks of the tributaries of the Little Lang Lang River.

A desktop assessment of the likelihood of GGE occurring at 951 Yannathan Rd and 30 Glovers Rd was undertaken by reviewing site records, available mapping models, viewing aerial photography and parts of the study area from the adjacent property and roadside.

The field assessment was performed under optimal sampling conditions.

### RESULTS

#### 379 Lang Lang Poowong Rd

No evidence of GGE was recorded from within the study area. While some of the elements that typify potential habitat were identified along the creek banks e.g.-moist soils with buttercup and yabby mounds, none of the sites supported the appropriate clay based soils required by GGEs. All the soils found within the study area belong to the Nyora Map Unit (Association Victorian Recourses Online-west Gippsland {VRO}) which consist of soils with varying amounts of sand. GGE are absent from sandy soils as they require soils with a high clay component to build their permanent burrow systems and retain moisture (Van Praagh *et. al.* 2004).

### 951 Yannathan Rd and 30 Glovers Rd

Based on aerial photography and visual inspection from the road, the VRO mapping data and the results of the GGE assessment of the adjoining property, it is most likely that these two properties do not contain any suitable GGE habitat. There are no waterways located on the properties (GGE are most commonly found along the banks of waterways) and the sites are comprised of soils belonging to the Nyora Map Unit Association (VRO). This indicates that the sites consist of sandy soils, similar to the those found at 379 Lang Lang Poowong Rd.

While GGE records are found relatively close to the study area, Nyora is on the south western edge of the species range and the GGE records occur in basaltic soils with clay loams to silty clay loams from the Strzelecki and Ripplebrook Soil Association.

## POTENTIAL IMPACTS AND LEGISLATION

Potential impacts to GGE colonies from housing developments include direct impacts from excavation works in GGE habitat and indirect impacts from altered hydrological processes including changes that cause flooding or drying of the habitat. Appropriate hydrological conditions are a critical component of suitable GGE habitat.

As no evidence of GGE was recorded from the 379 Lang Lang Poowong Rd and there is an extremely low likelihood of the species occurring at 951 Yannathan Rd and 30 Glovers Rd, there are no impacts to GGE colonies anticipated from the proposed residential development.

Information regarding legislative compliance and GGE can be found in Section 5. In summary :

- This assessment supports the requirements for a GGE survey where developments are mapped as potential habitat under the ES09 and where a Development Plan Overlay Schedule 10 applies.
- Results of this GGE assessment must be presented in a planning permit application to South Gippsland Shire Council as outlined in the Planning Permit Pathway under the ES09.
- The proposed action is unlikely to have a significant impact on the Giant Gippsland Earthworm as they were not recorded within the study area. As such, a referral to the Commonwealth Minister is unlikely to be required.
- A permit under the *FFG Act 1999* is not required in relation to GGE.

# 1 INTRODUCTION

## 1.1 Project Background

INVERT-ECO was commissioned by Brett Lane & Associates Pty Ltd to undertake a targeted survey for the Giant Gippsland Earthworm (GGE) at the site of a proposed residential development. The study area comprises three properties including 951 Yannathan Road, 30 Glovers Road and 379 Lang-Lang Poowong Road, Nyora.

A portion of the study area is covered by the South Gippsland Shire Council (SGSC) ESO9 – Gippsland Giant Earthworm Conservation Overlay. A Development Plan Overlay Schedule 10 (DPO10) also applies to the land which includes conditions specific to the conservation of GGE. As a consequence, a GGE assessment is required to support a permit application for the proposed residential development.

The Giant Gippsland Earthworm (*Megascolides australis*) is listed as Vulnerable under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and Threatened under the *Victorian Flora and Fauna Guarantee Act 1988* (FFG Act) (See section 1.4 for further information).

This investigation was undertaken to assess potential impacts of the proposed development on any GGE colonies identified and advise on mitigation strategies to avoid or reduce environmental impacts on the species. This will inform legislative and planning requirements by SGSC and the Department of Environment, Land, Water & Planning (DELWP).

## 1.2 Scope of Assessment

The specific objectives of this assessment are:

- Conduct a targeted field survey for the Giant Gippsland Earthworm at 379 Lang Lang Poowong Rd,
- Undertake a desktop assessment to determine the likelihood of GGE occurring at 951 Yannathan Rd and 30 Glovers Rd, Nyora,
- Provide mitigation options to protect GGE colonies should they occur within areas to be impacted by the proposed residential development.

### 1.3 Study Area

The study area is approximately 104 ha and is situated on the outskirts of Nyora, bound by Lang Lang Poowong Rd to the south and Yannathan Rd, to the west (Figure 1&2). It comprises three properties, including 951 Yannathan Road, 30 Glovers Road and 379 Lang-Lang Poowong Road, Nyora. The first two properties were assessed via a desktop assessment, while a field assessment was undertaken at 379 Lang-Lang Poowong Road, Nyora (see Figure 2).

The land has recently been rezoned from Farming Zone (FZ) to General Residential Zone 1 (GRZ1) and is identified in the Nyora Framework Plan as 'Future Residential Area' and 'Long Term Residential Area'. The land is covered by the ESO9 and DPO (10).

The topography of the land is one of low, rolling hills (Plate 1). Several tributaries of the Little Lang Lang River flow through the site (Plate 2). The site is comprised primarily of introduced pasture and has a long history of grazing. Remnant patches of native vegetation occur across the site, particularly along the watercourses.



**Figure 1 Location of study area at Nyora**

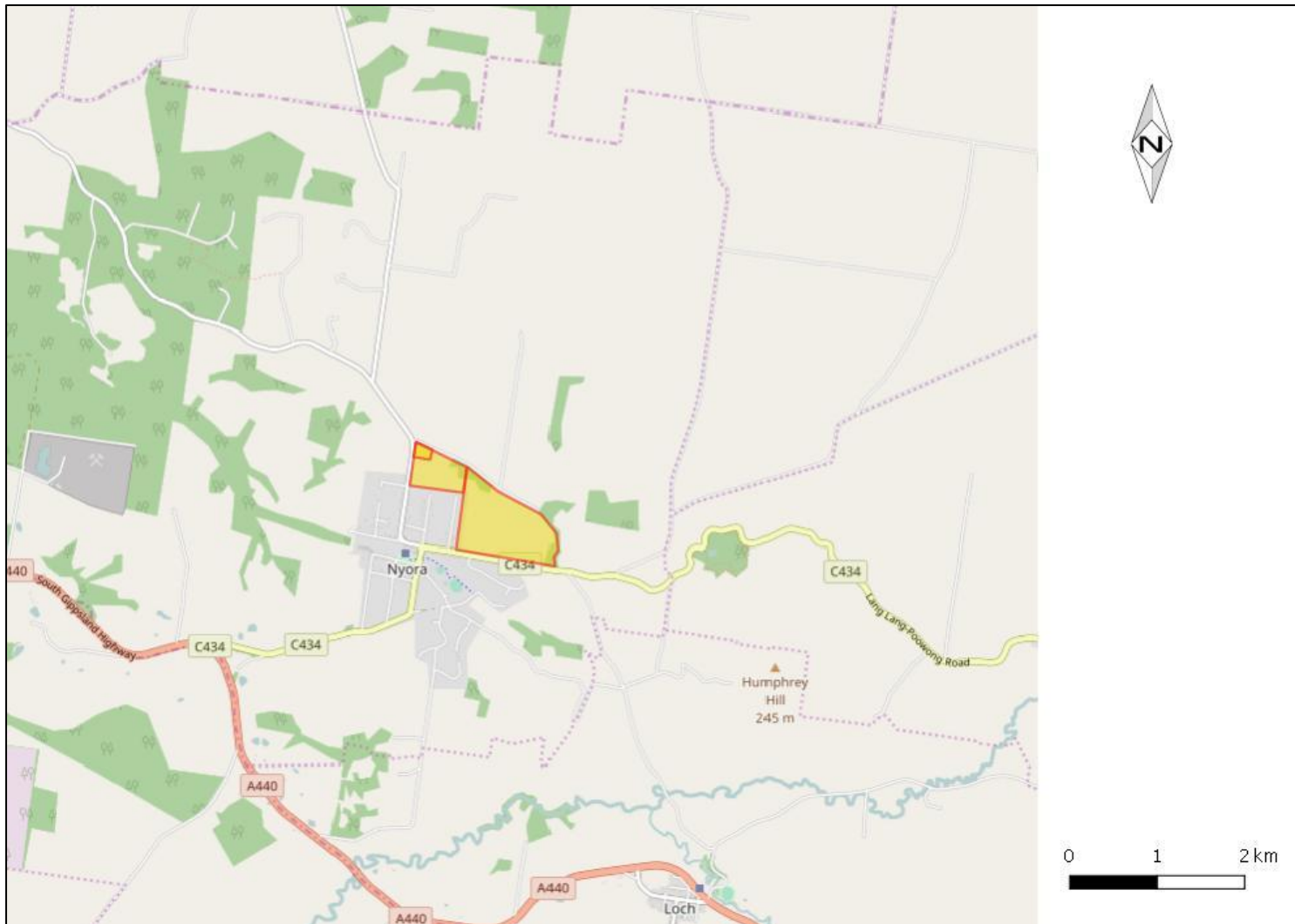
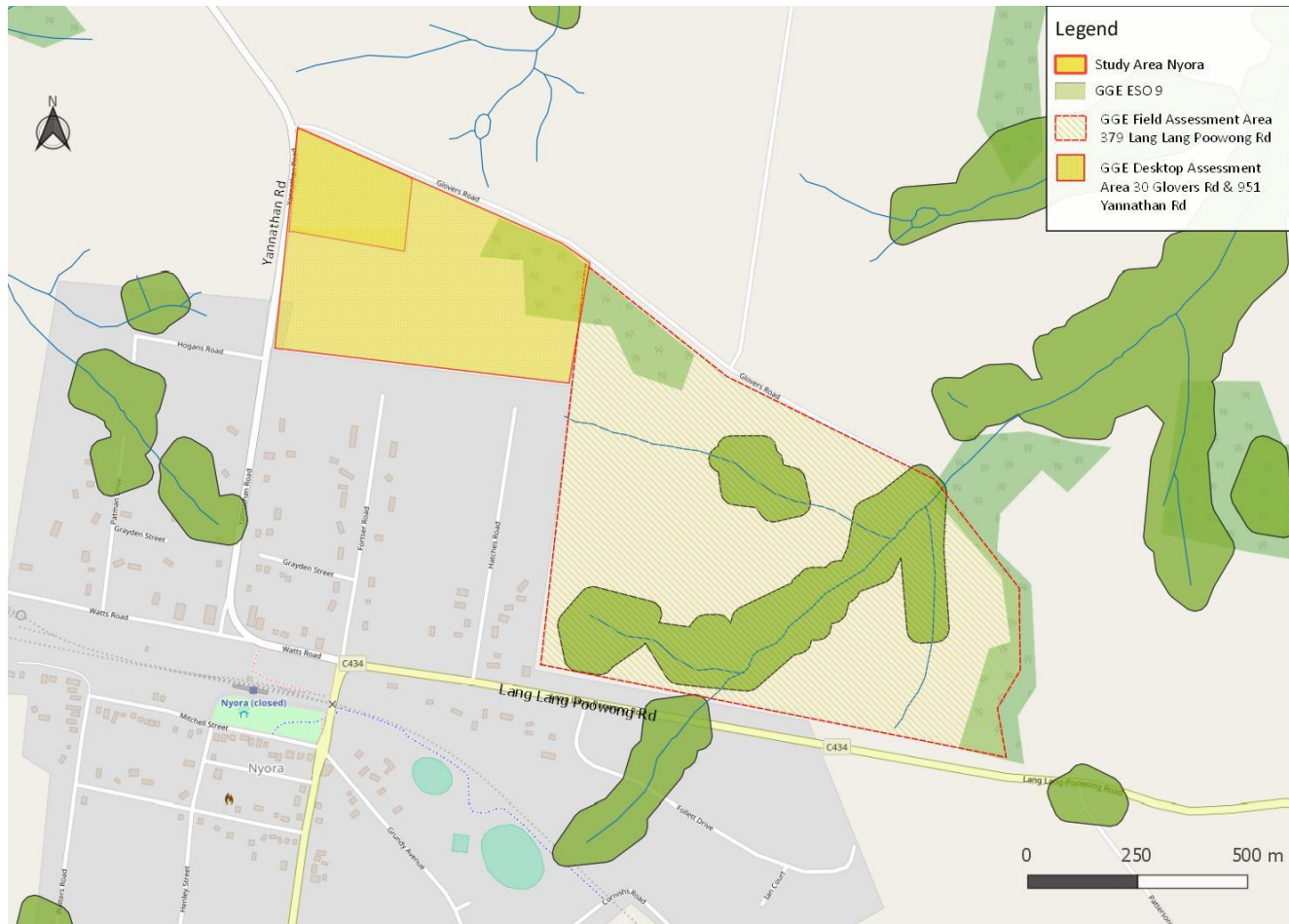


Figure 2 Location of GGE Desktop and Field Assessment Areas







**Plate 2** General landscape features of 397 Lang Lang Poowong Rd, Nyora



**Plate 1** Tributaries of the Little Lang Lang River targeted for GGE assessment

## 1.4 Giant Gippsland Earthworm

*EPBC Act 1999* Conservation Status: Vulnerable  
*FFG Act 1988* Conservation Status: Threatened  
 IUCN Red List of Threatened Species (2015): Endangered  
 DEPI Advisory List of Threatened Invertebrates  
 (2009): Listed



**Plate 3 Giant Gippsland Earthworm**

The Giant Gippsland Earthworm is one of the largest species of earthworm in the world, with adults reaching lengths of over 1.5 m and weights of up to 400 g (Van Praagh 1992) (Plate 3). The species is restricted to south and west Gippsland, Victoria with Warragul and Drouin representing the north of its range and Almurta and Korumburra in the south. Mt Worth represents the most easterly point of distribution.

Nyora is situated on the south-western edge of the species range (Appendix 1). GGE have been recorded within 500 m south east of the study area along Pattersons Rd (Invert-Eco records). Extensive records occur from around the townships of Loch and Poowong to the south and south east of the site.

The majority of habitat occupied by this species occurs on private land used for agriculture. GGE colonies are most commonly found along clayey creek banks and drainage lines, usually above the areas prone to flooding. Away from waterways, they occur near underground springs and soaks, either in gullies or on south-facing slopes with terracettes. The soils in the north of the species range are developed on Tertiary (older) Volcanic basalts compared with those in the south that are derived from the lower cretaceous sedimentary rock (Sargeant 1975, Smith and Peterson 1982).

While the species occurs over an area of approximately 40,000 ha, areas of suitable habitat within its range are patchy leading to small, fragmented populations. A combination of many interrelated factors such as slope, micro-topography, nature and depth of the soil and hydrological processes determine suitable habitat (Van Praagh *et.al.* 2007).

Aspects of the biology and ecology of the GGE such as long lifespan, low reproductive and recruitment rates, and poor dispersal ability render the fragmented populations particularly vulnerable to threatening processes (Van Praagh 1992). There are a range of processes that threaten GGE colonies. The most widespread and serious are the physical disturbance and compaction of soils, alterations to water tables and drainage patterns at the local and regional level.

For further information visit <http://www.giantearthworm.org.au/>



## 2 METHODS

### 2.1 Field Survey

A survey to establish the presence of the Giant Gippsland Earthworm involves inspecting the study area for the presence of suitable habitat (stream banks, soaks and south facing hillslopes) and targeting these areas for sampling. As there are no above ground signs to indicate whether this species is present, sampling involves digging quadrats of approximately 50 cm x 50 cm to examine the soil for evidence of GGGs. Evidence includes burrows and cast (waste) material. The presence of wet burrows indicates that a worm is occupying that burrow. If the ground is wet, presence of the worms can sometimes be established by banging the ground with a spade and listening for “gurgles”, the sound that is made when the worms retreat down their burrows.

A field assessment at 279 Lang Lang-Poowong Rd was undertaken by two surveyors on 21<sup>st</sup> August 2017. Sampling was concentrated along the banks of the four main tributaries of the Little Lang Lang River. Quadrats were dug at various intervals to examine the soil type and look for GGE burrows. The banks of several dams were also assessed in addition to random sites across the paddocks and away from the waterways.

### 2.2 Desktop assessment of 951 Yannathan Rd and 30 Glovers Rd, Nyora

Invert-eco has assessed the likelihood of GGE occurring within 951 Yannathan Rd and 30 Glovers Rd by:

- Undertaking a review of locality records and available mapping models for GGEs to assess distribution,
- Assessing the study area using aerial photography to determine the suitability of the habitat to support this species,
- Viewing parts of the study area from the adjacent property and roadside.

AMG data was recorded using a hand held GPS (GDA 94, accuracy  $\pm 5$  m).

### 2.2 Assessment Qualifications and Limitations

The optimum time to detect GGE is in the wetter months of the year or after recent rainfall. Conditions were good at the time of sampling and are considered relatively robust. Due to the cryptic habits this species, even when extensive surveys have been undertaken, there is still a risk that colonies may remain undetected. The risk for the GGE is addressed by a contingency plan for the accidental exposure of the Giant Gippsland Earthworms (see Section 6, Attachment 1).

## 3 RESULTS

### 3.1 379 Lang Lang-Poowong Rd

No evidence of GGE was recorded from within the study area. While some of the elements that typify potential habitat were identified along the creek banks e.g.-moist soils with buttercup and yabby mounds (see Plate 2), none of the sites supported the appropriate soil types required by GGEs. Several factors that characterise potential GGE habitat have been identified including proximity to water, soil hydrology and soil type (Smith and Peterson 1982, Van Praagh 1994, Van Praagh *et. al.* 2004, 2007). The species is generally found in acidic, silty clay loam and heavy clay soils, generally blue grey or red in appearance and found in the Strzelecki, Warragul and Ripplebrook soil associations described by Sargeant (1975).

All the soils found within the study area belong to the Nyora Map Unit Association (Victorian Recourses Online-west Gippsland {VRO}). Soils of the Nyora map unit have grey or dark grey loamy fine sand or loamy sand surfaces with low to moderate amounts of organic matter. At around 30 cm, dark brown mottled with light grey and light yellow-brown cemented sands often form a very compacted, cemented layer comprising humus and iron oxides. Below the coffee rock, paler-coloured and mottled sands overlying Tertiary sediments generally occur. These types of sandy soils were encountered along the creek-banks and within the paddocks (Plate 4). The only place clay soils were found was around several of the dams, most likely a result of the soils used in the dam construction.

GGE are absent from soils with a high coarse sand content as they require soils with a high clay component to build their permanent burrow systems and retain appropriate soil moisture conditions year round to maintain colonies (Van Praagh *et. al.* 2004). Many of the creek banks were also water-logged and prone to flooding. This also reduced their suitability to provide GGE habitat. Subsoil and surface hydrology play a key role in Giant Gippsland Earthworm distribution (Van Praagh *et al.* 2007) and while adequate soil moisture maintained year round is important for this species, it appears to be unable to survive in poorly drained soils.

### 3.2 30 Glovers Rd and 951 Yannathan Rd

Based on aerial photography and visual inspection from the road, the VRO mapping data and the results of the GGE assessment of the neighbouring property, it is very likely that these two properties do not support any suitable GGE habitat. There are no waterways located on the properties (GGE are most commonly found along the banks of waterways) and the sites are comprised of soils belonging to the Nyora Map Unit Association (VRO). This indicates that the sites consist of sandy soils, similar to the those found at 379 Lang Lang Poowong Rd.

While GGE records are found relatively close to the study area, Nyora is on the edge of the species range and the records they occur in a different soil type. There is a change in the soil west of Poowong where the dominant soil type is from the Strzelecki



Association with some soils from the Ripplebrook Association (VRO). These are largely derived from basaltic soils with clay loams to silty clay loams. It is in these soils that GGE are most commonly recorded.



**Plate 4** Soils with varying amounts of sand found at 379 Poowong Lang Lang Rd, Nyora

## 4 POTENTIAL IMPACTS

### General Threats

Most threats to GGE colonies involve disturbances to their soil habitat (physical and chemical) and alteration to local drainage patterns and water table levels. Any type of earthworks that disturb the soil can impact GGEs both directly and indirectly. Digging in GGE habitat destroys earthworm burrows and may kill individual earthworms and egg cocoons. This species is very fragile and individuals do not recover well, even from minor injury. Indirect impacts include compaction, contamination and actions that alter soil hydrological conditions. General threats associated to GGE habitat can be found in Table 1.

As no evidence of GGE was recorded from the study area there are no impacts to GGE colonies anticipated from the proposed residential development.

There are no impacts to **GGE** colonies anticipated from the proposed residential development as the study area did not support suitable habitat. The species was not recorded from 379 Lang Lang Poowong Rd and there is an extremely low likelihood of the species occurring at 51 Yannathan Rd and 30 Glovers Rd.

**Table 1 General Threats to GGE Colonies**

Threats	Impact
<p><b>Direct Disturbance</b></p> <p>Excavation of habitat for:</p> <ul style="list-style-type: none"> <li>- Housing, dams, pipelines and road construction</li> <li>- Roads, pipeline installation</li> <li>- Fill and alteration to natural topography</li> <li>- Soil compaction and churning from machinery</li> </ul> <p>Chemical disturbances</p> <ul style="list-style-type: none"> <li>-Run-off of pollutants, use of weedicides and herbicides.</li> </ul> <ul style="list-style-type: none"> <li>- Removal of existing vegetation</li> <li>- Destruction of stream bank integrity</li> </ul>	<p>Loss and degradation of habitat</p> <p>Death and injury of individuals and egg cocoons</p> <p>Fragmentation of colonies &amp; reduced gene flow</p> <p>Compaction and churning of soil resulting in loss of burrows</p> <p>Exposing burrows, changing hydrology and causing drying out of sites;</p>
<p><b>Hydrological Disturbance (within or adjacent to habitat)</b></p> <ul style="list-style-type: none"> <li>-Reduction or increase in surface and subsurface flows</li> <li>-Alteration of water table (drying or flooding)</li> <li>-Dense revegetation within or adjacent to habitat</li> </ul>	<p>Direct loss of habitat</p> <p>Loss of colonies</p> <p>Fragmentation of colonies &amp; reduced gene flow</p> <p>Drying out of soils</p> <p>Clearing of riparian vegetation</p>
<p><b>Changes in water quality</b></p> <ul style="list-style-type: none"> <li>-Run-off from roads and housing</li> </ul>	<p>Degradation of habitat through reduced water quality</p>



## 5 ENVIRONMENTAL POLICY AND LEGISLATION

This section explores environmental policy and legislation most pertinent to the Giant Gippsland Earthworm. However, it is not a comprehensive list of all legislation and the guidance provided does not constitute legal advice.

### 5.1 *Environment Protection and Biodiversity Conservation Act 1999*

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) establishes a process for assessment of proposed actions that are likely to have a significant impact on Matters of National Environmental Significance (NES). It applies to both public and private land.

A proponent is obliged to refer matters of NES the Commonwealth Environment Minister if an action is likely to have a significant impact to an endangered or critically endangered species, or on an 'important population' or critical habitat of a listed vulnerable species. The Department of Environment decides whether there will be a significant impact and if it needs to be a 'controlled action' and requires a formal assessment under the Act.

As the Giant Gippsland Earthworm is listed as **Vulnerable** under the EPBC Act, a referral to the Commonwealth Minister for DEWHA may be necessary if the works are deemed to have a significant impact on an **important population**. The criteria to consider in determining an important population under the Act are outlined below and the significant impact criteria for Vulnerable species are given in Table 2.

An 'important population' is a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are:

- key source populations either for breeding or dispersal
- populations that are necessary for maintaining genetic diversity, and/or
- populations that are near the limit of the species range.

**Table 2 Summary of significant impact criteria for *Vulnerable* EPBC Act listed**

Significant Impact Criteria
Criteria 1: Lead to a long-term decrease in size of an important population of a species
Criteria 2: Reduce the area of occupancy of an important population
Criteria 3: Fragment an important population into two or more populations
Criteria 4: Adversely affect habitat critical to the survival of a species
Criteria 5: Disrupt a breeding cycle of an important population
Criteria 6: Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
Criteria 7: Result in invasive species that are harmful to a vulnerable species becoming established in the species' habitat
Criteria 8: Introduce disease that may cause the species to decline
Criteria 9: Interfere substantially with the recovery of the species.

At present, there is insufficient information available to determine 'important' populations. However, the following factors that could be considered when assessing whether or not a GGE population/colony is "important":

- Relationship of colony to known distribution (outliers may have higher conservation significance)
- Size of the area occupied by the colony
- Density of colony
- Long term viability of the colony
- Evidence of recent activity (e.g. wet burrows and gurgles)
- Evidence of breeding (e.g. cocoons or breeding adults)
- Area of impact in relation to colony size
- Has been the subject of long-term monitoring

### **Implications**

The proposed residential development will not have a significant impact on the Giant Gippsland Earthworm as they were not recorded within the study area.

Further advice can be sought from the Department of Environment (DOE).

<http://www.environment.gov.au/epbc/publications/significant-impact-guidelines-11-matters-national-environmental-significance>).

A referral under the *EPBC Act 1999* is not required for GGE in relation to this proposed residential development.



## 5.2 Flora and Fauna Guarantee Act

The *Flora and Fauna Guarantee Act 1988* (FFG Act) is the key piece of Victorian legislation for the conservation of threatened species and communities and for the management of potentially threatening processes. The FFG Act lists:

- Threatened species of flora and fauna (genera, species, subspecies, varieties);
- Threatened communities of flora and fauna (the Threatened List);
- Protected flora; and
- Potentially threatening processes (the processes list).

Further information on the FFG Act can be found at:

<http://www.depi.vic.gov.au/environment-and-wildlife/threatened-species-and-communities/flora-and-fauna-guarantee-act-1988>

### **Implications**

A permit is required from DELWP if an action on public land proposes to collect, kill, injure or disturb protected flora and fauna and ecological communities. An FFG Act permit is generally not required for private land.

An *FFG Act* is not required in relation to GGE for this proposal as they were not recorded from the study area and no suitable habitat was identified.

## 5.3 Wildlife Act 1975

This Act forms the procedural, administrative and operational basis for the protection and conservation of native wildlife, specific use of, and prescriptions for access, prohibition and regulation of associated activities involving native wildlife within Victoria. This Act is the basis for the majority of wildlife permit/licensing requirements within the state. All terrestrial invertebrates listed under the *FFG Act 1988* are considered “wildlife”.

### **Implications**

The GGE is listed under the *FFG Act* and are thus considered “wildlife” for the purposes of this Act. A license is required under this Act to take or destroy wildlife. This includes any handling, salvage and translocation. It is not anticipated that any of these activities in relation to GGE will result from this proposal.

## 5.4 Victorian Planning Provisions

A number of state and local planning provisions require that local planning authorities give due consideration to the conservation requirements of threatened species and those listed under the *FFG Act*. The relevant provisions include Development Plan Overlays which serve to implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.

- *Development Plan Overlay (DPO)*

Schedule 10 of the Development Plan Overlay states that:

A flora and fauna report prepared by a suitably qualified person. The report(s) must consider:

A survey and assessment of impacts of the proposed development plan layout on the Giant Gippsland Earthworm habitat. This assessment must be conducted by a suitably qualified person to the satisfaction of the Department of Environment, Land, Water and Planning and the responsible authority

### Implications

This assessment supports the requirement to undertake a GGE survey and assessment of impacts of the proposed development.

Results of GGE survey and habitat assessment must be presented in a planning permit application to South Gippsland Shire Council.

## 5.5 Significance Overlays

Each municipality in Victoria is covered by a planning scheme, which sets out policies and provisions for the use, development and protection of land (zones and overlays). An overlay is a planning provision intended to ensure that important aspects of the land are recognised. Overlays indicate the type of development and/or protection, which may be appropriate in that area. This overlay details planning pathways to facilitate proponent requirements for planning applications where Giant Gippsland Earthworms have the potential to occur.

Development applications for land covered by GGE ES09 must be accompanied by an assessment of the potential impact on GGE habitat and must indicate how this negative impact has been avoided, minimised or offset.

**Implications**

This assessment supports the requirement to undertake a site assessment for developments mapped as potential GGE habitat under the ES09.

Results of GGE survey and habitat assessment must be presented in a planning permit application to South Gippsland Shire Council.

## 6 IMPACT MINIMISATION RECOMMEDATIONS

No GGE colonies should be impacted by the proposed residential development at 379 Lang Lang Poowong Rd, 30 Glovers Road, and 951 Yannathan Rd, Nyora as no evidence of the species was found and no suitable habitat identified. As a consequence, there are no impact minimisation recommendations required in relation to Giant Gippsland Earthworms.

Although it is very unlikely any unidentified GGE colonies would be accidentally uncovered as a result of this proposal, it is still a small risk given the size of the study area and the cryptic nature of this species. It is therefore recommended that:

- All key personnel working on the project take part in a site induction so that they are familiar with the identification of GGEs and the procedure should any undetected GGE populations be discovered (Attachment 1).

## 7 REFERENCES

- IUCN (International Union for Conservation of Nature) (2014). *Megascolides australis*. The IUCN Red List of Threatened Species. Version 2015.2
- Sargeant I. J. (1975). Soil survey. In M.A. Shapiro, (ed.). Westernport Bay Environmental Study. . Ministry of Conservation :Melbourne
- Smith, B. J. & Peterson, J. A. (1982). Studies of the Giant Gippsland Earthworm *Megascolides australis* McCoy, 1878. *Victorian Naturalist* 99:164-173.
- Van Praagh B (1992). The ecology, distribution and conservation of the Giant Gippsland Earthworm, *Megascolides australis* McCoy 1878. *Soil Biology and Biochemistry* 24:136
- Van Praagh B (1994). The biology and conservation of *Megascolides australis* (McCoy 1878). Unpublished Ph.D thesis, La Trobe University.
- Van Praagh, B. D. (1996). Reproductive biology of *Megascolides australis* McCoy (Oligochaeta: Megascolecidae). *Australian Journal of Zoology* 43:489-507
- Van Praagh B D, Yen A.L and Rosengren N (2004). Giant Gippsland Earthworm case study: Management of farm habitats for Earthworm conservation in South Gippsland. Part 1. Jumbunna. Report for Ecologically Sustainable Agriculture Initiative (ESAI) sub-project 05118.
- Van Praagh B D, Yen A.L and Rosengren N (2007).The conservation of the Giant Gippsland Earthworm, *Megascolides australis*, in relation to its distribution in the landscape. *Victorian Naturalist* Vol 124(4)
- Victorian Department of Sustainability and Environment. (2009). Advisory List of Threatened Invertebrate Fauna in Victoria - 2009. Department of Sustainability and Environment, East Melbourne, Victoria.
- VRO Victorian Resources online.  
<http://vro.agriculture.vic.gov.au/dpi/vro/vrosite.nsf/pages/vrohome>

### APPENDIX 1 Polygon of GGE distribution range in relation to study area at Nyora

