

Year 3 Annual Compliance Report for 191 Springberg Lane, Perry Bridge (EPBC 2016/7755)

Date: 6 July 2026

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Ref: 14592

1 Introduction

Ecology and Heritage Partners Pty Ltd was commissioned by Riverlee Caruso Epping Pty Ltd prepare an annual compliance report of the Growling Grass Frog *Litoria rainformis major* offsite offset site located at 191 Springberg Lane, Perry Bridge, Victoria in accordance with the Offsite Offset Management Plan (Ecology Australia 2020).

The offset site was established on 29 June 2023 as part of the EPBC approval (2016/7755) for the development at 215, 315W and 325C Cooper Street, New Epping.

1.1 Requirement for Compliance Report

The requirement for this compliance report is outlined in Section 9.1 of the Offset Management Plan (Ecology Australia 2020) and consists of a review of the annual landowner report and the annual Growling Grass Frog monitoring report.

1.2 Compliance Reporting Period

This compliance report covers third year of the establishment of the offset site from June 2025 to June 2026.

2 Compliance Findings

2.1 Non-compliance Findings

2.1.1 Disinfect equipment prior to use on site

Following the Year 1 audit a recommended was made to keep a log book of anyone entering the offset sites (i.e. ecolgosits) confirming that appropriate wash down procedures have been followed. While discussions with the landowner confirmed that no vehicles are permitted to enter the offset site to prevent the spread of diseases and weeds, and it was confirmed that those entering site (i.e. ecologists) wash down before entering, no evidence can be provided of this. Recommended that a logbook be kept for future site visits to document wash down procedure. Landowner confirmed that no offsite vehicles are allowed on covenant site.

2.1.2 *Growling Grass Frog Habitat Monitoring*

An assessment of floristics (i.e. plant species and their cover along two transects per wetland) was not undertaken during the Growling Grass Frog habitat monitoring. Floristic assessments must be undertaken in conjunction with Growling Grass Frog habitat monitoring for future surveys.

2.2 Further Recommendations

2.2.1 *Chytrid Control*

Section 5.10 of the Offset Management Plan states that following must occur:

- Wash vehicles before entering site.
- Disinfect equipment prior to use on site.
- Clean footwear prior to entry into the offset sites.

While the landowner confirmed that wash down is complete by those entering site (i.e. ecologists), no evidence can be provided of this.

A logbook be kept for future site visits to document anyone who enters the offset sites and confirm that wash down procedure has been followed.

2.2.2 *Growling Grass Frog Habitat Monitoring*

Section 5.11 of the OMP states that the following must occur:

- An assessment of the cover of floating and submergent vegetation.
- An assessment of the cover of emergent vegetation surrounding the wetland.
- An assessment of inter tussock areas in terrestrial habitat around wetlands.
- An assessment of the remaining terrestrial habitat dominated by mown grassy areas.
- An assessment of the cover of rocks and logs for calling, perching, basking, and overwintering habitat.
- An assessment of water quality and availability.
- An assessment of the area and cover of riparian fringing, emergent and floating/submergent vegetation.
- An assessment of water quality (i.e. temperature, electrical conductivity, salinity, pH, turbidity, dissolved oxygen).
- An assessment of average depth of each wetland and how full (%) each wetland is.

While qualitative data on Growling Grass Frog habitat was collected, quantitative data is required so that measurable comparisons can be made about the offset sites over time.

Future Growling Grass Frog habitat monitoring must include the collection of quantitative data on Growling Grass Frog habitat within the offset sites for during subsequent surveys.

2.3 Incidents

No incidents have been reported during management of the offset sites in Years 2 and 3.

Appendix 1 – Annual Landowner Report

Landowner(s):__John Robert Cromb **Site Reference:** TFN-C2029_2 (Off-INT9140-191 Springberg Lane-Perry Bridge)

Management Actions –Fencing, Photopoints, Erosion, Signage, Grazing, Burning

Year: 2025-2026

Year	Site and Zone(s) (e.g. 001/A)	Management action to be completed	Standard to be achieved (from OMP)	Description of action from OMP (Management actions and Targets are found listed in the Offset Management Plan appended to your Deed of Covenant)	Timing (From the OMP) (What time of year?)	Actions completed this year (yes/no) (if no state % completed)	Description of Action (What method of control did you use? E.g. Hand weeding/spot spray using glyphosate)	Comments and Observations (Have you noticed any changes in the vegetation, fauna or other features of the site e.g. have you found new species, have the weed/pest increased/ decreased/ remained the same?)
1	All	Fence offset sites to exclude stock and prevent access.	Livestock and Unauthorised vehicles excluded from the offset area (DSE 2009b)	Offset sites fenced in accordance with management standards (DSE 2009b). Gates kept closed at all times. Fences regularly inspected and repaired as necessary. Exclude stock, unauthorised access and vehicles from the offset area. Construct and maintain fencing to the cattle and sheep standard outlined in DSE (2009b). If new fences are required to control new and emerging threats, fencing design will incorporate the standards outlined above for stock.	With a month of this OMP coming into force.	Yes	Regular weekly checks	Fences in good order
		Increase freshwater wetland area at offset sites	The area of freshwater wetlands will be increased at both offset sites. At the southern offset site, at least three small wetlands will be constructed at the northern end of	-At southern offset site, construct at least 3 small wetlands as outlined in Figure 7 to capture surface runoff. - At the northern offset site: -Construct a small, deep perched wetland adjacent to the existing soak to be fed by overflow from the existing soak. -Remove the pipe that allows flow under the causeway, raise the	Within 1 year of commencement of OMP	Yes		Completed 4 years ago

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			the offset site to capture overland flows following rainfall. At the Northern offset, a small, deep, perched wetland will be constructed adjacent to the existing soak, which will be fed by overflow from the soak. In addition, the pipe will be removed from the causeway in the south eastern corner of the offset site, and the causeway upgraded. This will allow overflows from the spring and overland flows down the small drainage line to backfill and pool upstream of the causeway. Construction of additional wetlands done in a sensitive way to minimise	causeway and create a slightly lower, strengthened area to allow for overflows. This will allow the area upstream of the causeway to backfill due to overflow from the existing soak and overland flows, creating a large area of wetland habitat. - Wetlands to be constructed to minimise damage to Growling Grass Frog habitat, such as construction using a long armed excavator from outside the offset and avoiding dense vegetation where Growling Grass Frogs may be sheltering. Where vegetation may be impacted, pre clearance searches and relocation may be required.		Yes		Completed 4 years ago

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			environmental impact.					
1-10		Maintain existing spring fed soak at northern offset site.	Maintain the existing conditions in the existing soak at the northern offset site. Overflow can be used to maintain new constructed wetlands at the northern offset site	The existing soak at the northern offset site will be maintained in its current form, with dense fringing vegetation and areas of submergent and floating vegetation.	Ongoing	Yes	Monitored	
1-10		Management of natural recruitment	<10 m from wetlands, cover of native trees and shrubs >2 m should be kept below 20% >10 m from wetlands, cover of native trees and shrubs >2 m should be kept below 50% Cover of trees >5 m tall should not exceed 10% across the offset sites.	Recruitment of trees and shrubs should be controlled where required. Cover should be controlled depending on distance from wetlands and size of trees and shrubs as follows: -Within 10 m of each wetland, cover of trees and shrubs over 2 m should be kept below 20%. If cover exceeds 20%, cover of shrubs and trees should be reduced to <10%. -More than 10 m from wetlands, cover of trees and shrubs over 2 m should be kept below 50%. If cover exceeds 50%, cover of shrubs and trees should be reduced to <20%. -Cover of trees over 5 m tall should not exceed 10% throughout each offset site.	Annually in spring	Yes	Monitored	

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				The removal or damage of native vegetation will require pre-approval by Trust for Nature to temporarily waive the relevant provisions of the Conservation Covenant.				
1	Southern Offset site	Manage salinity	Saline inflows from Perry River reduced as a result of any infill works. Small constructed wetlands function as additional freshwater refuges on site.	Investigate the potential to fill in low areas along the riverbank of the Perry River to reduce saline inflows during very high tide events (e.g. king tides with strong winds) -Modification to bank height will be done in a sensitive manner to reduce potential impacts to Growling Grass Frogs and their habitat (e.g. using a long armed excavator from the unvegetated wetland). Construct at least three small freshwater wetlands to intercept surface flows before they enter the wetland.	Within 1 year of commencement of OMP	No	Unable to complete until next drought	
1	Northern offset site	Manage salinity	An additional perched wetland constructed. The causeway upgraded.	At the northern offset site -Construct a perched wetland adjacent to the existing soak, to be fed by overflow from the soak. -Remove the pipe under the causeway and raise the causeway, to inundate the existing drainage swale and reduce saline intrusion from the Perry River into this site.	Within 1 year of commencement of OMP	Yes	Causeway raised further last year	Completed 4 years ago

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				- Improve that causeway to reduce saltwater intrusion from the Perry River and increase area of freshwater habitat.		Yes	No chance of river inflows now	
1		Overwintering Sites	Add logs and large rocks/boulders to the offset sites within the first year of the OMP	Place more logs and rocks at each offset site to provide more overwintering sites for Growling Grass Frogs.	Within the first year of the OMP	Yes		Completed 4 years ago
1-10		Manage Wetland depth and vegetation cover	-Emergent vegetation cover <50% in all wetlands. -Depth of wetlands has not declined by 25% due to sediment deposition.	- Monitor vegetation cover and depth of wetlands. - If emergent vegetation cover exceeds 50%, remove emergent vegetation so cover is reduced to approximately 10%. - If depth of wetlands decreases by 25% due to deposition of sediments, remove sediments. - A maximum of 50% of wetlands will have their vegetation/sediment removed in a 12 month period	Monitor annually, control as required	Yes	None required	
1-10		Chytrid Control	-Wash down and disinfect vehicles, equipment and footwear before working in and around wetlands -No major Growling Grass Frog population declines	When working in the offset sites: -Clean vehicles coming on site and/or ensure vehicles have been washed down immediately prior to coming on site. Offset Management Plan: 191 Springberg Lane, Perry Bridge Final 39	Ongoing	Yes	No offsite vehicles allowed on covenant sites	

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			outside of expectations based on annual conditions.	- Clean and disinfect equipment to minimise the risk of introducing or spreading chytrid fungus. -Clean and disinfect footwear when working around Growling Grass Frog habitats. Monitor the cover of shrubs or trees > 2m tall within 10 m of wetlands and control them as required, to ensure that wetlands are not shaded.		Yes	Not required this year	
1-10	All	Growling Grass Frog population monitoring	- Growling Grass Frog population surveyed twice annually. - Populations not declining beyond what is expected based on conditions.	The Growling Grass Frog population and habitat will be monitored twice annually. Growling Grass Frog population and habitat surveys as outlined above will be conducted twice per year for 10 years following onset of this OMP. Specific triggers for further management actions are as follows: - A decline of $\geq 10\%$ in the number of individuals recorded during summer surveys over each of three successive years. - An overall decline of $>25\%$ in annual average number of individuals recorded during summer surveys over a three-year period. - A decline of $>50\%$ in a single year.	Monitoring will occur twice over each breeding/active season (preferably once in Nov/Dec and again in Jan/Feb)	Yes	Ecologist spring summer autumn surveys	

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1-10	All	Growling Grass Frog habitat monitoring	- Habitat monitored twice annually, and supports features preferred by Growling Grass Frogs.	Each spring and autumn, Growling Grass Frog habitat quality will be assessed to identify any major changes to the habitat on site, with particular attention given to whether the habitat variables preferred by Growling Grass Frog at each wetland have changed. Habitat quality will be assessed biannually: • Vegetation cover and area • Floristics • Water quality • Pond depth • Sedimentation • Terrestrial habitat	Annually in spring and autumn.	Yes	Ecologist surveys	

Management Actions –Pest animals

Year	Site and Zone(s) (e.g. 001/A)	Management action to be completed	Standard to be achieved (from OMP)	Description of action from OMP (Management actions and Targets are found listed in the Offset Management Plan appended to your Deed of Covenant)	Timing (From the OMP) (What time of year?)	Actions completed this year (yes/no) (if no state % completed)	Description of Action (What method of control did you use? E.g. Hand weeding/spot spray using glyphosate)	Comments and Observations (Have you noticed any changes in the vegetation, fauna or other features of the site e.g. have you found new species, have the weed/pest increased/ decreased/ remained the same?)
1-10	All	Pest animal Control - Rabbits	Foxes, rabbits and hares not present within 500 m of offset site.	Rabbits will be monitored biannually in spring and autumn at the same time as habitat monitoring, and controlled where found. If rabbits are found on site, an integrated approach using fumigation, hand collapsing of burrows and baiting will be used to control rabbits (DSE 2012b). Carcasses will be removed to prevent native predators being poisoned.	Monitored biannually in Spring and Autumn. Monitoring ongoing and control as required	Yes	None present	
1-10	All	Pest animal Control - Foxes		Foxes will be controlled if recorded at the property. If found, fox dens will be destroyed via fumigation followed by hand collapse.	Monitoring ongoing and control as required	Yes	Shooting and bait control	
1-10	All	Pest animal Control - Hares		Hares will be monitored biannually in spring and autumn at the same time as habitat monitoring, and controlled where found.	Monitored biannually in Spring and Autumn. Monitoring ongoing and control as required	Yes	Shooting	
1-10	All	Pest animal Control - Deer	Deer are kept at low abundance.	Deer species including Hog Deer species should be controlled on site. Deer species except for Hog Deer can be controlled on private property without a permit. Controlling Hog Deer on private property requires an Authority to Control Wildlife Permit from DELWP.	Monitoring ongoing and control as required	Yes	Shooting in April every year	

Year	Site and Zone(s) (e.g. 001/A)	Management action to be completed	Standard to be achieved (from OMP)	Description of action from OMP (Management actions and Targets are found listed in the Offset Management Plan appended to your Deed of Covenant)	Timing (From the OMP) (What time of year?)	Actions completed this year (yes/no) (if no state % completed)	Description of Action (What method of control did you use? E.g. Hand weeding/spot spray using glyphosate)	Comments and Observations (Have you noticed any changes in the vegetation, fauna or other features of the site e.g. have you found new species, have the weed/pest increased/ decreased/ remained the same?)
1-10	All	Pest animal Control – Predatory Fish		Fish will continue to be excluded from these wetlands – improving the causeway at the northern site and building up low areas along the riverbank at the southern offset site will reduce the likelihood of fish colonising wetlands. However, if wetlands are found to be colonised by predatory fish, they will be allowed to dry out naturally by diverting spring waters. However, only 50% of wetlands at an offset site will be allowed to dry out in a single year.	Monitoring ongoing and control as required	Yes	Causeway raised further last year	No chance of river getting into North offset now
1-10	All	New and emerging pest animal species	N/A	Monitoring will also be used to identify new and emerging pest species. New pest species identified on site will be controlled.	Monitoring ongoing and control as required		Monitoring as required	

Management Actions –Introduced plant species

*New and emerging weeds should also be documented here

The targets of either to control or eliminate should be reached by the end of the 10 year offset period

Year	Site and Zone(s) (e.g. 001/A)	Species	Baseline Cover abundance	Standard to be achieved (from OMP)	Description of action from OMP (Management actions and Targets are found listed in the Offset Management Plan appended to your Deed of Covenant)	Timing (From the OMP) (What time of year?)	Actions completed this year (yes/no) (if no state % completed)	Description of Action (What method of control did you use? E.g. Hand weeding/spot spray using glyphosate)	Comments and Observations (Have you noticed any changes in the vegetation, fauna or other features of the site e.g. have you found new species, have the weed/pest increased/ decreased/ remained the same?)
High Threat Weeds (Woody Weeds)									
		Blackberry <i>Rubus fruticosus</i> <i>spp. agg.</i>		Infestations of woody weeds to be controlled within 1 month of this OMP coming into force. All woody weeds encountered on site eradicated.	Monitor the site for weeds annually in spring. Eradicate woody weeds encountered on site prior to them setting seed. Where possible, physical removal should be the favoured method of control. Herbicides use should be avoided where possible. When used, herbicides should be applied: - Using wick wiping rather than spraying as much as possible. -Using non-residual herbicides with reduced toxicity to aquatic animals (e.g. RoundUp Biactive) -More than 2 m from water bodies. Areas where woody weeds were controlled should be regularly inspected for regrowth, and any regrowth controlled before setting seed.	Within 1 month of this OMP coming into force. Annually in spring thereafter	Yes	Spot spraying ongoing with roundup bioactive	

Year	Site and Zone(s) (e.g. 001/A)	Species	Baseline Cover abundance	Standard to be achieved (from OMP)	Description of action from OMP (Management actions and Targets are found listed in the Offset Management Plan appended to your Deed of Covenant)	Timing (From the OMP) (What time of year?)	Actions completed this year (yes/no) (if no state % completed)	Description of Action (What method of control did you use? E.g. Hand weeding/spot spray using glyphosate)	Comments and Observations (Have you noticed any changes in the vegetation, fauna or other features of the site e.g. have you found new species, have the weed/pest increased/decreased/ remained the same?)
Herbaceous weeds									
		Herbaceous weeds		-Cover of herbaceous weeds not to exceed current levels. -Cover of target weeds <1% by the end of the 10 year management plan. -No new threatening weeds on site.	Monitor weed cover across the offset site. Current levels to be determined during first year of monitoring. Use physical removal where possible and where herbicides are used, use less toxic herbicides and use wet wicking as much as possible to reduce off target impacts (i.e. to native vegetation and wetlands)	Annually in Spring	Yes	Ongoing monitoring	
		Tall Wheat-grass <i>Lophopyrum ponticum</i> (High Threat)		Cover of high threat weeds does not increase, and preferably cover declines.	Remove manually or spot spray with an appropriate herbicide. Use physical removal where possible and where herbicides are used, use less toxic herbicides and use wet wicking as much as possible to reduce off target impacts (i.e. to native vegetation and wetlands).	Remove manually at any time, spot spray in spring.	Yes	Spot spray as required with roundup bioactive	None on site but some on adjacent site north of southern offset

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		New and emerging high threat weeds		No new threatening weeds on site.	Monitor and eliminate new and emerging weeds	Annually in Spring	Yes	No new threats	

Additional Comments: _____

PHOTO POINT MONITORING SHEET

Photo Point Number	Location of Photo Point	Site and Zones	Direction	Date	Notes/Observations	Photo
PP1	North Pond North End	001/A	60°N	13/1/2018		

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Photo Point Number	Location of Photo Point	Site and Zones	Direction	Date	Notes/Observations	Photo
PP2	<u>North Pond</u> <u>South End</u>					

* Please email this form along with your photopoints to Trust for Nature at offsetsreporting@tfn.org.au

Photo Point Number	Location of Photo Point	Site and Zones	Direction	Date	Notes/Observations	Photo
PP3	<u>South Pond</u> <u>South End</u>					

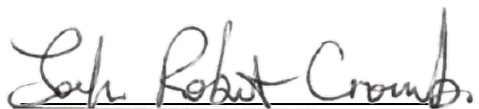
Photo Point Number	Location of Photo Point	Site and Zones	Direction	Date	Notes/Observations	Photo
PP4	<u>South Pond Middle South</u>					

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Photo Point Number	Location of Photo Point	Site and Zones	Direction	Date	Notes/Observations	Photo
PP5	South Pond North End North					

Please insert here or attach separately any supporting documentation (i.e. receipts for works completed, photos of works etc.)

I hereby declare that the supplied information contained within this report is accurate and complies with all the reporting requirements under the Offset Management Plan

Signed: 

Name: J Robert Cromb

Date: 23/03/2026



*** Please email this form along with your photopoints to Trust for Nature at offsetsreporting@tfn.org.au**

Appendix 2 – Growling Grass Frog Monitoring Report

**PERRY BRIDGE:
GROWLING GRASS FROG ANNUAL
MONITORING 2025 – 2026
EPBC PERMIT 2016/7755**

May 2026



PERRY BRIDGE:

GROWLING GRASS FROG ANNUAL MONITORING 2025 – 2026

EPBC Permit 2016/7755

Date:

May 2026

Client:

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Document history:

REVISION	DATE	DETAILS	AUTHORISATION
01	10-May-2026	Draft for review	Ecocentric
02	21-May-2026	Final for comments	Ecocentric & client

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TABLE OF CONTENTS

1. INTRODUCTION	1
1.1 STUDY AREA	3
1.1.1 Wetland complex 01 (central): Aurora Offset	5
1.1.2 Wetland 02 (northern): New Epping Offset	6
1.1.3 Wetland 03 (southern): New Epping Offset.....	7
1.1.4 Wetland System 04 (western): New GGF habitat.....	8
1.2 PERFORMANCE TARGETS	9
2. METHODOLOGY	10
2.1 DESKTOP REVIEW.....	10
2.2 GGF TARGETED SURVEYS.....	10
2.3 WATER QUALITY MONITORING	12
2.4 EDNA SAMPLING	12
3. RESULTS	13
3.1 HISTORICAL GGF SURVEY RESULTS	13
3.2 WETLAND CONDITIONS.....	14
3.3 CURRENT GGF SURVEY RESULTS	15
3.4 EASTERN GAMBUSIA SURVEY RESULTS	21
3.5 WATER QUALITY MONITORING RESULTS	22
3.6 EDNA SAMPLING RESULTS	22
4. COMPLIANCE WITH EPBC OMP PERFORMANCE CRITERIA	24
5. DISCUSSION	32
5.1 GGF NUMBERS	32
5.2 EASTERN GAMBUSIA.....	32
5.3 EDNA	33
5.4 WATER QUALITY	33
5.5 WEED AND FERAL ANIMAL CONTROL	34
6. CONCLUSIONS AND RECOMMENDATIONS	35
7. LIMITATIONS	36
8. REFERENCES	37
8.1.1 Additional references	39
9. APPENDICES	41
9.1 MAPPING.....	41

LIST OF FIGURES

FIGURE 2. PROPERTY AND WETLAND SYSTEMS	4
FIGURE 3. WETLAND 02: CALL-BACK / SPOTLIGHT / BAIT-TRAP / DIP-NET SITES AND TRANSECTS	17
FIGURE 4. WETLAND 03: CALL-BACK / SPOTLIGHT / BAIT-TRAP / DIP-NET SITES AND TRANSECTS	18
FIGURE 5. ADULT MALE GGF CALL-BACK RECORDS, WETLAND 02 (NORTHERN)	20
FIGURE 6. ADULT MALE GGF CALL-BACK RECORDS, WETLAND 03 (SOUTHERN).....	21

LIST OF TABLES

TABLE 1. EPBC PERMITS AND PROJECT SUMMARY	1
TABLE 2. WETLAND 02 (NORTHERN) HISTORICAL SURVEY RESULTS	13
TABLE 3. WETLAND 03 (SOUTHERN) HISTORICAL SURVEY RESULTS	14
TABLE 4. SEASON 2025 – 2026, WETLAND 02 (NORTHERN).....	19
TABLE 5. SEASON 2025 – 2026, WETLAND 03 (SOUTHERN)	19
TABLE 6. HISTORICAL AND CURRENT WATER QUALITY MONITORING RESULTS, WETLAND 02 (NORTHERN)..	22
TABLE 7. HISTORICAL AND CURRENT WATER QUALITY MONITORING RESULTS, WETLAND 03 (SOUTHERN)..	22
TABLE 8. STATUS SEASON 2025 – 2026, WETLANDS 02 (NORTHERN) AND 03 (SOUTHERN)	25

ACKNOWLEDGEMENTS

Ecocentric acknowledges the following persons, agencies and companies for their contributions to this study and report:

- Robert Cromb: Landowner
- Martin Potts: Greening Australia
- Professor Geoff Heard: UNU and UQ
- Gondwanan Ecosystems Management Pty Ltd

ACRONYMS / ABBREVIATIONS

TERM	DEFINITION
BCS	Bioregional Conservation Status
CaLP Act 1994 (Vic)	Victorian Catchment and Land Protection Act 1994
Cwlth	Commonwealth
DSH / DBH	Diameter at Standard Height / Diameter at Breast Height
DCCEEW	Federal Department of Climate Change, Energy, the Environment and Water (formerly DAWE)
DEECA	Victorian Department of Energy, Environment and Climate Action (formerly DELWP)
EPBC Act 1999 (Cwlth)	Commonwealth Environment Protection and Biodiversity Conservation Act 1999
EVC	Ecological Vegetation Class
EDD	Extended Detention Depth
FFG Act 1988 (Vic)	Victorian Flora and Fauna Guarantee Act 1988
GIS	Geographical Information System (mapping system)
MNES	Matter of National Environmental Significance
NTW	Normal Top Water Level
P&E Act 1987 (Vic)	Victorian Planning and Environment Act 1987
SBV	Strategic Biodiversity Value
TPZ	Tree Protection Zone
VBA	DEECA's Victorian Biodiversity Atlas
VQA	Vegetation Quality Assessment

GLOSSARY

TERM	DEFINITION
Bioregion	Biogeographical areas that capture the patterns of ecological characteristics in the landscape or seascape, providing a natural framework for recognising and responding to biodiversity values.
Bioregional Conservation Status (BCS of an EVC)	A state-wide classification of the degree of depletion in the extent and/or quality of an Ecological Conservation Class (EVC) within a bioregion in comparison to the State's estimation of its pre-1750 extent and condition.
Canopy tree	See 'Native Canopy Tree'.
Diameter at Standard Height (DSH); formerly Diameter at Breast Height (DBH)	The diameter of the trunk of a tree measured over bark at 1.3m above ground level.
Drip line	The outermost boundary of a tree canopy (leaves and/or branches) where the water drips onto the ground.
Ecological Vegetation Class (EVC)	A type of native vegetation classification that is described through a combination of its floristic, life form and ecological characteristics, and through an inferred fidelity to particular environmental attributes. Each EVC includes a collection of floristic communities (i.e. lower level in the classification that is based solely on groups of the same species) that occur across a biogeographical range, and although differing in species, have similar habitat and ecological processes operating.
EVC Benchmark	A standard vegetation quality reference point relevant to the vegetation type that is applied in habitat hectare assessments. Represents the average characteristics of a mature and apparently long-undisturbed state of the same vegetation type.
General Offset	A General Offset is required when the removal of native vegetation does not have a significant impact on any habitat for rare or threatened species.
General Habitat Unit	A General Habitat Unit is a measure of loss (and Gain in an Offset Site) in overall biodiversity value of native vegetation (both patch and scattered tree).
General Habitat Unit Offset target	A General Habitat Unit Offset target is that quantity of General Habitat Units that are to be secured to ensure that there is 'no net loss' in biodiversity value associated with the clearance of native vegetation (both patch or scattered tree). The General Habitat Units secured for an Offset target must meet the following attribute requirements: ○ <i>Minimum strategic biodiversity value score</i>: the strategic biodiversity value score of the Offset Credits must be at least 80 per cent of the strategic biodiversity value score of the native vegetation to be removed; ○ <i>Vicinity</i>: the offset must be located within the same Catchment Management Authority boundary or municipal district as the native vegetation to be removed.
Habitat Hectare	A site-based measure of quality and quantity of native vegetation that is assessed in the context of the relevant native vegetation type.

TERM	DEFINITION
Habitat score	The score assigned to a Habitat Zone that indicates the quality of the vegetation relative to the EVC benchmark – sum of the site condition score and landscape context score usually expressed as a percentage or as a decimal fraction of 1.
Habitat Zone	A discrete area of native vegetation consisting of a single vegetation type (EVC) with an assumed similar quality. This is the base spatial unit for conducting a habitat hectare assessment.
High threat weed	Introduced plant species (including non-indigenous 'natives') with the ability to out-compete and substantially reduce one or more indigenous life forms in the longer term, assuming on going current site characteristics and disturbance regime.
Location Category	There are three location categories that indicate the potential risk to biodiversity from removing a small amount of native vegetation. These location categories are identified by DEECA as follows: - Location 3 – includes locations where the removal of less than 0.5 hectares of native vegetation could have a significant impact on habitat for a rare or threatened species. - Location 2 – includes locations that are mapped as endangered EVCs and/or sensitive wetlands and coastal areas and are not included in Location 3. - Location 1 – includes all remaining locations in Victoria.
Mapped wetlands	Mapped wetlands may or may not be visible on the ground and are treated as a patch of native vegetation for the purpose of Offsets unless they are covered by a hardened, man-made surface, for example, a roadway. The location and extent of mapped wetlands are available in NVIM and other DEECA GIS mapping systems.
Matters of National Environmental Significance (MNES)	There are nine MNES identified under the EPBC Act 1999 (Cwlth): World Heritage properties; National Heritage places; wetlands of international importance (listed under the Ramsar Convention); listed threatened species and ecological communities; migratory species protected under international agreements; Commonwealth marine areas, the Great Barrier Reef Marine Park; nuclear actions (including uranium mines); and water resources in relation to coal seam gas development and large coal mining development.
Native Canopy Tree	A native canopy tree[^] is either: - a patch tree; a native canopy tree within a patch of native vegetation (see definition below); or, - a scattered tree; a native canopy tree that does not form part of a patch of native vegetation (see definition below). [^] A native canopy tree is a mature tree (i.e. able to flower) that is greater than 3 m in height and is normally found in the upper layer of the relevant vegetation type. A permit is required to remove a standing dead tree if it has a DSH of 40 centimetres or more and it is taller than 3 metres. Standing dead trees (stags) with a DSH greater than 40cm are identified as large patch or scattered trees, or, if the species is known, they are identified as large or small patch or scattered trees by the relevant EVC benchmark. (see also 'patch of native vegetation' definition below)
Native vegetation	Native vegetation is defined in the Victoria Planning Provisions as 'plants that are indigenous to Victoria, including trees, shrubs, herbs and grasses'.

TERM	DEFINITION
No Net Loss	An outcome where a particular gain in the contribution to Victoria's biodiversity is equivalent to an associated loss in the contribution to Victoria's biodiversity from permitted clearing.
Notional Root Zone (NRZ)	Calculated as 12 times the Diameter at Standard Height (DSH) of a tree or greater (based on AS 4970:2025 <i>Protection of trees on development sites</i>) being the soil volume required to encompass sufficient absorbing tree root systems to ensure the long-term survival of a tree. Trees may be considered as lost (and may require an Offset) if there are surface and/or sub-surface construction impacts within the NRZ. There are three categories of NRZ impacts: 1. Minor - Encroachment $\leq 10\%$ of NRZ and no Structural Root Zone (SRZ) intrusion is deemed to be minor encroachment provided there have been no other known recent NRZ encroachments. It is unlikely that there will be a significant impact to tree health, however protection should be implemented during site works. 2. Moderate - NRZ encroachment of between 11-20% with no SRZ intrusion. The impacts must be reviewed by a project arborist and undertake any other necessary investigation required to demonstrate the tree will remain viable. This may be through the implementation of suitable design measures and construction controls to mitigate impacts including development of Tree Protection Specifications. 3. Major - NRZ encroachment $>20\%$ and/or SRZ intrusion is deemed major encroachment. The project arborist must demonstrate that the tree(s) would remain viable. This may require root investigation by non-destructive methods, soil analysis, review of historical records and consideration of relevant factors such as tree health, vigour, stability and species sensitivity. Measures to control and mitigate impacts during development should be detailed in Tree Protection Specifications. NB: any impacts to the SRZ are deemed to be a major encroachment.
Offset	Protection and management (including revegetation) of native vegetation at a site to generate a gain in the contribution that native vegetation makes to Victoria's biodiversity. An Offset is used to compensate for the loss to Victoria's biodiversity from the removal of native vegetation. Offsets are to be secured in perpetuity with an on-Title conservation covenant.
Offset target	The amount of Offset required, measured in Habitat Units, to ensure permitted clearing of native vegetation results in no net loss in the contribution made by native vegetation to Victoria's biodiversity.

TERM	DEFINITION
Patch of native vegetation	A patch of native vegetation is either: ○ an area of vegetation where at least 25 per cent of the total perennial[^] understorey plant cover* is native; or ○ any area with three or more native canopy trees where the drip line of each tree touches the drip line of at least one other tree, forming a continuous canopy; or ○ any mapped wetland included in the 'Current wetlands map', available in DEECA's NVR Map (available online). [^] Plant species that have an annual growth form, or typically have significant seasonal fluctuations in foliage cover (to the extent it would influence whether an area is/is not considered a patch on a seasonal basis) are not included in the perennial understorey plant cover estimate for the purpose of defining a patch. * Plant cover is the proportion of the ground that is shaded by vegetation foliage when lit from directly above. Areas that include non-vascular vegetation (such as mosses and lichens) but otherwise support no native vascular vegetation are not considered to be a patch for the purposes of the Guidelines. However, when non-vascular vegetation is present with vascular vegetation, it does contribute to cover when determining the percentage of perennial understorey plant cover. (see also 'native canopy tree' definition above)
Perennial understorey	Plants that usually live for more than two years and are found in the lower layers of vegetation, like grasses and shrubs.
Plant cover	The proportion of the ground that is shaded by vegetation foliage when lit from directly above.
Protection (of a tree)	An area with twice the canopy diameter of the tree(s) fenced and protected from adverse impacts: grazing, burning and soil disturbance not permitted, fallen timber retained, weeds controlled, and other intervention and/or management if necessary, to ensure adequate natural regeneration or planting can occur.
Recruitment	The production of new generations of plants, either by allowing natural ecological processes to occur (regeneration etc.), by facilitating such processes, or by actively revegetating (replanting, reseeding). See revegetation.
Revegetation	Establishment of native vegetation to a minimum standard in formerly cleared areas, outside of a remnant patch.
Species – General Offset Test	The species-general offset test measures the proportional impact from the removal of native vegetation on the habitat of rare or threatened species, according to the <i>Habitat importance maps</i> , and compares this to the species offset threshold.
Species Habitat Unit	A Species Habitat Unit is a measure of loss (and Gain in an Offset Site) in biodiversity value of native vegetation (both patch and scattered tree) for a particular rare or threatened species.
Species Habitat Unit Offset target	A Species Habitat Unit Offset is required when the removal of native vegetation has a significant impact on habitat for a rare or threatened species. Species Offsets must compensate for the removal of that particular species' habitat.
Strategic Biodiversity Value (SBV)	The Strategic Biodiversity Value is a rank of a location's complementary contribution to Victoria's biodiversity, relative to other locations across the state with regard to its condition, extent, connectivity and the support function it plays for species.

TERM	DEFINITION
Structural Root Zone (SRZ)	Encompasses the structural roots that are critical to the tree's stability, mechanical support, and anchorage; encompasses the woody roots and the associated soil cohesion necessary to keep the tree upright during environmental stresses like wind.
Tree Protection Zone (TPZ)	Actual area that is fenced to protect a tree; generally encompasses the Notional Root Zone (NRZ) and Structural Root Zone (SRZ) of a tree (based on <i>AS 4970:2025 Protection of trees on development sites</i>). TPZs are to be outlined in Tree Protection Specifications (TPS), and shown in a Tree Protection Plan (TPP).
Vegetation Quality Assessment (VQA)	A site-based vegetation assessment method that measures the condition of native vegetation against a benchmark for the same vegetation type or Ecological Vegetation Class (EVC), where the benchmark represents the average mature condition of the EVC being assessed prior to European settlement. This is the method approved by the Department of Energy, Environment and Climate Action (DEECA) for assessing native vegetation for the purposes of regulation and investment. Qualified assessors undertake VQAs to determine the loss from clearing native vegetation and gains available at offset and investment sites.
Wetlands	See 'Mapped wetlands'.

1. INTRODUCTION

Ecocentric Environmental Consulting (Ecocentric) was engaged to conduct ecological monitoring of Growling Grass Frog (*Ranoidea raniformis*; formerly *Litoria raniformis*) (GGF) populations at three wetland systems within the property at 191 Springberg Lane, Perry Bridge, 3862, Victoria. The wetlands are covenanted and managed for the generation of Offset Credits for the mitigation of GGF habitat losses associated with two residential developments in Melbourne, namely: the New Epping Estate, in Epping, approximately 20km north of the Melbourne Central Business District (with EPBC Permit 2016/7755); and the Aurora Estate, in Epping North (with EPBC Permit 2007/3524). This report provides details of surveys conducted in accordance with EPBC Permit 2016/7755 for the New Epping Estate, and reports on progress towards the delivery of the Ecology Australia (2019) *Offset Management Plan: 191 Springberg Lane, Perry Bridge (EPBC 2016/7755)*; report for Verve Projects.

GGF is listed as vulnerable (listing advice 16-July-2000) under the EPBC Act (EPBC SPraT Database online 2025¹), and listed as vulnerable (listing advice March-2025) under the FFG Act (FFG Threatened List online 2025²).

On-going monitoring of GGF at the offset sites is a compliance requirement of the aforementioned EPBC Permits and conditions set out therein.

Table 1 below identifies the projects, the EPBC Permits and the on-site wetlands utilised for the generation of Offset Credits in accordance with the Commonwealth's *Environment Protection and Biodiversity Conservation (EPBC) Act Environmental Offset Policy* (DSEWPC 2012³; hereafter the EPBC Environmental Offset Policy).

Table 1. EPBC Permits and project summary

PROJECT / PERMIT	PROPONENT	MNES LOSS	GGF OFFSET AREA
New Epping Estate EPBC Permit 2016/7755	Riverlee Caruso Epping Pty Ltd	Loss of 17.39 hectares of GGF habitat – 68.7% to be offset onsite, 31.7% (5.51 hectares) to be offset at Perry Bridge.	Two offset sites totalling 6.9 hectares for the protection of GGF.
Aurora Estate EPBC Permit 2007/3524	Development Victoria (current proponent) & Lendlease Communities (Australia) Ltd (proposed incoming proponent)	Significant impacts to GGF population at one artificial dam, originally to be offset onsite with new habitat and the establishment of a self-sustaining GGF population. In the absence of a self-sustaining population establishing in the new habitat, an offsite offset is now required.	10 hectares minimum for the protection of GGF.

The landowner is required to submit a report detailing the results of GGF monitoring to the Federal Department of Climate Change, Energy, the Environment and Water (DCCEEW) in accordance with

¹ http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1828

² <https://www.environment.vic.gov.au/conserving-threatened-species/threatened-list>

³ <https://www.dcceew.gov.au/environment/epbc/publications/epbc-act-environmental-offsets-policy>

conditions set out in the respective GGF EPBC Offset Management Plans (OMPs). In general, the annual report must include:

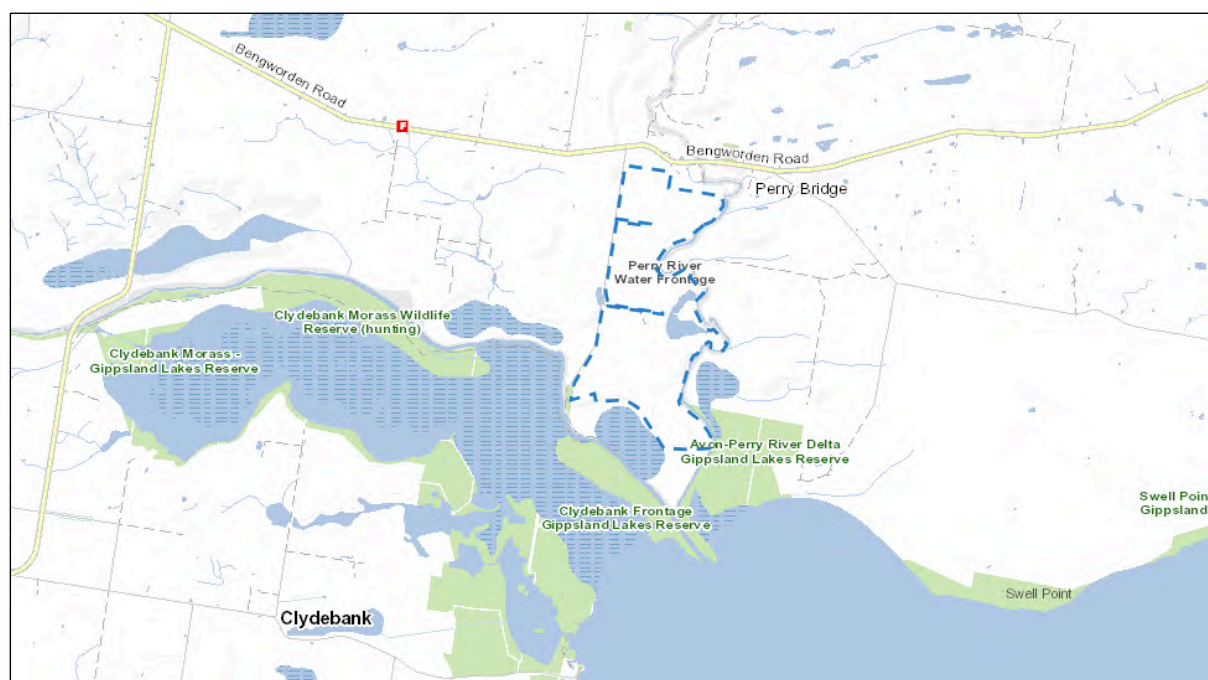
- Details of management actions, including on ground works, undertaken within the reporting period;
- Results of targeted surveys for GGF and the GGF population;
- Site photographs;
- Details of compliance or non-compliance with the schedule of management actions; and
- Details of compliance or non-compliance with performance targets.

Targeted survey monitoring of GGF at this site has previously been conducted by Gondwanan Ecosystems Management Pty Ltd (GEM) during the summer breeding seasons of 2021 – 2022, 2022 – 2023 and 2023 – 2024, and by Ecocentric during the summer breeding season of 2024 – 2025. Survey results from previous monitoring rounds are provided in Section 3.1 below.

This report additionally includes results from the most recent round of targeted surveys for GGF, conducted by Ecocentric during the summer breeding season of 2025 – 2026. The targeted surveys were conducted using call playback, dip-net and bait trap methodologies, in accordance with Federally approved survey guidelines, and as required by the respective GGF EPBC OMPs. Results from this round of surveying are provided in Section 3.2, and compliance progress with the GGF EPBC OMPs is reported in Section 4.

The property is identified as 191 Springberg Lane, Perry Bridge 3862 and comprises multiple parcels (SPI: 1\PS818354; 0B~5\PP3982; 10C~5\PP3982; 11~5\PP3982 & 13~5\PP3982; see also Appendix 8.2 GIS aerial mapping). The property is within a Farming Zone (FZ), and has numerous overlays including: Bushfire Management Overlay (BMO) (small area in the NE); Design and Development Overlay (DDO6) (whole property); Environmental Significance Overlays (ESO1 and ESO2) (southern sectors), and a Floodway Overlay (FO) and Land Subject to Inundation Overlay (LSIO) (Perry River riparian corridor). The riparian sector of the property is also identified as being within an area of Aboriginal Cultural Heritage Sensitivity.

Figure 1. Property location



Please note that this report concerns itself **primarily with monitoring and reporting obligations associated with the New Epping Estate**. An additional report has been prepared by Ecocentric for the Aurora Estate (Ecocentric 2026).

1.1 STUDY AREA

The broader study area includes three main wetlands within the low-lying floodplains of the property adjacent to the Perry River, and a fourth site that comprises a chain of 14 wetland pondages being fed from a permanent water spring in the west of the property. Waters flow from the north of the site south to wetlands not included in this study, and from there into the Perry River.

Figure 2 (overleaf) identifies the four wetland systems, Perry River and the property cadastre boundaries.

WETLANDS ON SITE

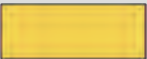
Wetland Complex 01 (central): Aurora Offset



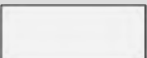
Wetland 02 (northern): New Epping Offset



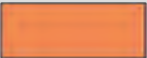
Wetland 03 (southern): New Epping Offset



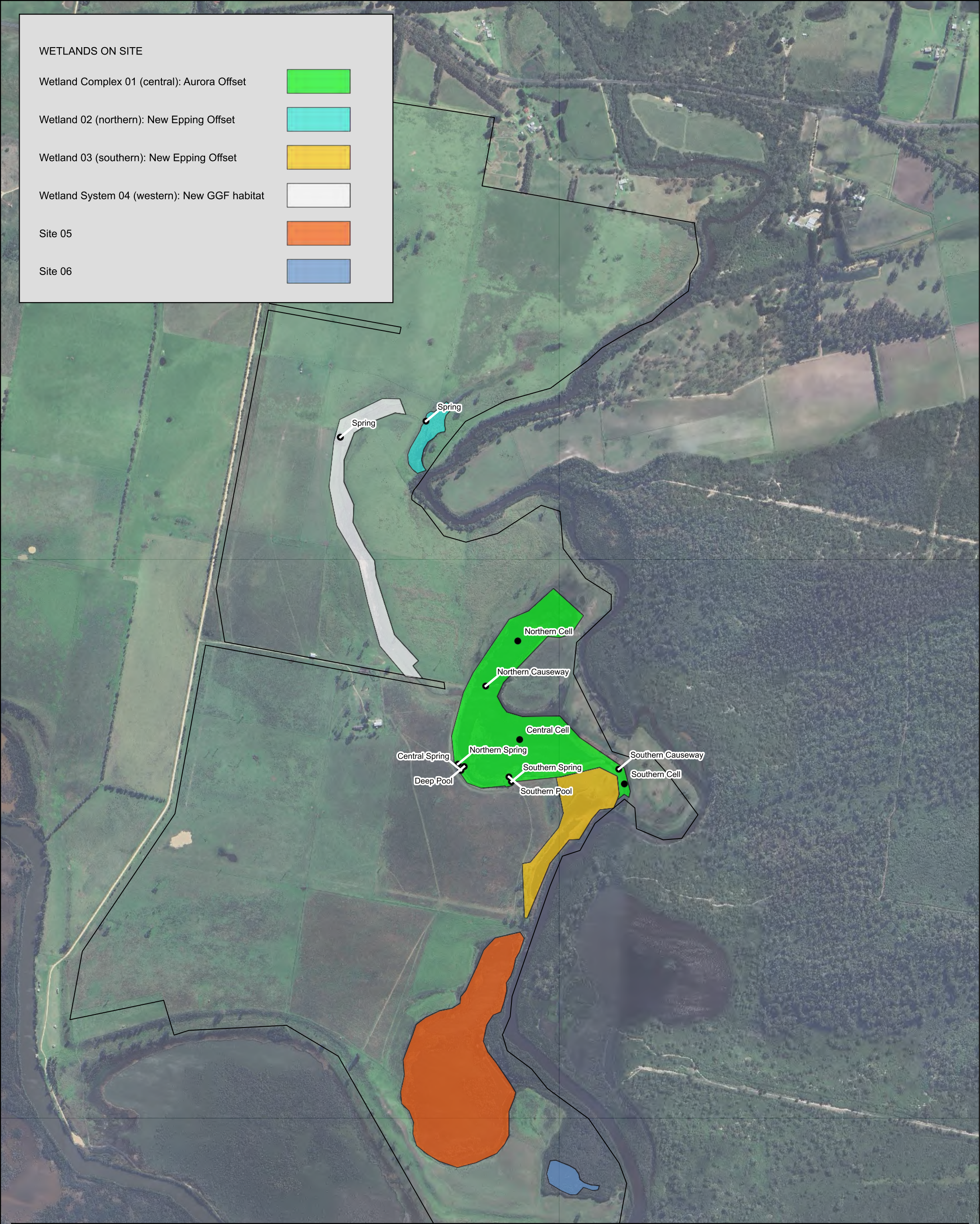
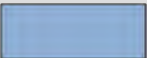
Wetland System 04 (western): New GGF habitat



Site 05



Site 06



1.1.1 WETLAND COMPLEX 01 (CENTRAL): AURORA OFFSET

This wetland complex comprises three cells (wetland units) that are separated by causeways. The total Wetland Complex 01 (central) covenanted area equates to 13.48 hectares. The **northern unit** and **central unit** comprise 4.05 hectares and 8.92 respectively (not including the causeway that separates them) and are characterised by Estuarine Wetland (EVC 10) and Aquatic Herbland (EVC 653), with Tall Marsh (EVC 821) at the margins, and with Swamp Scrub (EVC 53) in patches at the margins. The **southern unit** of this complex comprises an additional 0.25 hectares (excluding the causeway) and is dominated by a Sandy Flood Scrub (EVC 141) / Swamp Scrub mosaic where it outflows to the Perry River south of this site.

The southwestern corner of Wetland Complex 01 (central) additionally features some raised springs and perched pools: these are referred to throughout the report and in the figures as the **northern spring** and the **central spring**, both of which are perched above the **deep pool** created below them, and the **southern spring** plus the **southern pool** that has been created below it, both located further to the southeast.

The **northern unit** and **central unit** of this wetland complex are split by a central causeway that results in two main pondages. Water flow is via groundwater aquifers through the causeway. There is capacity to deliver additional waters to the northern unit from a spring to the west of this complex (see also Section 1.1.4 below).

The second causeway near the southern end of the complex similarly manages the flow of waters via a raised standpipe that maintains water depths in the central wetland unit, and which drains to the **southern unit** and Sandy Flood Scrub and Swamp Scrub habitat at the system's outfall; see also Biosis' (2018) Aurora GGF EPBC OMP mapping for details.

The floor of the northern and central wetland units is relatively flat, with open water areas that grade from 0.4m to 1.2m in depth (depending on seasonal rainfall events). The southern wetland unit is more ephemeral in nature, as reflected in the dominance of Swamp Paperbark (*Melaleuca ericifolia*) at this location.



Wetland complex 01 (central) looking NW from southern bank (Nov. 2024)

1.1.2 WETLAND 02 (NORTHERN): NEW EPPING OFFSET

Wetland 02 (northern) is fed by a permanent **freshwater spring** in the northwest corner of site, as well as by surface / sub-surface waters and overland flows from the Perry River. Aquatic Herbland dominates the open water areas, with patches of Tall Marsh within and at the wetland margins. The open water area has varying depths ranging from less than 0.2m (which dry out in drier seasons) to approximately 1m. There are mature Gippsland Red Gum (*Eucalyptus tereticornis*) at the northern extent, as well as areas of dense sapling regeneration / revegetation, the result of works conducted by Trust for Nature prior to the commencement of this OMP. Pasture grasses dominate areas around the wetland, however there are ground logs that offer over-wintering habitat for GGF. Wetland 02 (northern) is approximately 4.05 hectares in area, and feeds waters to the Perry River.



Wetland 02 (northern) looking north from southern edge (Dec. 2025)

1.1.3 WETLAND 03 (SOUTHERN): NEW EPPING OFFSET

Wetland 03 (southern) receives water from surface / sub-surface waters and overland flows from the Perry River, and is comprised of Aquatic Herbland with Tall Marsh at the margins, with a narrow band of Swamp Scrub which fringes, and in some sites overhangs, the wetland's margins. There is a stand of remnant Gippsland Red Gum with regenerating understorey shrubs and graminoids at the southern extent. Wetland 03 (southern) is approximately 1.05 hectares in area, and feeds waters to wetlands downstream (which were not assessed as part of this study) as well as the Perry River. The base of this wetland increases in depth from 0.2m at the margins to approximately 1.2m in the centre.



Wetland 03 (southern) looking northeast from above southwestern edge (Dec. 2025)

1.1.4 WETLAND SYSTEM 04 (WESTERN): NEW GGF HABITAT

There is a string of 14 recently (in 2023) constructed wetlands that are fed by a permanent water spring at the western extent of the complex. The wetlands have been constructed in accordance with guidelines set out in the *Growling Grass Frog Habitat Design Standards* (DELWP 2017), including provision of rocks at the wetland margins for GGF basking, as well as vegetated aquatic margins and submerged and emergent aquatic flora for breeding purposes. The wetland ponds are fenced and protected from stock, with a total area comprising approximately 4.95 hectares. The complex drains east to the northern unit of Wetland Complex 01 (central), with good connectivity to the broader wetland systems within the floodplain.



Wetland System 04 (western) looking south from northern bank (Nov. 2024)

1.2 PERFORMANCE TARGETS

The overall objective is to maintain a healthy population of GGF within the wetlands identified on site, which will serve as a meta-population for the species within the region.

The New Epping GGF EPBC OMP (Ecology Australia 2019) (and also the Aurora GGF EPBC OMP (Biosis 2018)) will be judged on the following:

- Maintenance of the relative cover of aquatic flora used for GGF breeding and surrounding scrub / woodland habitat used for over-wintering;
- Successful management of threats to the GGF population on site;
- Maintenance of the causeways and water flows on site;
- Completion of the monitoring programs set out in the OMPs.

This monitoring report provides details of the progress made on delivery of these performance targets; results are provided in Sections 3 and 4 below.

We note that additional management programs, including maintenance of fences and exclusion of stock, plus weed and feral animal control programs, are also being implemented by the landowner in accordance with the conservation covenants on Title; annual management and monitoring reports regarding these are available on request from the landowner.

2. METHODOLOGY

Methods employed for this project included desktop review, assessments of the study area and targeted surveys for GGF in accordance with the OMP requirements and EPBC survey methodologies, and sampling and analysis of environmental DNA (eDNA); as detailed below.

2.1 DESKTOP REVIEW

A desktop review was undertaken as the first component of this project. This involved a review of online data resources available from relevant Victorian and Commonwealth departments, and a review of available management reports and documentation from other sites within the region.

Existing ecological investigations undertaken at the site were also reviewed. These include the following:

- *Offset Management Plan: 191 Springberg Lane, Perry Bridge (EPBC 2016/7755)*. Report to Verve Projects by Ecology Australia, Melbourne (hereafter the **New Epping GGF EPBC OMP**) (Ecology Australia 2019).
- *Aurora Growling Grass Frog Offset Management Plan (EPBC 2007/3524): 191 Springberg Lane, Perry Bridge, Victoria*. Report to Development Victoria and Lendlease Communities (Australia) Limited by Biosis, Melbourne (hereafter the **Aurora GGF EPBC OMP**) (Biosis 2018).
- *Growling Grass Frog Survey – Robert Cromb*. Report to the landowner by Gondwanan Ecosystems Management Pty Ltd (GEM 2022).
- *Growling Grass Frog Survey – Robert Cromb*. Report to the landowner by Gondwanan Ecosystems Management Pty Ltd (GEM 2023).
- *Growling Grass Frog Survey – Robert Cromb*. Report to the landowner by Gondwanan Ecosystems Management Pty Ltd (GEM 2024a).
- *Growling Grass Frog Survey – Robert Cromb*. Report to the landowner by Gondwanan Ecosystems Management Pty Ltd (GEM 2024b).
- *Perry Bridge: Growling Grass Frog Annual Monitoring 2025. EPBC Permit 2007/3524*. Report to the landowner by Ecocentric Environmental Consulting (Ecocentric 2025a).
- *Perry Bridge: Growling Grass Frog Annual Monitoring 2025. EPBC Permit 2016/7755*. Report to the landowner by Ecocentric Environmental Consulting (Ecocentric 2025b).

Maps of the study areas were developed from the respective GGF EPBC OMPs in the project GIS and were referred to on site during the assessment. Aerial photography of the site was generated from Google, ESRI and LASSI mapping sources and overlaid with the Title boundary data and GGF covenanted areas as defined by the EPBC OMPs and respective Title Plans.

2.2 GGF TARGETED SURVEYS

Targeted surveys for GGF commenced at the beginning of the 2025 – 2026 breeding season in December 2025. Due consideration was given to the prevention of introduction or spread of amphibian Chytrid Fungus and the associated Chytridiomycosis. Assessor footwear was cleaned and sterilised prior to and after site visits, all equipment used was clean, dry and sterilised, and at no point were frogs handled or moved (see also DPIE 2020).

Suitably warm and humid / wet weather was chosen to conduct surveys for GGF at a time when this species was being recorded at other sites in the region. Surveys were conducted by ecologists familiar with GGF and the species' ecological characteristics and habitat preferences / requirements. Surveys were also conducted at reference sites known to support GGF populations on the same nights using the same methods. Ecocentric also receives on-line notification of GGF call-back surveys conducted

during the breeding season by our ecological colleagues surveying other sites across Victoria via the Ecological Consultants Association of Victoria (ECAV) GGF record update website (available online⁴).

Numerous survey methodologies were conducted on site in accordance with the *Significant impact guidelines for the vulnerable growling grass frog* (Litoria raniformis) (DWEHA 2009⁵) and the *Survey Guidelines for Australia's Threatened Frogs* (DEWHA 2010⁶); as summarised below.

Initial daytime assessment

A daytime assessment was conducted in order to assess any changes to water flow / wetland interactions new to the 2025 – 2026 season, to identify suitable habitat areas across the property, and to determine wetland access points for facilitation of nocturnal activities and safe work practices. Whilst conducting this pre-survey assessment, daytime dip-netting at vegetated aquatic margins was also conducted, searching for GGF and Eastern Gambusia (*Gambusia holbrooki*), a predatory fish that is a listed threat to GGF.

Call playback / listening

During nocturnal surveys, the call playback technique involved broadcasting an mp3 audio-file of a calling GGF male via a hand-held speaker and then listening for replies, particularly the male GGF's distinctive call, over a period of at least five minutes. The location and number of individuals calling was recorded to the GIS.

This broadcast / listening process was conducted at least three times at each of the survey sites over a half hour period (see GIS aerial mapping in Appendix 9.2).

Spotlighting / active searching

A hand-held spotlight was used to carefully search for adult frogs within and near the water's edge, including areas within and around submerged and floating aquatic vegetation and in terrestrial areas within 10 metres of the water's edge. This method included searching for the yellowish-orange reflection from the frogs' eye-shine under spotlight, and active searching for adult frogs.

Metamorph surveys

Bait traps with fluorescent lures were deployed overnight and the vegetated aquatic margins were dip-netted over several cycles at each survey location searching for GGF tadpoles, metamorphs and/or juvenile frogs. Dip-netting was deployed at the margins of wetlands where access was available and where sufficient water depths to support metamorph development were present. Tadpole identification was consistent with Anstis (2007), looking for the distinctive green tinge common to this species. Again, the opportunity was taken to make note of any presence of Eastern Gambusia.

The initial daytime assessment of Growling Grass Frog habitat values across the property, as well as daytime dip-netting, was conducted on 4th December 2025. Call playback, listening and spotlighting surveys were commenced on the night of 4th December, with follow-up surveys on the night of 17th December 2025. Growling Grass Frog were recorded on both of these nights at Ecocentric's reference site using the same methodologies outlined above (see also Section 3.3 for weather conditions). Metamorph surveys were conducted on 22nd to 23rd January 2026.

⁴ <https://ecavic.org.au/growling-grass-frog-calling-and-activity-diary/>

⁵ <https://www.dcceew.gov.au/sites/default/files/documents/significant-impact-guidelines-litoria-raniformis.pdf>

⁶ <https://www.dcceew.gov.au/sites/default/files/documents/survey-guidelines-frogs.pdf>

All targeted surveys for GGF were conducted in accordance with the following approvals and permits held by Aquatica Environmental Pty Ltd:

- DEDJTR Wildlife and Small Institutions Animal Ethics Committee (WSIAEC approval No. 11.18);
- Scientific Procedures Fieldwork Licence (No. SPFL20394);
- *Fisheries Act 1995* General Research permit (No. RP1312);
- *Flora and Fauna Guarantee Act 1988* permit to “take protected fish” (No. 10010202); and
- *Wildlife Act 1975* (Vic) Research Permit (No. 10010109).

2.3 WATER QUALITY MONITORING

During each site visit, a probe from a YSI ProDSS water quality meter was lowered into each water body to measure a suite of parameters, including temperature, dissolved oxygen, electrical conductivity, pH and turbidity. The probe was cleaned and calibrated between each sampling location.

2.4 EDNA SAMPLING

Environmental DNA (eDNA) sampling was conducted during the metamorph surveys, and after a period of no rainfall in order to limit the ‘flushing’ of eDNA and dilution of samples. To avoid contamination, water was collected from the edge of wetlands rather than by wading into the water, and each individual sample was collected utilising a fresh self-contained sample kit and disposable gloves. Each sampling kit contained a large syringe to collect water, a filter which collected eDNA from the water pushed through it, a smaller syringe that pushed preservative into the filter to maintain the integrity of the captured eDNA, and a sample bag for collection and labelling of the filter sample.

The large syringe was used to collect water from each location, and to then push the water through the filter. Samples were then preserved and posted to Wilderlab Australia for comprehensive freshwater panel analysis.

3. RESULTS

This section outlines the results of previous and current GGF monitoring conducted on site. Further discussion is provided in subsequent Sections 4 and 5.

We note here that the Green and Golden Bell Frog (G&GBF; *Ranoidea aurea*, formerly *Litoria aurea*) was also recorded during this survey and monitoring program; GGF and G&GBF are sympatric⁷. Whilst the focus of this report is on GGF, the presence of this species, also listed as Vulnerable under the EPBC Act (effective 16-July-2000), is also significant.

3.1 HISTORICAL GGF SURVEY RESULTS

Previously, four seasons of GGF monitoring had been conducted at the Wetland Complex 01 (central) for EPBC Permit 2007/3524, and two seasons at Wetland 02 (northern) and Wetland 03 (southern) for EPBC Permit 2016/7755. Details of these surveys are available in the respective reports, and are summarized in the GIS aerial mapping that accompanies this report (Appendix 9.2 GIS mapping).

Results of historical survey rounds at Wetlands 02 (northern) and 03 (southern) are detailed in Tables 2 and 3 below, respectively. Historical results for the Wetland Complex 01 (central) are detailed in the parallel report prepared for the Aurora Estate (Ecocentric 2026).

Table 2. Wetland 02 (northern) historical survey results

SURVEY PHASE	DATE	# ADULTS	# METAMORPHS	WATER QUALITY EC (mS/CM)
Season 2023 – 2024				
Adults & water quality	11 Dec. 2023	1 GGF 2 G&GBF	-	1.9
	13 Dec. 2023	0	-	2.0
Metamorphs & water quality	08 Mar. 2024	-	0	1.9 – 2.2
Season 2024 – 2025				
Adults	21 Nov. 2024	0	-	-
	19 Dec. 2024	0	-	-
Metamorphs	25 Jan. 2025	-	0	-
Notes GGF: Growling Grass Frog (<i>Ranoidea raniformis</i>). G&GBF: Green and Golden Bell Frog (<i>Ranoidea aurea</i>).				

⁷ Sympatric populations exist in the same geographic area and thus frequently encounter one another. An initially interbreeding population that splits into two or more distinct species sharing a common range exemplifies sympatric speciation.

Table 3. Wetland 03 (southern) historical survey results

SURVEY PHASE	DATE	# ADULTS (CALLBACK / SPOTLIGHTING RESULTS)	# METAMORPHS (FUNNEL TRAPPING RESULTS) ¹	WATER QUALITY EC (mS/CM)
Season 2023 – 2024				
Adults & water quality	11 Dec. 2023	0	-	2.3
	14 Dec. 2023	0	-	2.4
Metamorphs & water quality	10 Mar. 2024	-	0	9.0
	11 Mar. 2024	-	0	9.2
Season 2024 – 2025				
Adults	21 Nov. 2024	0 GGF 3 G&GBF	-	-
	19 Dec. 2024	0 GGF 8 G&GBF	-	-
Metamorphs	25 Jan. 2025	-	0	-
Notes GGF: Growling Grass Frog (<i>Ranoidea raniformis</i>). G&GBF: Green and Golden Bell Frog (<i>Ranoidea aurea</i>).				

It has previously been noted (Ecocentric 2025a, GEM 2024a) that metamorph survey results show challenges in the detectability of GGF tadpoles. Perpetuity of a population may continue to be a better measure of GGF's reproductive success, given that successful breeding of tadpoles doesn't necessarily equate to them reaching reproductive age.

3.2 WETLAND CONDITIONS

As found by Ecocentric during the previous season, a good cover (up to 80%) of aquatic flora remains at the margins of both Wetland 02 and Wetland 03, with Common Reed (*Phragmites australis*) dominating areas of Tall Marsh, and with submerged and emergent species found in and around reedbeds and at the margins of open water areas, including Club-sedge (*Bolboschoenus* sp.; likely *B. fluviatilis*), Rushes (*Juncus* spp.; likely *J. kraussii*), Common Spike-sedge (*Eleocharis acuta*), Creeping Monkey-flower (*Mimulus repens*; recorded on the northern embankment of the springs), Fennel Pondweed (*Stuckenia pectinate*) and Water Ribbons (*Cynogoton procerum*).

The wetland aquatic margins are fringed by areas of Swamp Scrub, dominated by Swamp Paperbark (*Melaleuca ericifolia*), and Brackish Grassland / Wetland, dominated by Saw-sedge (*Gahnia* sp.; likely *G. filum*), with scattered plants of Australian Salt-grass (*Distichlis distichophylla*), Spiny-head Mat-rush (*Lomandra longifolia*), Beaded Glasswort (*Sarcocornia quinqueflora*), Shrubby Glasswort (*Sclerostegia arbuscula*) and Rounded Noon-flower (*Disphyma crassifolium* subsp. *clavellatum*). The Wetland 02 (northern) system also includes Gippsland Red Gum in the northeast sector and an establishing area of Plains Grassy Woodland.

Wetlands 02 and 03, as found during the 2025 – 2026 season, are shown in the photographs below.



Wetland 02, looking northeast (4th December 2025)



Wetland 02's freshwater spring (4th December 2025)



Wetland 03, looking northeast (4th December 2025)



Wetland 03, looking southwest (4th December 2025)

3.3 CURRENT GGF SURVEY RESULTS

A total of two call-back / spotlight surveys were conducted over two nights during the GGF calling period, and one bait-trap / dip-net survey was conducted at the end of the GGF breeding season as part of this study (see also Section 2.2 for details). The location of the call-back survey sites, spotlight transects, bait-trap locations and dip-net transects are provided in the GIS aerial mapping that accompanies this report. Survey results are provided below.

Call-back surveys were conducted at two sites at Wetland 02 (northern), and at two sites at Wetland 03 (southern), on 4th and 17th December 2025. Spotlight transects were also conducted at all of the four sites following call-back surveys (and after a quiet listening period) on both nights, with active searching for GGF eyeshine across the wetlands and at vegetated margins. The results of the call-back / spotlight surveys are provided in Tables 4 and 5 below.

A total of five bait-traps were also placed within the spring pool for Wetland 02 and five more within Wetland 03 on the evening of 22nd January 2025, and removed for survey on the morning of 23rd January 2025.

Figures 3 and 4 (overleaf) identify the call-back locations, spotlight transects, bait-trap locations (and number of traps) and dip-net transects that were conducted across Wetlands 02 and 03 respectively. Tables 4 and 5 detail the results of the surveys in these wetlands.



10 May 2026
1 : 1,500 @ A3
GDA2020VicGrid
Google aerial

 **ecocentric**
environmental consulting™

0 50 100 m

Call-back survey points		G&GBF (<i>Litoria aurea</i>) records	
2025-12-04 spotlight transects		GGF (<i>Litoria raniformis</i>) records	
2025-12-17 spotlight transects		Bait-trap survey points (number of traps)	
Property (cadastre)		2026-01-22 Dip net surveys	

Table 4. Season 2025 – 2026, Wetland 02 (northern)

SURVEY PHASE	DATE	# ADULTS (CALLBACK / LISTENING / SPOTLIGHTING RESULTS)	# METAMORPHS (BAIT TRAP RESULTS)	WEATHER CONDITIONS
Adults	04 Dec. 2025	1 GGF 3 G&GBF	-	Moderate cloud cover (~50 %), moderate breeze dropping to a light breeze, 33°C max., 12°C min.
	17 Dec. 2025	0 GGF 1 G&GBF	-	Light cloud cover (<10%), light breeze, 25°C max., 14°C min.
Metamorphs	22 Jan. 2026	-	0	Light cloud cover (<10%), light breeze, 22°C max., 7°C min.
Notes GGF: Growling Grass Frog (<i>Ranoidea raniformis</i>). G&GBF: Green and Golden Bell Frog (<i>Ranoidea aurea</i>). ^ see also GIS aerial mapping				

Table 5. Season 2025 – 2026, Wetland 03 (southern)

SURVEY PHASE	DATE	# ADULTS (CALLBACK / LISTENING / SPOTLIGHTING RESULTS)	# METAMORPHS (BAIT TRAP RESULTS)	WEATHER CONDITIONS
Adults & water quality	04 Dec. 2025	0 GGF 2 G&GBF	-	Moderate cloud cover (~50 %), moderate breeze dropping to a light breeze, 33°C max., 12°C min.
	17 Dec. 2025	0 GGF 3 G&GBF	-	Light cloud cover (<10%), light breeze, 25°C max., 14°C min.
Metamorphs	22 Jan. 2026	-	0	Light cloud cover (<10%), light breeze, 22°C max., 7°C min.
Notes GGF: Growling Grass Frog (<i>Ranoidea raniformis</i>). G&GBF: Green and Golden Bell Frog (<i>Ranoidea aurea</i>). ^ see also GIS aerial mapping				

Comparative GGF and G&GBF numbers over the three monitoring seasons are detailed in Figures 5 and 6 below.

Figure 5. Adult male GGF call-back records, Wetland 02 (northern)

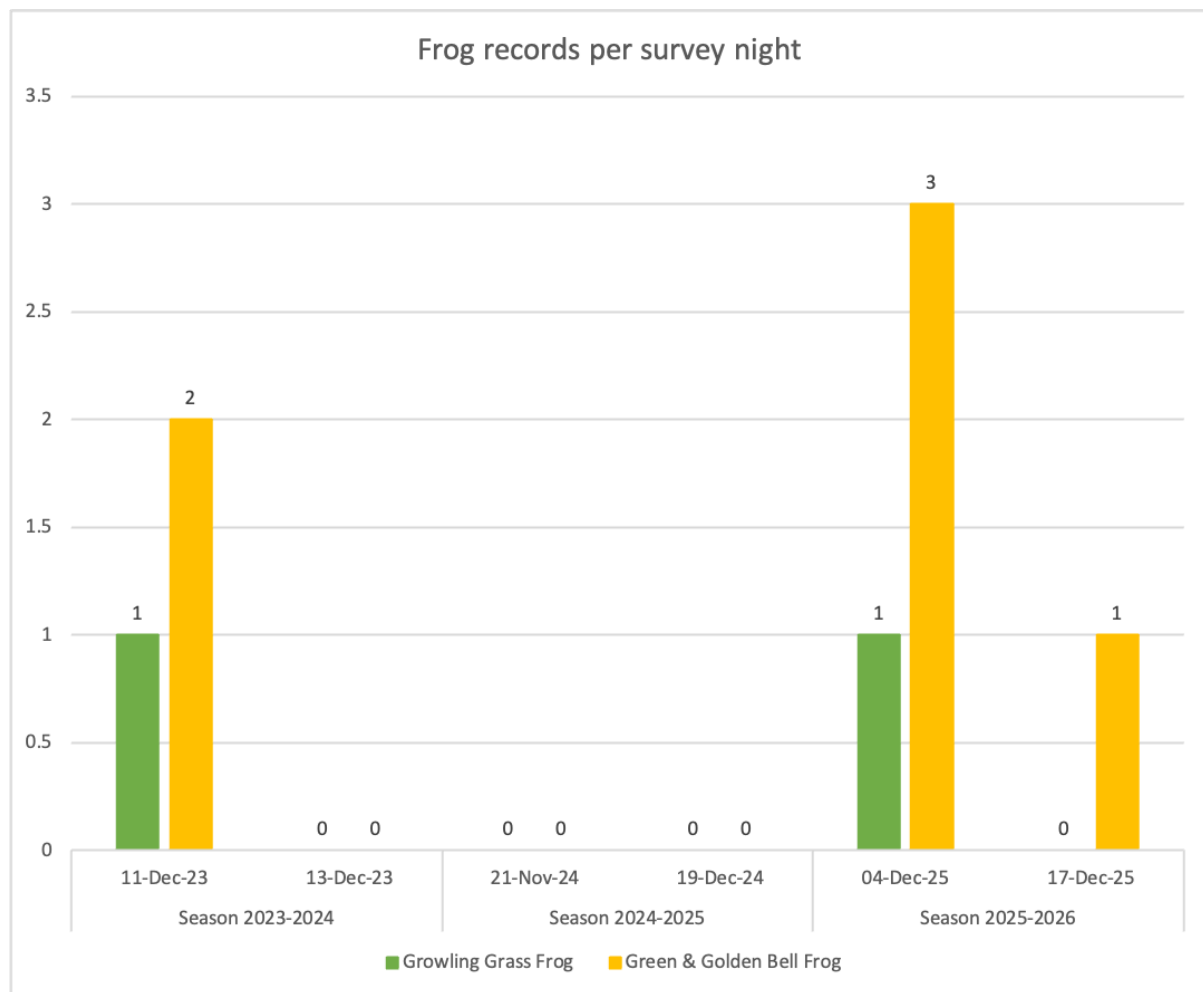
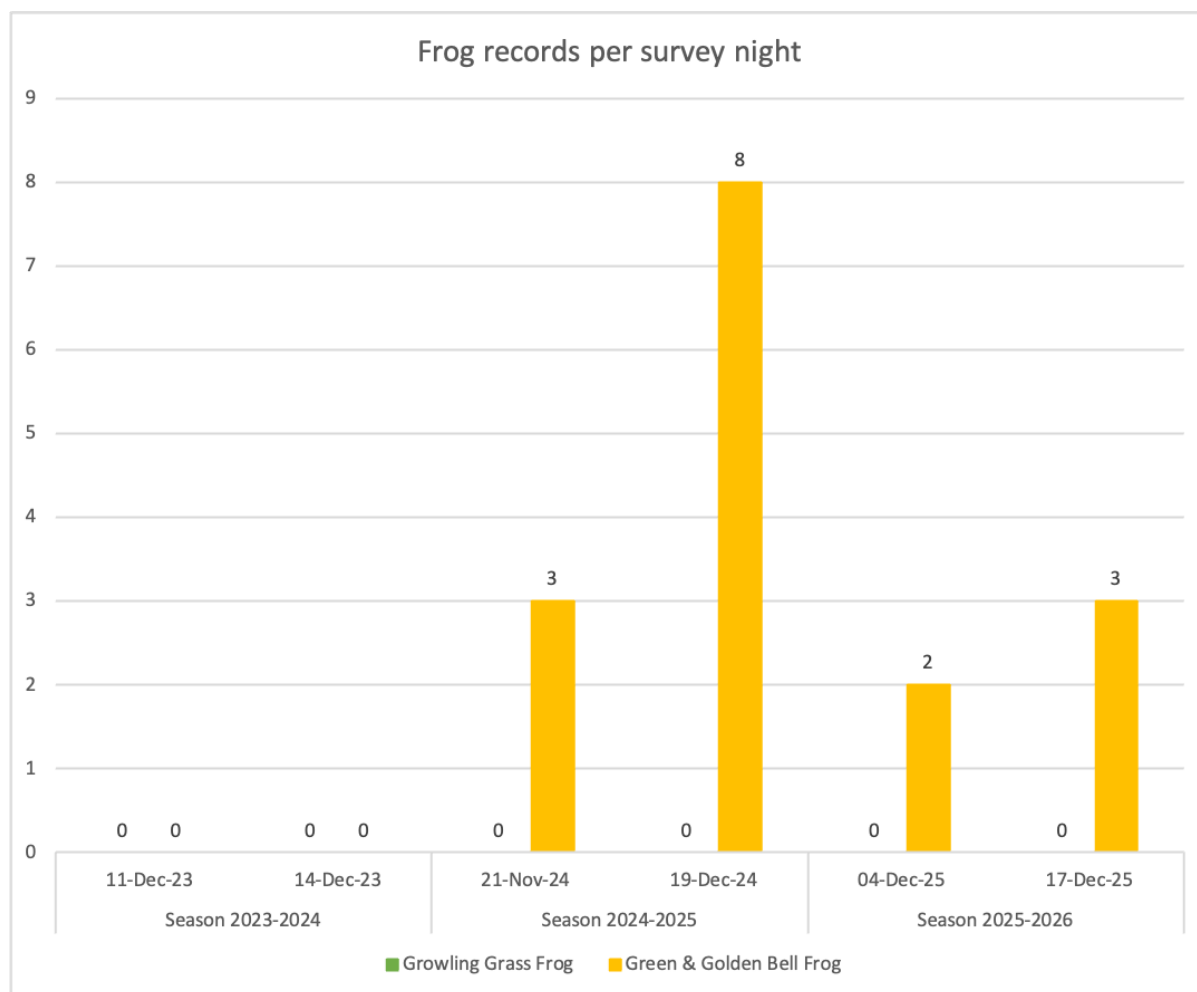


Figure 6. Adult male GGF call-back records, Wetland 03 (southern)



Low numbers within Wetlands 02 and 03 are, however, complemented by records within other wetlands on-site. For context, 2025 – 2026 monitoring also recorded a total of 1 GGF + 6 G&GBF records at Wetland Complex 01 (central), and 7 GGF + 6 G&GBF records at Wetland System 04 (western).

It is noted that tadpoles were recorded elsewhere on site (Wetland Complex 01) during the bait-trapping and dip-netting surveys, with 30+ individuals (of a common species; likely Spotted Marsh Frog (*Limnodynastes tasmaniensis*) or Whistling Tree Frog (*Litoria verreauxii verreauxii*)) recorded in the northern spring, 10+ recorded in the central spring, and 3 recorded in the southern spring. Whilst none of these were GGF, these records are significant since tadpoles have not been recorded during recent surveys at this site, and furthermore, their presence is attributed to the improved water quality within these springs subsequent to sediments being removed (see Ecocentric 2026).

3.4 EASTERN GAMBUSIA SURVEY RESULTS

Dip-netting surveys, conducted on 4th December 2025 and 23rd January 2026, found Eastern Gambusia (*Gambusia holbrooki*, also referred to as Mosquito Fish or Plague Minnow) in Wetland 03 (southern), but none in Wetland 02 (northern). Ramifications are discussed in Section 5.2.

3.5 WATER QUALITY MONITORING RESULTS

Historical and current water quality monitoring results have already been detailed in Tables 2 – 5 above; they are compared against each other in Tables 6 and 7 below.

Table 6. Historical and current water quality monitoring results, Wetland 02 (northern)

SEASON	EC (mS/CM) – RANGE			EC (mS/CM) – AVERAGE
2023 – 2024	December	March		
	1.9 – 2.0	1.9 – 2.2		2.0
2024 – 2025	-			-
2025 – 2026	4 th December	17 th December	22 nd January	
- Main wetland	1.39	0.96	1.42	1.26
- Spring	0.69	0.76	0.73	0.73
^ record locations were not provided				
* results were only presented as a range, so an average can't be determined				

Table 7. Historical and current water quality monitoring results, Wetland 03 (southern)

SEASON	EC (mS/CM) – RANGE			EC (mS/CM) – AVERAGE
2023 – 2024	December	March		5.8
	2.3 – 2.4	9.0 – 9.2		
2024 – 2025	-			-
2025 – 2026	4 th December	17 th December	22 nd January	
- Main wetland	13.1	16.0	15.6	
^ record locations were not provided				
* results were only presented as a range, so an average can't be determined				

Electrical conductivity results within Wetland 02 were similar to levels that have been recorded previously, while Wetland 03 showed higher salinity than previously; this is discussed further in Section 5.4.

3.6 EDNA SAMPLING RESULTS

A single eDNA sample was collected from Wetland 02 (northern) system using waters taken from the spring pool and main wetland cell, and another from a single point in Wetland 03 (southern) system. The samples showed:

- No DNA sequences identifying GGF within either wetland, although it is noted that GGF was identified within Wetland 02 during this monitoring season;

- DNA sequences identifying G&GBF in Wetland 02, but none within Wetland 03, although it is noted that G&GBF was identified within both wetlands this monitoring season;
- The presence of Eastern Gambusia within both wetlands, although this species was only found in Wetland 03. The count from the Wetland 03 samples was higher (3,619) than the count from the Wetland 02 samples (647), which might reflect lower numbers of the species in Wetland 02 than Wetland 03; and
- No DNA sequences identifying members of the phylum *Chytridiomycota*, nor its associated class *Chytridiomycetes*. More specifically, no DNA sequences were detected of the *Batrachochytrium dendrobatidis* species that causes chytridiomycosis in frogs. This was the case for other samples taken from the site, with no *Batrachochytrium dendrobatidis* identified within Wetland Complex 01 either.

eDNA results are discussed further in Section 5.3.

4. COMPLIANCE WITH EPBC OMP PERFORMANCE CRITERIA

This section (see Table 8 below) assesses compliance with the performance and completion criteria set out in the New Epping GGF EPBC OMP (Ecology Australia 2019), Section 4.5.2, that are specific to the monitoring of GGF and GGF habitat at the site. A “compliant” status indicates actions that have been completed and targets that have been met – these are highlighted in green. An “ongoing” status indicates actions that have been completed, but results indicate that targets have not been met and/or that further work may be needed – these are highlighted in yellow, and will be specifically reported on in next season’s report. A “non-compliant” status indicates actions that have not been completed – these are highlighted in red.

Please note that a second monitoring report (Ecocentric 2026) has been prepared in response to the Aurora GGF EPBC OMP (Biosis 2018) targeted survey monitoring and reporting requirements; available on request from the landowner.

Table 8. Status Season 2025 – 2026, Wetlands 02 (northern) and 03 (southern)

DETAILED ACTIONS / TARGETS	STATUS	COMMENTS
Performance & completion criteria: increase wetland habitat on site. Management actions to increase wetland habitat on site include:		
Construct at least three small wetlands to capture surface runoff at Wetland 03.	Compliant	A total of three small wetlands were constructed at the northern end of Wetland 03, reportedly in about 2020. They were lined with clay excavated for their construction, and now retain surface runoff, with water loss occurring only through evaporation.
Construct a perched wetland adjacent to the existing soak at Wetland 02.	Compliant	A perched wetland was constructed in the northwest sector of Wetland 02, reportedly in about 2020. The perched wetland is spring-fed, and is observed to provide good quality habitat values for GGF, offering valuable habitat refugia for this species during dry times.
Adjust causeway between Wetland 02 and Perry River, allowing Wetland 02 to backfill and form a larger area of wetland habitat.	Compliant	An embankment 1 m high and 15 m long was constructed, reportedly, in 2020, between Wetland 02 and Perry River from clay that was excavated from the base of Wetland 02 at a time when it was dry. The pipe that previously drained waters from Wetland 02 to the Perry River, in order to facilitate grazing, was also removed to enable re-watering and re-establishment of the wetland complex; this system now retains water over a larger area.
Minimise damage to GGF habitat during wetland construction works.	Compliant	All wetland construction works referenced above were reportedly conducted during dry seasonal conditions in order to make the works possible, whilst also minimizing the risks to GGF and GGF habitat. No GGF were observed during or after works – it was assumed that they had retreated to wetter spring-fed soaks during the works period – and no rocks, logs or vegetation were excavated during the construction program.
Performance & completion criteria: maintain native vegetation in the offset sites to provide habitat conditions preferred by GGF. Assess the offset site for habitat features preferred by GGF, including:		
Presence of open water with a high cover of floating and submergent vegetation.	Compliant	Open water was observed through both Wetlands 02 and 03, with free-floating macrophytes additionally present in Wetland 02, and submerged aquatic flora observed between tussocks and at the margin of Tall Marsh areas.

DETAILED ACTIONS / TARGETS	STATUS	COMMENTS
Presence of emergent fringing vegetation. If ponds become clogged with emergent vegetation (>50% cover), vegetation should be removed – noting that only 50% of wetlands in any offset site should have their vegetation/sediment removed within any given twelve-month period.	Compliant	There was a good cover (but <50%) of emergent macrophytes at the margins of both Wetlands 02 and 03, offering good quality habitat for perching and calling GGF that isn't choking the wetlands.
Presence of open areas surrounding wetlands, with terrestrial habitat dominated by grasslands.	Ongoing	Wetland 02, previously surrounded by grazed pasture grasses, is now surrounded by regenerating Plains Grassy Woodland from previous Trust for Nature revegetation works. Grasses still predominate, with ground logs offering over-wintering habitat for GGF. Wetland 03 is edged by Tall Marsh, beyond which mostly lies a narrow band of Swamp Scrub. The southern end of the wetland is more open, with regenerating understorey shrubs and graminoids under a stand of remnant Gippsland Red Gum. Whilst not as open as the grasslands fringing the Wetland Complex 01, the vegetation around Wetlands 02 and 03 is regenerating well with graminoids establishing within drier sites adjacent older Gippsland Red Gum, but with a low cover of understorey shrubs that have minimal impact on sunlight basking opportunities for GGF. Several groundlogs retained and/or placed within the site offer habitat for overwintering purposes.
Presence of shrubs and trees >2m tall, with recruitment to be controlled where required. If cover within 10m of wetlands exceeds 20%, cover to be reduced to <10%. If cover elsewhere within the offset sites exceeds 50%, cover to be reduced to <20%. Cover of trees >5m tall should not exceed 10% throughout each offset site.	Ongoing	Revegetated Gippsland Red Gum around Wetland 02 are still young, and are not regenerating in a way that is expected to over-shade the wetland. The one retained Gippsland Red Gum at the northern margin of Wetland 02 contributes a cover well below 10%, and there is subsequently no requirement at this stage to reduce cover rates at this site. The southern margin of Wetland 03 is Tall Marsh grading to Swamp Scrub and a canopy of Swamp Paperbark. The result is that the cover rates at some sites on the southern margin exceed 20% within 10m of the water's edge. We note however that, being on the southern margin, this has little to no impact in terms of light transmissivity levels to the wetlands, and it is our view that no thinning or vegetation removal is required. The northern side of the Wetland 03 (southern) complex comprises a bed of Common Reed that is up to 20m in width, and within which there are few, if any, emergent shrubs or canopy tree germinant observed. It is expected that, if this reedbed is maintained, there will be little to no threat of over-shading of this wetland complex, and that basking opportunities for GGF will be maintained.

DETAILED ACTIONS / TARGETS	STATUS	COMMENTS
Presence of rocks and/or logs for calling, perching, basking and overwintering. Place more rocks and logs at each offset site to provide more overwintering sites for GGF.	Ongoing	No rocks or logs have been added to the wetland complexes, but nor have any been removed. The addition of rocks or logs remains as a habitat improvement option for the future, with limitations noted around the timing of these works; i.e. preferably during the breeding season when GGF are occupied within the wetland systems, and when sites are dry enough to facilitate vehicle access.
Performance & completion criteria: maintain water quality in wetlands as far as practical. Control salinity within the offset sites by:		
Increasing wetland habitat on site.	Compliant	This management action has already been covered above (see the first section of this table "Performance & completion criteria: increase wetland habitat on site" for details), which includes development of three additional pondages at the northern end of the Wetland 03, development of a perched wetland in the northwest sector of Wetland 02, and enlargement of Wetland 02 through construction of an embankment and removal of a drainage pipe.
Investigating the potential to fill low areas along the Perry River riverbank to reduce saline inflows to Wetland 03 during dry periods or king tides. Any modifications to bank height to be done sensitively to reduce impacts to GGF and their habitat, such as construction using a long-armed excavator from unvegetated areas of the wetland.	Ongoing	Adjustments to Perry River bank heights, adjacent to Wetland 03, have been avoided to date in order to avoid impacts to GGF and GGF habitat. The landowner has indicated that he will investigate the possibility of filling low points in the riverbank if/when these sites are sufficiently dry to facilitate the use of earthmoving equipment. These works are on hold until such time.

DETAILED ACTIONS / TARGETS	STATUS	COMMENTS		
If salinity is an ongoing problem (>7mS/cm), consider pumping freshwater into the Wetland 03 wetlands, or constructing a continuous low levee along the banks of the Perry River.	Not compliant due to high EC levels	Salinity levels in Wetland 02 were similar to levels that have been recorded previously (see Section 3.5) and well within target levels. EC levels in Wetland 03 were higher than have been recorded previously, and were additionally above the 7mS/cm target specified in the OMP. This is discussed further in Section 5.4.		
		Date	EC in Wetland 02 (mS/cm) Main wetland Spring pool	EC in Wetland 03 (mS/cm) Target: <7mS/cm
		4 th Dec. 2025	1.385 0.687	13.100 (exceedance of OMP target)
		17 th Dec. 2025	0.962 0.762	15.959 (exceedance of OMP target)
		22 nd Jan. 2026	1.423 0.727	15.642 (exceedance of OMP target)
Performance & completion criteria: control threats on site.				
Management actions that will help maintain and improve GGF habitat quality include:				
Moving the northern fence line at Wetland 02 (northern) approximately 20m northwards so that fencing encompasses the entire offset site.	Not compliant	The entire Wetland 02 (northern) complex has been fenced, and there were no signs of stock entering this system (no cattle pugging, browsing or scats observed). A recently constructed fence on the northern boundary was also observed to be generally in alignment with the covenanted boundaries as shown on Title.		
Maintaining fences and keeping gates shut to exclude livestock and unauthorized vehicles.	Compliant	Fencing around both Wetland 02 and Wetland 03 was observed to be well-maintained and there was no evidence of stock entering these sites (no signs of pugging, browsing or scats observed).		

DETAILED ACTIONS / TARGETS	STATUS	COMMENTS
Monitoring and control of high threat herbaceous weeds so that cover doesn't increase, but preferably, so that cover declines. Springtime monitoring for and control of Tall Wheat-grass (<i>Lophopyrum ponticum</i>). Year-round monitoring and control of new and emerging high threat herbaceous weeds so that they don't establish on site.	Ongoing	Wetland 03 was observed to have low levels (<5%) of herbaceous weed cover, retaining a good cover of native flora within, and at the margins of, the wetland. Wetland 02 has more of a problem with herbaceous grassy weeds. Kikuyu in particular was observed to have high cover rates (up to 70%), with deep thickets observed at the southern and western margins of the wetland. Water Couch was also observed at the margins of the perched wetland that has been constructed in the northwest corner of this system. On-going control of this species is required, taking care to ensure that there are no unintended off-target impacts. Control works at the margin of the perched wetland in particular may require hand-control efforts in order to ensure maintenance of water quality. It may also be necessary to conduct spring monitoring of Tall Wheat-grass (<i>Lophopyrum ponticum</i>) within the covenanted areas of Wetland 02. Details of on-site weed management actions are reported upon in the annual monitoring reports that are provided to Trust for Nature; also available on request from the landowner.
Monitoring and control of woody weeds so that they are eliminated from site. Springtime monitoring for and control of Blackberry (<i>Rubus fruticosus</i> spp. agg.), and of any other woody weeds encountered on site.	Ongoing	Woody weeds were observed to be effectively absent (<1% cover) at both Wetland 02 and Wetland 03. Details of on-site weed management actions are reported upon in the annual monitoring reports that are provided to Trust for Nature; also available on request from the landowner.
Controlling rabbits, hares, foxes and deer, plus any new and emerging pest animals (e.g. predatory fish). Rabbit warrens and fox dens to be fumigated and hand collapsed, and carcasses disposed of to prevent native wildlife being poisoned. If wetlands are found to be colonized by predatory fish, they will be allowed to dry out naturally by diverting spring waters – noting that only 50% of wetlands in any offset site will be allowed to dry out within any given twelve-month period.	Ongoing	No sign of rabbits, hares or foxes was observed on site. Details of on-site pest animal management actions are reported upon in the annual monitoring reports that are provided to Trust for Nature; available on request from the landowner. Both Hog and Sambar Deer were observed during the previous monitoring season (Ecocentric 2025b), and tracks were again observed on site this season. Further feral deer control work is required in order to avert impacts associated with sediment entrainment and browsing of vegetation at the wetland margins. Eastern Gambusia were also observed (incidentally) as a new and emerging pest animal during the previous monitoring season in both Wetland 02 and Wetland 03 (Ecocentric 2025b). As a particular threat to GGF, these were particularly targeted during this year's dip-net surveys to gain a better understanding of their distribution. Eastern Gambusia were found to be present in Wetland 03, but not within the Wetland 02 spring; it is likely however that Eastern Gambusia would be present within the main wetland area of Wetland 02.

DETAILED ACTIONS / TARGETS	STATUS	COMMENTS
Performance & completion criteria: complete scheduled monitoring activities. Annually monitor GGF population and habitat condition, utilising:		
At least two night-time breeding season surveys for adult GGF, conducted in November / December under suitable conditions (day temperature >15°C, night temperature >12°C, only moderate to no wind throughout), utilising callback and spotlighting.	Compliant	Targeted GGF surveys were conducted across the New Epping GGF EPBC Offset area as required by the OMP (Ecology Australia 2019) and in accordance with Federal survey guidelines (DEWHA 2010) – see Sections 2.2 and 3.3 above. These included two call-back and spotlight surveys during the adult male GGF calling period, conducted on warm, relatively still nights (greater than 12°C with only light breezes, following days of greater than 15°C – see Tables 4 and 5 above), when GGF were known to be within corresponding breeding cycles at reference sites known to support populations of GGF.
A post-breeding season survey for GGF tadpoles and metamorphs, conducted in January / February, utilising dip-netting in suitable tadpole habitat sites, or bait traps if dip-netting is unsuccessful.	Compliant	Follow-up bait-trap and dip-net surveys for metamorphs were conducted during the post-mating period, when GGF metamorphs were recorded at reference sites known to support populations of GGF (see Sections 2.2 and 3.3).

DETAILED ACTIONS / TARGETS	STATUS	COMMENTS
Assessment of any major changes to habitat variables preferred by GGF, involving assessment of: • Area and cover of fringing, emergent and submergent vegetation. • Floristic assessments, assessing species and cover along two transects per wetland. • Presence of weeds, recording location of any infestations requiring control. • Water quality (temperature, electrical conductivity, salinity, pH, turbidity, dissolved oxygen). • Average depth of each wetland and how full (%) each is. • Sedimentation of the ponds. • Terrestrial habitat assessments along two transects per offset site.	Compliant / ongoing	Physically, the layout of the habitat remains much as it was during the previous monitoring season. However, it is noted that Wetland 03 had higher levels of salinity than had previously been recorded (see discussion in Section 5.4). The ongoing existence of freshwater springs and perched pools at Wetland 02, plus elsewhere on site (see parallel report prepared for the Aurora Estate; Ecocentric 2026) provides ongoing local GGF habitat to support the species during dry seasons. Water depths within Wetland 03 were found to be consistent with last year's survey, and there was no evidence that this pool had dried out (unlikely the main wetland cells within Wetland 01; see report prepared for the Aurora Estate; Ecocentric 2026). It is considered likely therefore that the natural fill / dry cycles of Wetland 03 are compliant with the OMP targets. Water depths within the Wetland 02 spring pool remain at over 2 m depth. The main wetland cell at this location however was observed to be low (less than 100 mm depth) during the metamorph surveys. We note however that the EC levels within this pool remain within the OMP target range; this is in stark contrast to the main cells in Wetland 01 and Wetland 03 which recorded significantly higher EC levels.

5. DISCUSSION

This section provides further commentary on this season's monitoring results, as compared to historical surveys and in the context of other results across the broader site.

5.1 GGF NUMBERS

Low numbers of GGF were again recorded for the 2025 – 2026 season; only one GGF was recorded within Wetland 02, with an adult male responding to call-back at the southeastern margin of the wetland.

A total of nine GGF were recorded across the property; one at the southeastern margin of Wetland 02 (as reported above), one at the northern spring of Wetland Complex 01, and seven (four on the first night, three again on the second night) at the northeastern end of Wetland System 04. Whilst these numbers are low, it is noteworthy that there appears to be a genuine increase in the GGF population within the Wetland System 04.

Low GGF numbers in the 2024 – 2025 season were attributed to low rainfall totals and drier than average conditions in the months prior to breeding activity, but the same can't be said for this season. Rainfall totals in the months prior to this season's breeding were average, but notably, there was no flooding through the wetlands, and the water levels within Wetlands 02 and 03 were low; generally, less than 0.4m in depth. Water levels were so low elsewhere on site (see parallel report prepared for the Aurora Estate; Ecocentric 2026) that one cell (Wetland Complex 01's central unit) ran dry by the middle of December (pers.comm. Robert Cromb) and was so low during the January metamorph surveys that there was insufficient water available for the deployment of the bait-traps and little to no habitat available for the development of tadpoles or metamorphs. Salinity levels were also recorded to be very high in the northern and central units of Wetland Complex 01, attributable to low water levels and the absence of freshwater flooding (discussed further below in Section 5.4).

It is notable that the only GGF recorded within this season's Wetland Complex 01 call-back surveys was recorded within the recently 'cleaned-out' northern spring (see Ecocentric 2026). These refugia continue to contribute to the persistence of GGF on site. The new chain of ponds constituting Wetland System 04 is also providing similar valuable refugia.

The *Sub-regional Species Strategy for the GGF* defines a viable GGF population as "...one which is not isolated from other populations or water bodies, such that it has the opportunity to interact with other nearby populations or has the ability to establish new populations when water bodies fill and become available" (DEPI 2013). On-site connectivity to other wetland systems (Wetland Complex 01, two additional wetlands to the south of Wetland 03, and the recently constructed Wetland System 04 to the west), plus regional connectivity via the Perry River, also contributes to the persistence of GGF on site. Connectivity between the different on-site systems continues to be well-maintained through fencing that excludes grazing, prevents trampling and pugging, and encourages ongoing native vegetation regeneration.

Finally, it is noted that numbers of G&GBF have also been lower than was previously the case across the last two seasons; however, this species persists. The two species, GGF and G&GBF, are sympatric and share habitat requirements as well as threats to their population dynamics. The persistence of G&GBF is therefore a promising sign for the ongoing viability of GGF.

5.2 EASTERN GAMBUSIA

In the 2024 – 2025 breeding season, Eastern Gambusia were observed in both Wetland 02 and Wetland 03 (Ecocentric 2025b). This season, they were again recorded in Wetland 03, but not in the Wetland 02 spring pool; they are presumed to be present within the main Wetland 02 wetland cell. A failure to detect a species with dip-net surveys doesn't necessarily equate to a complete absence of that species, and it is further noted that the Wetland 02 sampling occurred within its spring; not the broader wetland.

It is also noted that elsewhere on site (see Ecocentric 2026), Eastern Gambusia were not found within the southern pool, northern spring, nor central spring of Wetland Complex 01. It is likely that the cleaning out of the springs conducted at the Wetland 01 Complex significantly contributed to the control of this noxious species.

We also note here that the use of dip-nets to 'clear' Eastern Gambusia from the spring pools is not a practical management action. The depth of the pools, as well as snags and submergent flora makes this management action all but impossible at this site; this approach is not recommended for future actions.

5.3 EDNA

eDNA results showed no sign of the *Batrachochytrium dendrobatidis* species that causes chytridiomycosis in frogs, from any of the samples collected across the site (from Wetland Complex 01 (central), Wetland 02 (northern) and Wetland 03 (southern)). Maintaining this situation will be highly beneficial for the ongoing sustainability of GGF and G&GBF populations on site, and it is therefore recommended that quarantine measures be instituted on site to reduce the likelihood of its introduction. Measures that are to be implemented (at minimum) include the following:

- Signage at the main access gate (to the east of the existing dwelling and sheds on site) that identifies all wetlands within the floodplain as conservation areas. Signage must make it clear that there is to be absolutely no introduction of water, amphibians or aquatic flora to the site from outside sources.
- Provision of a quarantine station with suitable disinfecting agents for cleaning of boots, survey equipment and vehicles.
- Locks on the gate to prevent unauthorised access to the floodplain (including for residents on site).

Further details of suitable quarantine processes, methods and outcomes are available within the *Hygiene Guidelines. Protocol to Protect Priority Biodiversity Areas in NSW from Phytophthora cinnamomi, Myrtle Rust, Amphibian Chytrid Fungus and Invasive Plants* (DPIE 2020).

5.4 WATER QUALITY

Electrical conductivity readings found in Wetland 02, within both the spring (average 0.73 mS/m) and the main wetland cell (average 1.26 mS/m) (see also Section 3.5) are well within the target range set out in the OMP (EP 2011). These values are notable in light of the elevated levels recorded elsewhere on site (discussed below). It was also evident during the surveys that this system had not flooded in any way, and that there was no sign of waters flushing through this wetland system. We might speculate that the lower EC readings at this location are attributable to high flow rates from the spring, however, without data this is only a theory at this stage.

By way of contrast, high electrical conductivity readings found in Wetland 03 this season have already been noted in Sections 3.5 and 5.1; significantly high salinity was also found elsewhere on site within the northern and central units of Wetland Complex 01 (Ecocentric 2026) and from the Perry River (recorded at 11.648 mS/m, 11.567 mS/m and 10.613 mS/m, with an average of 11.276 mS/m). While moderate salinity levels may be beneficial in terms of reducing the likelihood of Chytrid Fungus infection of GGF (Heard *et al* 2014; DELWP 2017a), salinity levels within Wetland 03, and the Perry River, would be considered to be too high to be beneficial in this regard, and overall, detrimental to the development of GGF metamorphs and tadpoles.

The EC levels recorded in Wetland Complex 01 this season was noted to be approaching seawater levels (as high as 43.7 mS/m) and it is considered likely that such high salinity levels may have led to both GGF and G&GBF retreating to fresher refugia elsewhere on site; namely to the freshwater springs and perched ponds in the southwest corner of Wetland Complex 01, to Wetland 02, and to the Wetland System 04.

Water depths recorded within Wetland 03 remain consistent with levels recorded during the previous 2024 – 2025 surveys. This wetland, despite high salinity levels, appears to be maintaining its depth naturally with groundwater ingress from the Perry River. Flushing of this wetland, with water added from the site's freshwater springs and/or groundwater pumps, may therefore be impractical. Water introduced to site from anywhere else has the potential to introduce more Eastern Gambusia but also, more threateningly, *Batrachochytrium dendrobatidis*; not yet found to be present on site. Given also the elevated EC levels recorded in the River, we would also caution against pumping of waters from the Perry River into these wetland systems.

A natural flood cycle is considered likely to 'recharge' the Wetland 03 system for GGF breeding success, although, it is considered likely that rainfall alone will take more than one season to reduce EC levels to those targets set out in the OMP. It is also noted that there is a robust G&GBF population at the southern end of this system with 9 recorded during this survey, and 10 during the 2024 – 2025 survey. This species may be more tolerant of the elevated salinity levels recorded at this site.

5.5 WEED AND FERAL ANIMAL CONTROL

Woody weeds remain at low levels across the two offset sites; under 1% cover rates. Weed cover rates at the Wetland 03 site are also low, with few to no weeds recorded within the dense reedbeds or Swamp Scrub at the margins.

There are however grassy weeds around the margin of the Wetland 02 complex that will spread if left unchecked. The establishment of native understorey flora may help mitigate the spread and impact of common grassy weeds such as Couch (*Cynodon dactylon*), Toowoomba Canary-grass (*Phalaris aquatica*) and Sweet Vernal (*Anthoxanthum odoratum*) that surround this wetland complex. It may also be necessary to manually control some infestations of Water Couch (*Paspalum distichum*) within the covenanted areas of Wetland 02 since this species is beginning to dominate the margin of the Wetland 02 spring pool. We note also that the OMP calls for springtime monitoring and control of Tall Wheat-grass (*Thinopyrum obtusiflorum*; syn. *Lophopyrum ponticum*), although we did not record this species.

Hog Deer were again recorded in high numbers (up to 20 observed on site) across the property; Sambar have also been recorded previously. Further feral deer control work is required in order to avert impacts associated with sediment entrainment and browsing of vegetation at the wetland margins.

6. CONCLUSIONS AND RECOMMENDATIONS

The below average seasonal rainfall during the 2024 – 2025 breeding season is likely to have had a negative impact on the GGF population on site, and on the species' breeding success. Whilst a dry season may not be considered a climate change event, Wassens *et al.* (2008) identified that the probability of GGF occupancy increased with increasing cover of emergent and submerged vegetation, and also that wetlands that had been subject to annual flooding were more likely to support GGF than those flooded less frequently.

Whilst average seasonal rainfall levels may have been achieved on site during this 2025 – 2026 season, there was no flooding recorded in either of the Wetland 02 (northern) or Wetland 03 (southern) systems. Water levels within Wetland 03 remain consistent at around 400 – 600 mm in depth, however, the EC levels recorded (a surrogate measure of salinity) were high (range of 13.1 to 15.9 mS/cm) and certainly higher than is thought to be preferable for GGF breeding requirements (Clemann *et al.* 2015; Heard *et al.* 2014). It is noted though that G&GBF records, particularly at the southern end of this wetland, were again high and on par with numbers recorded during the previous 2024 – 2025 survey.

By way of comparison, however, the water levels within the main cell of the Wetland 02 system were notably low at around 300 – 400 mm in depth. Nevertheless, the EC levels recorded were also low (range of 0.9 to 1.49 mS/cm) and well within the target range specified; EC levels within the spring pool were also low and within the target range specified in the Ecology Australia (2019) *Offset Management Plan: 191 Springberg Lane, Perry Bridge* (EPBC 2016/7755).

In this instance, the survey data suggests therefore that there is no direct correlation between water depths and salinity levels. Rather, each wetland system operates at its own unique levels and values. Whilst studies suggest that flooding can be beneficial for GGF breeding success (Wassens *et al.* 2008), it may be that adding water (pumping) to these systems may not be the answer to reducing salinity levels. We postulate that such an interventionist course of action may not have a significantly beneficial result, and may be impractical at this site.

Voros *et al.* (2023) identified threatening processes that affect GGF populations, including disease (specifically Chytridiomycosis) as having the greatest impact on this species. The eDNA analysis did not identify the presence of *Batrachochytrium dendrobatidis*, known to cause Chytridiomycosis, from the samples taken. It is hopeful therefore that this disease is not present on site, and, with adequate quarantine measures in place, that the wetlands and GGF population on site can remain in a Chytrid free state. Suitable quarantine measures to be implemented on site are detailed in Section 5.3 above.

Finally, GGF numbers with the Wetland System 04 (western) complex appear to be on the rise. We are hopeful therefore that GGF will persist at the broader site, and that with a return to adequate rainfall levels, salinity within other of the site's wetlands will return to levels conducive to the successful development of a GGF population on site.

The location of all adult male calling GGF records, from this season's survey and monitoring as well as the 2024 – 2025 (Ecocentric 2025a), 2023 – 2024 (GEM 2024a & 2024b), 2022 – 2023 (GEM 2023) and 2021 – 2022 (GEM 2022) seasons are shown in the GIS aerial mapping that accompanies this report. On-going monitoring, as a condition of the EPBC Permit 2007/3524, will provide further insights into the long-term viability of GGF at this significant wetland location.

7. LIMITATIONS

This report relies on contributions from several consultancies and information provided by the landowner, as available on the Federal EPBC Act public notices portal (accessed online 2025⁸), as well as on-line, publicly available database and mapping resources. Findings contained herein are therefore based on the reports provided at the date of publication; Ecocentric will not be held accountable for post-publication variations associated with report updates from external consultancies, agencies or parties.

This report assumes that the reader is familiar with the EPBC Offset Management Plans and EPBC Permit conditions which have brought about the requirement for this study.

⁸ <http://epbcnotices.environment.gov.au/publicnoticesreferrals/>

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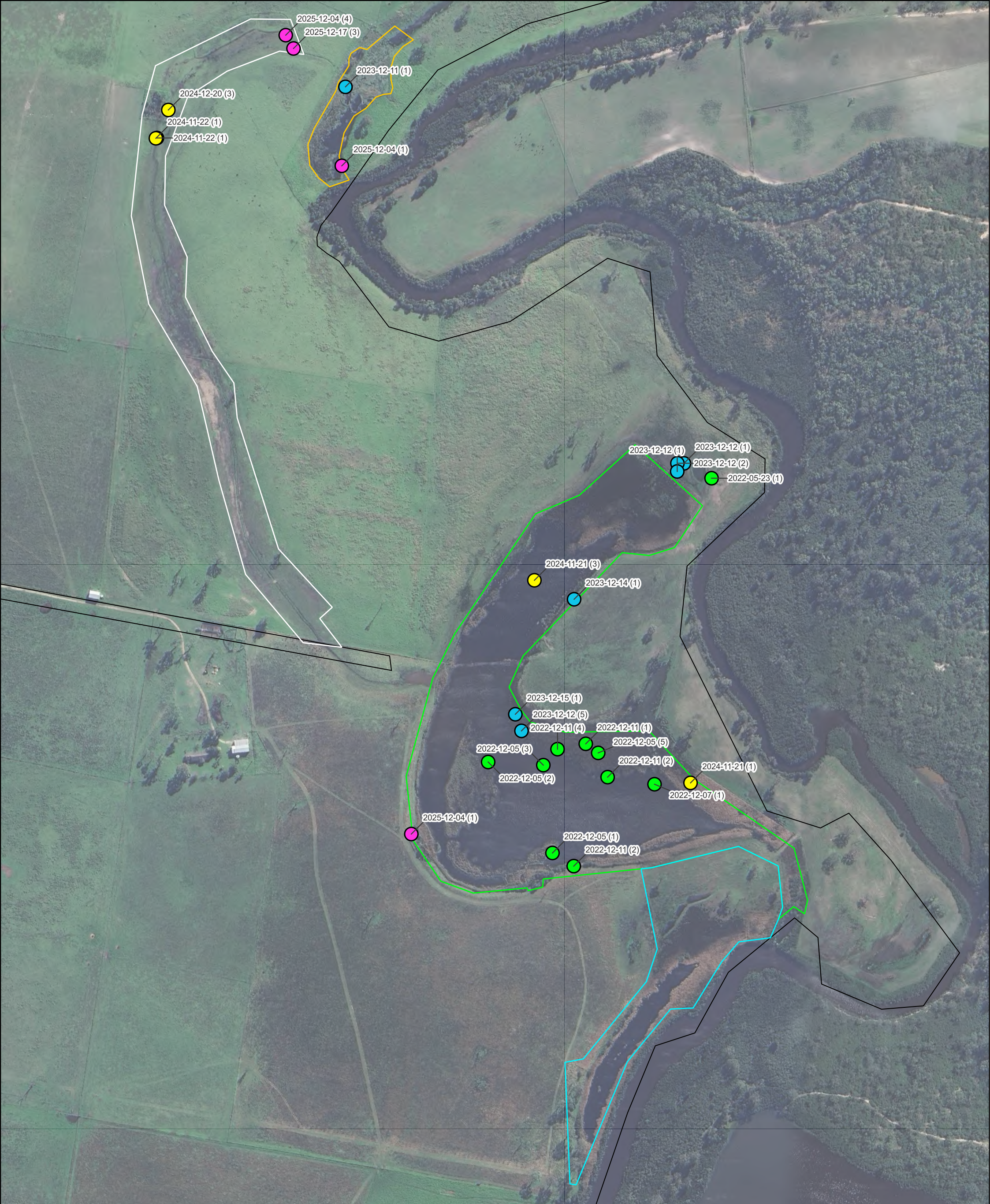
9. APPENDICES

9.1 MAPPING

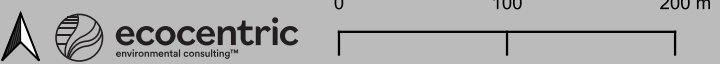
The following GIS aerial and schematic maps were produced using Quantum GIS (QGIS 3.44.8) and were developed from various datasets including:

- Aerial photography available through LASSI, ESRI and Google Maps;
- VicMap layers (Parcel, Roads, Waterways and Contours);
- GPS based data collected in the field.

Unless otherwise indicated all GIS mapping layers use the GDA2020VicGrid (EPSG:7899) mapping datum.



11 April 2026
1:4,500 @A3
GDA2020VicGrid
Google aerial



Growling Grass Frog records (number of individuals)			
Wetland Complex 01 (central)		2022	
Wetland 02 (northern)		2023	
Wetland 03 (southern)		2024	
Wetland System 04 (western)		2025	