



stanmore

APPENDIX AG - GROUNDWATER DEPENDENT ECOSYSTEM HABITAT QUALITY MONITORING PROGRAM



GDE HABITAT QUALITY MONITORING PROGRAM

ISAAC DOWNS EXTENSION PROJECT

Trend | Environmental
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Prepared on behalf of
**STANMORE ID
EXTENSION PTY LTD**



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1. INTRODUCTION

Trend Environmental was engaged by Stanmore ID Extension Pty Ltd to prepare a Groundwater Dependent Ecosystem (GDE) Habitat Quality Monitoring Program for the Isaac Downs Extension (IDE) Project (the Project).

The GDE Habitat Quality Monitoring Program has been prepared to complement the GDE Monitoring and Management Plan (GDEMMP) for Isaac Downs Extension, prepared by WatermarkEco (WatermarkEco, 2026b). It is intended to address and manage uncertainties associated with the potential environmental impacts of the Project on GDEs through the implementation of consistently applied monitoring actions, analysis and reporting of data trends, and the development of 'early warning' triggers to identify potential declines in GDE health.

1.1 PROJECT OVERVIEW

Stanmore ID Extension Pty Ltd (ID Extension, the Proponent), a wholly owned subsidiary of Stanmore Resources Limited (Stanmore), proposes to develop the Isaac Downs Extension Project (the Project), an open-cut metallurgical coal mine located in the Bowen Basin of central Queensland. The Project is situated approximately 15 kilometres (km) southeast of Moranbah and 150 km southwest of Mackay, and it is an extension of the existing Isaac Plains Complex (IPC), which comprises the Isaac Plains Mine (IPM) and the Isaac Downs Mine (IDM; Map 1, Appendix A).

The Project will involve the extraction of approximately 46 million tonnes (Mt) of Run-of-Mine (RoM) coal over 15 years, at a production rate of approximately 2–4.5 Mt per annum. RoM coal will be transported to the Coal Handling and Preparation Plant (CHPP) at IPM for processing. The Project will share infrastructure with IDM, including the Mine Infrastructure Area (MIA), water management systems, and access roads.

The Proponent will prepare an Environmental Impact Statement (EIS) under the Environmental Protection Act 1994 (Queensland; Qld; EP Act) for the Project. The EIS will support an environmental authority (EA) and Progressive Rehabilitation and Closure Plan (PRCP) schedule application under the EP Act. The Project's Referral under the Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth; Cth; EPBC Act) is a controlled action (EPBC 2025/10183). The Project's Referral will be assessed by an accredited assessment process, being the EIS required under the EP Act.

Trend Environmental was commissioned by Stanmore to complete management plans as part of the EIS being prepared for the Project, including a GDE Habitat Quality Monitoring Program.

Changes to groundwater quality and quantity have the potential to indirectly affect ecosystems surrounding the Disturbance area, particularly those that are dependent, or partially dependent, on groundwater (i.e., GDEs). Potential impacts may arise where Project activities result in groundwater drawdown or changes to groundwater quality within aquifers that support vegetation or aquatic ecosystems.

Mining activities typically reduce groundwater levels in surrounding groundwater units, with the spatial extent of influence dependent on the hydraulic properties of the aquifers and aquitards. This area of influence is referred to as the zone of drawdown, with drawdown generally greatest in proximity to active mining areas and progressively decreasing with distance from operations.

1.2 GROUNDWATER DEPENDENT ECOSYSTEMS AND POTENTIAL DRAWDOWN IMPACTS

The Project's GDE Assessment Report (WatermarkEco, 2026a) determined that riparian vegetation fringing the Isaac River, lower reaches of Cherwell Creek and the High Ecological Significance (HES) wetland utilises a discontinuous and seasonally variable perched groundwater system that is associated with active alluvial deposits.



Field data indicated that GDEs rely on this perched groundwater system rather than deeper alluvial aquifer. The perched groundwater system is not subject to drawdown from the Project or other resource projects (WatermarkEco, 2026a). As GDEs demonstrate a reliance on the perched groundwater system rather than the deeper alluvial aquifer, groundwater drawdown associated with the Project or other resource projects (i.e. cumulative drawdown) is unlikely to impact GDEs. Therefore, adverse impacts to groundwater-dependent vegetation are not expected. Despite this, a GDEMMP (WatermarkEco, 2026b) and this GDE Habitat Quality Monitoring Program have been prepared.

Table 2 describes the regional ecosystems (REs) that were verified as having a high likelihood of being GDEs within and adjacent to the Project area (shown in Map 2, Appendix A). These REs include 11.3.25 and 11.3.27b.

Table 1

REs that were verified as GDEs within the Project area

RE	Description
11.3.25	<i>Eucalyptus tereticornis</i> or <i>E. camaldulensis</i> woodland fringing drainage lines
11.3.27b	Freshwater wetlands

1.3 MATTERS OF NATIONAL AND STATE ENVIRONMENTAL SIGNIFICANCE

A number of verified Matters of National Environmental Significance (MNES) and Matters of State Environmental Significance (MSES) intersect GDEs within and adjacent to the Project area or occur in adjacent areas (MNES shown in Map 3, Appendix A and MSES shown in Map 4, Appendix A). MNES are protected under the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth; Cth; EPBC Act), while MSES are defined under the Queensland *Environmental Offsets Act 1992* (Queensland; Qld) and protected under various State legislation.

These MNES and MSES were verified through targeted field surveys, as described in detail in the IDE Terrestrial Ecology Report (Trend Environmental, 2026). Table 2 describes the MNES and MSES that intersect the GDEs verified within and adjacent to the Project area.

The associated MNES values include habitat for threatened species including the Squatter Pigeon (*Geophaps scripta scripta*), Koala (*Phascolarctos cinereus*), Greater Glider (central and southern; *Petauroides volans*), Australian Painted Snipe (*Rostratula australis*), Common Greenshank (*Tringa nebularia*) and the Sharp-tailed Sandpiper (*Calidris acuminata*).

The associated MSES values include a Prescribed RE within the defined distance from the defining banks of a relevant management watercourse map, a Prescribed RE that intersect with an area shown as a wetland on the vegetation management wetlands map, Essential Habitat, High Ecological Significance (HES) wetland, and Protected Wildlife Habitat.

Table 2

GDEs occurring within the Project area

RE	Vegetation Community	Associated MNES Values	Associated MSES Values
11.3.25	Wet eucalypt woodlands on alluvial plains and drainage lines	Squatter Pigeon habitat, Koala habitat, Greater Glider habitat (Map 3, Appendix A)	Prescribed RE within the defined distance from the defining banks of a relevant management watercourse map, Essential Habitat, Protected Wildlife Habitat (Map 4, Appendix A)
11.3.27b	Ephemeral wetlands	Squatter Pigeon habitat, Koala habitat, Greater Glider habitat, Australian Painted Snipe habitat, Common Greenshank habitat, and Sharp-tailed Sandpiper habitat (Map 3, Appendix A)	Prescribed RE that intersect with an area shown as a wetland on the vegetation management wetlands map, Essential Habitat, HES wetland, Protected Wildlife Habitat (Map 4, Appendix A)

1.4 PURPOSE AND SCOPE

The GDEMMP describes a process for establishing thresholds for impacts to GDEs, including undertaking investigations where triggers are exceeded and implementing mitigation measures where required. Where mitigation measures are not effective, habitat quality data will be used to assess whether a significant impact has occurred to riparian or HES wetland habitat and any threatened species or ecological communities that may be associated with that habitat.



The purpose of this GDE Habitat Quality Monitoring Program is to identify potential changes in GDE habitat quality within the Project area, if any, resulting from predicted groundwater drawdown and determine whether this impact is likely to result in a significant impact on MNES and MSES. This will be achieved through the following:

- A monitoring methodology to assess habitat quality within groundwater dependent vegetation communities and surrounding vegetation types not identified as GDEs in the GDE Assessment Report (WatermarkEco, 2026a).
- The establishment of baseline ecological condition within these vegetation communities prior to Project-related groundwater disturbance.
- Procedures for ongoing monitoring of habitat quality within these vegetation communities throughout the Project to detect changes over time and assess the effectiveness of management measures.
- Definition of trigger thresholds for habitat quality changes, and indicators of vegetation stress, which will trigger further assessment of likelihood of significant impacts to MNES and likelihood of significant residual impacts to MSES.
- Initiation of the implementation of mitigation measures as proposed in the GDEMMP (WatermarkEco, 2026b).

Monitoring data collected under the GDE Habitat Quality Monitoring Program will be used, in conjunction with the GDEMMP (WatermarkEco, 2026b), to assist in assessing the significance of Project-related impacts to GDEs and associated MNES.



2. MONITORING PROGRAM

2.1 APPROACH

The GDE Habitat Quality Monitoring Program comprises:

- **A baseline assessment** – the baseline assessment will consider seasonal variations to evaluate the condition and quality of the GDEs before any mining activities that could cause groundwater drawdown in areas containing GDEs.
- **Ongoing monitoring** – GDE habitat quality monitoring will gather the information needed to assess changes in GDE health, and habitat quality under this Program, both during operations and after closure.

The GDE Habitat Quality Monitoring Program forms a component of a larger GDE Monitoring Program, as described in the GDEMMP (WatermarkEco, 2026b). The methods proposed to achieve the habitat quality monitoring under this GDE Habitat Quality Monitoring Program are provided below.

The field assessment and reporting for the Program is to be undertaken by suitably-qualified ecologists.

2.1.1 Baseline Assessment

The baseline assessment will target GDEs within the Project area to characterise the baseline ecological condition of the vegetation. In addition, surrounding vegetation that is not identified as GDEs in the GDE Assessment Report (WatermarkEco, 2026a) will also be subject to the baseline ecological condition assessment as a precautionary measure, to ensure all potential impacts to MNES and MSES are appropriately considered.

The inclusion of additional vegetation areas means that additional MNES values will be assessed, including Brigalow (*Acacia harpophylla* dominant and co-dominant) Threatened Ecological Community (TEC; herein referred to as the Brigalow TEC), Poplar Box Grassy Woodland on Alluvial Plains TEC (herein referred to as the Poplar Box TEC) and Ornamental Snake habitat.

The baseline assessment will use site condition and context methodology from the *Guide to determining terrestrial habitat quality: A toolkit for assessing land based offsets under the Queensland Environmental Offsets Policy, Version 1.2* (DEHP, 2017) to assess the habitat quality. Version 1.2 will be used to be consistent with DCCEEW's Modified Habitat Quality Assessment (MHQA) scoring spreadsheet, which is the preferred approach by DCCEEW for assessment of condition for MNES values.

This habitat quality scoring methodology, however, does not include species stocking rates or weighted scoring which is inconsistent with the methodology described within the *How to Use the Offsets Assessment Guide* (DCCEEW, n.d.) for assessing impacts to MNES, which applies species stocking rates and weighted scoring to inform offset calculations.

Accordingly, where monitoring identifies a Project-related significant impact on GDEs and MNES values, and an offset determination is required, species stocking rates and weighted scoring will be required to be derived in accordance with *How to Use the Offsets Assessment Guide* (DCCEEW, n.d.) and applied to support the relevant offset assessment.

For the MNES species where impacts to GDE may result in a significant impact, the species stocking rate will be given a greater weighting, as the stocking rate is what contributes to the long-term viability of the species and ensures flow-on effects to adjacent habitats, with larger well-connected populations having a higher value. Therefore, site condition will be weighted 30%, site context will be weighted 30%, and species stocking rate will be weighted 40% for the final habitat quality scores. For TECs, species stocking rates will not be applied, but site condition will be weighted 70% and site context weighted 30%.

Full details on the methodology to be applied for site condition, site context, and species stocking rates is provided in *Section 2.3 Proposed Monitoring Methods*.



For MSES (e.g., prescribed REs), site-context and site-condition scoring will be assessed (no additional species attribute scoring or species stocking rate scoring is required) with no weightings as per the BioCondition methodology (Eyre et al., 2015) which is applied as part of the *Guide to determining terrestrial habitat quality: A toolkit for assessing land based offsets under the Queensland Environmental Offsets Policy, Version 1.2* (DEHP, 2017) framework.

Baseline assessments will be undertaken, at a minimum, in the wet and dry seasons over a period of two years prior to construction of the Project.

2.1.2 Ongoing Assessment

Following the completion of the baseline surveys, ongoing GDE habitat quality monitoring will commence, utilising monitoring sites established in the baseline condition assessment.

Results from GDE habitat quality monitoring will be used in conjunction with the GDE health results gathered under the GDEMMP (WatermarkEco, 2026b).

Should monitoring results indicate that GDE habitat quality or GDE health indicators fall outside the defined threshold criteria, an investigation will be initiated, and additional management responses applied in line with the GDEMMP (WatermarkEco, 2026b). Where habitat quality indicators meet or exceed the defined threshold criteria, the monitoring timeframe may be prolonged by up to five years to assess whether the observed change reflects a sustained deterioration or a temporary fluctuation that may be resolved through corrective actions or the re-establishment of typical climatic conditions.

Data collected through ongoing monitoring under this Program will inform whether observed variations in GDE habitat quality reach the threshold at which they are considered a significant impact on GDEs and associated MNES habitat.

2.2 MONITORING SITES

Under the GDEMMP, monitoring sites were selected to ensure adequate monitoring across the GDEs to characterise the baseline ecological condition (WatermarkEco, 2026b). The allocation of monitoring sites under the GDEMMP was primarily informed by the distribution of field-verified GDEs, initial assessments of potential GDEs, and proximity to groundwater monitoring bores, to allow potential relationships between groundwater level changes and ecological condition to be assessed.

The monitoring sites adopted for this GDE Habitat Quality Monitoring Program will be consistent with the GDEMMP monitoring sites, to support integration of habitat quality data with groundwater monitoring and other relevant indicators of GDE health.

Within the GDE areas, 17 permanent habitat quality monitoring sites will be established (shown in Map 2, Appendix A). These sites comprise impact and control sites to enable the detection of changes in habitat quality and to distinguish potential Project-related impacts associated with groundwater drawdown from broader regional changes (e.g., drought) not attributable to the Project.

Table 3 presents the habitat quality monitoring network established under the GDE Habitat Quality Monitoring Program, including impact and control sites, associated GDE Assessment Sites under the GDEMMP (WatermarkEco, 2026b), relevant REs, ecological values (MNES and MSES), the rationale for site selection and location.

Map 3, Appendix A shows where the MNES values intersect GDEs and correspond to habitat quality sites, while Map 4, Appendix A shows where MSES values intersect GDEs and correspond to habitat quality sites.



Table 3
GDE habitat
quality
monitoring
sites

Habitat Quality Monitoring Site	Corresponding IDE GDE Assessment Site under the GDEMMP (WatermarkEco, 2026b)	Type	Associated RE	Purpose of habitat quality assessment	MNES Values	MSES Values	Justification of site selection	Coordinates (Lat, Long)
HQ22	IDE22	Impact	11.3.2	Adjacent RE MNES Threatened Fauna Habitat MSES values	Poplar Box TEC, Squatter Pigeon, Koala, Greater Glider	Prescribed RE that is an of concern RE, Essential Habitat, Protected Wildlife Habitat	GDEMMP Monitoring Site	-22.093305, 148.231705
HQ25	IDE25	Impact	11.3.2	Adjacent RE MNES Poplar Box TEC MNES Threatened Fauna Habitat MSES values	Poplar Box TEC, Squatter Pigeon, Koala, Greater Glider	Prescribed RE that is an of concern RE, Essential Habitat, Protected Wildlife Habitat	GDEMMP Monitoring Site	-22.077168, 148.200661
HQ24	IDE24	Impact	11.3.1	Adjacent RE MNES Brigalow TEC MNES Threatened Fauna Habitat MSES values	Brigalow TEC, Squatter Pigeon, Koala, Greater Glider	Prescribed RE that is an endangered RE, Essential Habitat, Protected Wildlife Habitat	GDEMMP Monitoring Site	-22.047926, 148.160587
HQ2	IDE2	Impact	11.3.25	Riparian GDE MNES Threatened Fauna Habitat MSES values	Squatter Pigeon, Koala, Greater Glider	Prescribed RE within the defined distance from the defining banks of a relevant management watercourse map, Essential Habitat, Protected Wildlife Habitat	GDEMMP Monitoring Site	-22.046070, 148.167682
HQ23	IDE23	Impact	11.3.1	Adjacent RE MNES Brigalow TEC MNES Threatened Fauna Habitat MSES values	Brigalow TEC, Squatter Pigeon, Koala, Greater Glider	Prescribed RE that is an endangered RE, Prescribed RE within the defined distance from the defining banks of a relevant management watercourse map, Essential Habitat, Protected Wildlife Habitat	GDEMMP Monitoring Site	-22.048846, 148.150538
HQ7	IDE7	Impact	11.3.25	Riparian GDE MNES Threatened Fauna Habitat MSES values	Squatter Pigeon, Koala, Greater Glider	Prescribed RE within the defined distance from the defining banks of a relevant management watercourse map, Essential Habitat, Protected Wildlife Habitat	GDEMMP Monitoring Site	-22.052116, 148.171687
HQ5	IDE5	Impact	11.3.25	Riparian GDE MNES Threatened Fauna Habitat MSES values	Squatter Pigeon, Koala, Greater Glider	Prescribed RE within the defined distance from the defining banks of a relevant management watercourse map, Essential Habitat, Protected Wildlife Habitat	GDEMMP Monitoring Site	-22.047035, 148.151816



Habitat Quality Monitoring Site	Corresponding IDE GDE Assessment Site under the GDEMMP (WatermarkEco, 2026b)	Type	Associated RE	Purpose of habitat quality assessment	MNES Values	MSES Values	Justification of site selection	Coordinates (Lat, Long)
HQ8	IDE8	Impact	11.3.25	Riparian GDE MNES Threatened Fauna Habitat MSES values	Squatter Pigeon, Koala, Greater Glider	Prescribed RE within the defined distance from the defining banks of a relevant management watercourse map, Essential Habitat, Protected Wildlife Habitat	GDEMMP Monitoring Site	-22.087589, 148.215877
HQ10	IDE10	Impact	11.3.25	Riparian GDE MNES Threatened Fauna Habitat MSES values	Squatter Pigeon, Koala, Greater Glider	Prescribed RE within the defined distance from the defining banks of a relevant management watercourse map, Essential Habitat, Protected Wildlife Habitat	GDEMMP Monitoring Site	-22.097524, 148.227678
HQ12	IDE12	Impact	11.3.25	Riparian GDE MNES Threatened Fauna Habitat MSES values	Squatter Pigeon, Koala, Greater Glider	Prescribed RE within the defined distance from the defining banks of a relevant management watercourse map, Essential Habitat, Protected Wildlife Habitat	GDEMMP Monitoring Site	-22.104301, 148.220119
HQ13	IDE13	Impact	11.3.1	Adjacent RE MNES Brigalow TEC MNES Threatened Fauna Habitat MSES values	Brigalow TEC, Squatter Pigeon, Koala, Greater Glider	Prescribed RE that is an endangered RE, Essential Habitat, Protected Wildlife Habitat	GDEMMP Monitoring Site	-22.107962, 148.218109
HQ14	IDE14	Impact	11.3.25	Riparian GDE MNES Threatened Fauna Habitat MSES values	Squatter Pigeon, Koala, Greater Glider	Prescribed RE within the defined distance from the defining banks of a relevant management watercourse map, Essential Habitat, Protected Wildlife Habitat	GDEMMP Monitoring Site	-22.112768, 148.198064
HQ15	IDE15	Impact	11.3.25	Riparian GDE MNES Threatened Fauna Habitat MSES values	Squatter Pigeon, Koala, Greater Glider	Prescribed RE within the defined distance from the defining banks of a relevant management watercourse map, Essential Habitat, Protected Wildlife Habitat	GDEMMP Monitoring Site	-22.075174, 148.202571
HQ17	IDE17	Impact	11.3.25	Riparian GDE MNES Threatened Fauna Habitat MSES values	Squatter Pigeon, Koala, Greater Glider	Prescribed RE within the defined distance from the defining banks of a relevant management	GDEMMP Monitoring Site	-22.073314, 148.189187



Habitat Quality Monitoring Site	Corresponding IDE GDE Assessment Site under the GDEMMP (WatermarkEco, 2026b)	Type	Associated RE	Purpose of habitat quality assessment	MNES Values	MSES Values	Justification of site selection	Coordinates (Lat, Long)
						watercourse map, Essential Habitat, Protected Wildlife Habitat		
HQ21	IDE21	Impact	11.3.27b	Wetland GDE MNES Threatened Fauna Habitat MSES values	Squatter Pigeon, Koala, Greater Glider, Ornamental Snake, Australian Painted Snipe, Common Greenshank and Sharp-tailed Sandpiper	Prescribed RE that intersects with an area shown as a wetland on the vegetation management wetlands map, Essential Habitat, HES wetland Protected Wildlife Habitat	GDEMMP Monitoring Site	-22.092248, 148.227265
HQ26	IDE26	Control	11.3.25	Riparian GDE Control (reference) site	Squatter Pigeon, Koala, Greater Glider	Prescribed RE within the defined distance from the defining banks of a relevant management watercourse map, Essential Habitat, Protected Wildlife Habitat	GDEMMP Monitoring Site	-22.050986, 148.135039
HQ27	IDE27	Control	11.3.25	Riparian GDE Control (downstream) site	Squatter Pigeon, Koala, Greater Glider	Prescribed RE within the defined distance from the defining banks of a relevant management watercourse map, Essential Habitat, Protected Wildlife Habitat	GDEMMP Monitoring Site	-22.089128, 148.230093



2.3 PROPOSED MONITORING METHODS

The methodology proposed to inform the calculation of habitat quality in accordance with the *Guide to determining terrestrial habitat quality: A toolkit for assessing land based offsets under the Queensland Environmental Offsets Policy, Version 1.2* (DEHP, 2017) and *How to use the Offsets Assessment Guide* (DCCEEW, n.d.). This methodology has been adopted to maintain consistency with DCCEEW's Modified Habitat Quality Assessment (MHQA) scoring spreadsheet, noting that the purpose of this assessment is to evaluate potential impacts to MNES and MSES arising from degradation of GDEs.

The methodology will include assessment of site-based attributes, site-context attributes and species stocking rates. These components will be used to calculate habitat quality scores for relevant MNES and MSES habitat values and to provide a consistent basis for assessing changes in GDE habitat quality over time.

The MNES values that are either associated with GDE habitat within or adjacent to the Project area, or occur in adjacent areas to GDEs, will have habitat quality assessed as part of the monitoring. These MNES include:

- Brigalow TEC
- Poplar Box TEC
- Squatter Pigeon
- Australian Painted Snipe
- Common Greenshank
- Sharp-tailed Sandpiper
- Koala
- Greater Glider
- Ornamental Snake

The MSES associated with GDE habitat, or occur in adjacent areas, which will have habitat quality assessed as part of the monitoring include:

- Prescribed REs that are an endangered or of concern RE
- Prescribed REs within the defined distance from the defining banks of a relevant management watercourse map
- Prescribed RE that intersects with an area shown as a wetland on the vegetation management wetlands map
- Essential Habitat
- Protected Wildlife Habitat

The proposed monitoring schedule is provided in Table 4. The methodology is described in detail in the following sections.

Wet and dry season survey events should be undertaken at a similar time each monitoring year to support comparability between survey events. Indicative timing includes the end of the dry season, generally around November, and the end of the wet season, generally around May.

Table 4
Proposed assessment
methods for each
monitoring stage and
monitoring schedule

Monitoring method	Monitoring stage	Frequency	Role responsible for monitoring
Habitat quality scoring in accordance with <i>Guide to determining terrestrial habitat quality: A toolkit for assessing land based offsets under the Queensland Environmental Offsets Policy, Version 1.2</i> (DEHP, 2017) and species stocking rates as described in the <i>How to use the Offsets Assessment Guide</i> (DCCEEW, n.d.)	Baseline assessment derives start condition (habitat quality score)	Biannually (wet and dry season) during baseline condition assessment for a minimum period of two years.	Suitably qualified ecologist
	Ongoing GDE habitat quality monitoring	Biennially (every two years), during the dry and wet seasons.	



2.3.1 Habitat Quality Methodology

The habitat quality scoring methodology has been selected as it provides quantitative measures of vegetation composition, structure and ecological function, while also incorporating species-specific habitat characteristics. This enables an assessment of the capacity of GDE habitats to support MNES and MSES values.

The use of this methodology also supports consistency with the approach used to inform offset determinations where impacts to MNES and MSES are determined to be significant. As such, the habitat quality scores derived through this GDE Habitat Quality Monitoring Program may be used to support future assessment of Project-related impacts and, where required, subsequent biodiversity offset calculations.

The specific habitat quality scoring methodology to be implemented at each of the monitoring sites are provided in Table 5.

Table 5 Habitat quality scoring methodology	Attribute	Methods
	Site-based Condition Attributes	Condition is to be recorded using the BioCondition survey methodology, as described in <i>Guide to determining terrestrial habitat quality: A toolkit for assessing land based offsets under the Queensland Environmental Offsets Policy, Version 1.2</i> (DEHP, 2017). BioCondition uses benchmark values to determine a condition score. Benchmarks are quantitative values for each vegetation condition attribute and are used as a reference to compare the condition of REs and vegetation communities. Benchmarks are subject to regular review and updates based on additional data. BioCondition benchmarks are compiled for quantitative site data from reference sites, data from the Queensland Herbarium's CORVEG database as well as other relevant information and expert opinions and are specific to each regional ecosystem or vegetation community (Queensland Herbarium, 2024). Reference benchmarks for REs are to be obtained from the published benchmark dataset (Queensland Herbarium, 2024) and where unavailable for a particular RE, the closest RE benchmark within the same broad vegetation group (BVG) is to be used. For each Habitat Quality Assessment plot, a 100 x 50 m plot is to be established. The following details are to be recorded: • Basic site details, including date and time, observers, site number, location, RE and GPS coordinates are to be recorded. • Permanent photo points (four landscape photographs: two parallel and two perpendicular to the transect) are to be established at the start point of the 100 m transect. The orientation of the photograph is to be recorded using a compass. • Along the 100 m transect line the following data are to be recorded: ○ Tree canopy cover. This is the proportion of the 100 m transect intersected by the foliage of a tree within the emergent, canopy and sub-canopy layer. In order to calculate cover, an observer will walk along the transect line, looking up and noting at which point on the transect an overlap with the tree canopy occurred (crown-intersect method). The observer will walk along the transect until it no longer overlaps with the canopy and note this point on the transect line. The difference in length between the two points is the length of canopy cover. ○ Shrub canopy cover. This is the proportion of the 100 m transect intersected by the foliage of shrubs. Calculation of cover is as per 'tree canopy cover' above. • A 100 m x 50 m plot is to be marked out. Within this area, the following data are to be recorded: ○ Large trees of eucalypt and non-eucalypts. Large trees are defined as the number of living trees per hectare with a diameter at breast height (DBH) greater than the DBH threshold provided in the benchmark document. Native trees larger than the DBH threshold are counted within the 100 x 50 m plot (i.e., 0.5 hectare, which is multiplied by 2 to compare with the DBH threshold within the BioCondition benchmark). ○ Tree canopy height. The median height in metres (m) of the emergent, canopy and sub-canopy heights. These are then averaged. ○ Recruitment of dominant canopy species. The presence of regeneration of the dominant canopy species. That is the proportion of tree species represented by at least one recruit, provided as a percentage.



Attribute	Methods
	- o Native tree and shrub species richness. The number of native tree and shrub species present, determined by walking through the plot and identifying each species present. - o Coarse woody debris. This is the cumulative length of all logs within the plot that are >10 centimetres (cm) in diameter and >50 cm in total length. • A 50 x 10 m plot is to be marked out. Within this area, the following data are to be recorded: - o Native plant species richness. The number of native non-woody species (i.e., grass and forbs) present within the ground layer, determined by walking through the plot and identifying each species. - o Five 1 x 1 m quadrats are to be placed along the transect at the 35, 45, 55, 65 and 75 m marks. These quadrats are to be assessed for percentage cover of native perennial grass, organic litter and non-native plants. The cover percentages for each are then averaged across the five quadrats to provide a final value contributing to ground cover. These data are then compared to the Benchmark data to give a score based on the weightings using the formulas provided within the <i>BioCondition Assessment Framework for Terrestrial Biodiversity in Queensland, Version 2.2 (BioCondition Assessment Manual; Eyre et al., 2015)</i> for each attribute.
Additional Site-Condition Attributes	In addition to the above attributes for site condition, the following species habitat indices are to be included in site condition scoring, consistent with DCCEE's Modified Habitat Quality Assessment (MHQA) scoring spreadsheet: • Quality and availability of food and foraging habitat: • Quality and availability of shelter Evaluation of species-specific habitat characteristics provides an indication of the capacity of the GDE habitats to support MNES populations. These attributes are species specific, as detailed below: Squatter Pigeon - The quality of food and foraging habitat for the Squatter Pigeon will be assigned a score out of 10, based on the average score from the following criteria: • Relative abundance of native grasses (food) present – calculated by dividing the native perennial grass cover in the Habitat Quality Assessment plot by the native perennial grass cover detailed in the benchmark for that RE community, converted to a score out of 10. • Relative diversity of native grass species present – estimated based on the number of native grass species in the Habitat Quality Assessment plot, assigning scores from 0-10 where 0 = no native grasses, 5 = 1 native grass and 10 = 2+ native grass species present. • Ease of movement – estimated based on the connectivity of vegetation and the physical and behavioural barriers to movement, assigning scores from 0 – 10 where 0 – 2 = (movement totally restricted), 2 – 4 (substantial, frequent barrier), 4 – 6 (moderate, occasional barrier), 6 – 8 (negligible barrier), 8 – 10 (along a Squatter Pigeon movement corridor). The quality and availability of shelter will be derived by assigning scores for both tree canopy cover and subcanopy cover from 0-5 each where 1 = <10%, 3 = 10-30% and 5 = >30% then adding these scores together out of 10. Australian Painted Snipe, Common Greenshank and Sharp-tailed Sandpiper – the quality and availability of food, foraging and shelter habitat for the Australian Painted Snipe, Common Greenshank and Sharp-tailed Sandpiper will be assigned a score out of 10, based on the average score from the following criteria: • Availability of wetland or seasonally inundated foraging habitat – estimated based on the extent and persistence of shallow water, saturated soils, muddy margins or damp depressions within the Habitat Quality Assessment plot, assigning scores from 0-10 where 0 = absent, 5 = limited or ephemeral habitat present and 10 = extensive suitable foraging habitat present. • Relative abundance of wetland vegetation and groundcover structure – estimated based on the presence of low, dense wetland vegetation suitable for foraging and concealment, assigning scores from 0-10 where 0 = absent, 5 = sparse or patchy wetland vegetation and 10 = well-developed wetland vegetation structure. • Disturbance and ease of movement within wetland habitat – estimated based on the level of disturbance, habitat fragmentation and physical barriers, assigning scores from 0-10 where 0-2



Attribute	Methods
	= habitat highly disturbed or movement restricted, 2–4 = substantial disturbance/barriers, 4–6 = moderate disturbance/barriers, 6–8 = negligible disturbance/barriers and 8–10 = intact wetland habitat with high connectivity to adjacent suitable habitat The quality and availability of shelter will be derived by assigning scores for wetland vegetation cover and availability of dense low vegetation/refuge habitat from 0-5 each where 1 = limited or absent, 3 = moderate availability and 5 = extensive availability, then adding these scores together out of 10. Koala and Greater Glider- The quality and availability of food and foraging habitat for the Koala and Greater Glider will be assigned a score out of 10, based on the average score from the following criteria: • Relative abundance of food trees present – calculated by dividing the number of mature Eucalypt trees in the Habitat Quality Assessment plot by the number of mature Eucalypt trees detailed in the benchmark for that RE community, converted to a score out of 10. • Relative diversity of food tree species present – estimated based on the number of food tree species in the Habitat Quality Assessment plot, assigning scores from 0-10 where 0 = no food trees, 5 = 1 food tree species and 10 = 2+ food tree species present. • Ease of movement – estimated based on the connectivity of vegetation and the physical and behavioural barriers to movement, assigning scores from 0 – 10 where 0 – 2 = (movement totally restricted), 2 – 4 (substantial, frequent barrier), 4 - 6 (moderate, occasional barrier), 6 - 8 (negligible barrier), 8 - 10 (along a koala movement corridor). The quality and availability of shelter will be derived by assigning scores for both tree canopy cover and subcanopy cover from 0-5 each where 1 = <10%, 3 = 10-30% and 5 = >30%, then adding these scores together out of 10. Ornamental Snake – the quality and availability of food, foraging and shelter habitat for the Ornamental Snake will be assigned a score out of 10, based on the average score from the following criteria: • Relative abundance of frogs, converted to a score out of 10. • Ease of movement – estimated based on connectivity of vegetation and physical or behavioural barriers to movement, assigning scores from 0 – 10 where 0 – 2 = movement totally restricted, 2 – 4 = substantial, frequent barrier, 4 - 6 = moderate, occasional barrier, 6 - 8 = negligible barrier, 8 - 10 = along an Ornamental Snake movement corridor. The quality and availability of shelter will be derived by assigning scores to the average tree canopy cover from 0-5 each where 1= <10%, 3 = 10-30% and 5 = >30%, then multiplying by 2 to get a score out of 10.
Site-context (Landscape scale) Attribute scoring	Site context scoring will involve assessing the surrounding landscape-scale attributes through the use of aerial imagery, GIS mapping and spatial analysis. The following parameters will be used to assess landscape-scale attributes; however, their use differs according to whether the subregion is fragmented or intact. • Size of patch: Size of the area (being assessed) and any directly connecting remnant vegetation. • Connectedness: Used only for fragmented subregions. This assessment involves measuring the proportion of the site's boundary which is connected to remnant vegetation. • Context: Assessment involves measuring the percent of remnant vegetation within a 1km buffer around the site. Distance to permanent watering point is only scored for intact landscapes hence will not be used during for the assessment for this Project. Usually, however permanent water points include dams, earth tanks, raised ring-tanks, troughs on pipelines and natural permanent water supplies (rivers and waterholes). This parameter is up to a 5 km radius. • Ecological corridors: This is determined by the proximity of the site to state, bioregional, regional or sub-regional corridors (terrestrial or riparian). The site can be either located within, share a common boundary with. or not within a corridor.



Attribute Methods

Additional Site-context attributes (species only) **Species mobility capacity:** This attribute is assigned a score out of 10, based on the average score from the following criteria:

- Habitat connectivity – score out of 10 from: 0 - 2 (isolated), 2 - 4 partially isolated, 4 - 6 (periodically isolated), 6 - 8 (major connectivity), 8 - 10 (totally connected).
- Behavioural deterrents to movement – scored out of 10 considering the risk of likely movement due to disturbance: 0 - 2 (extreme risk), 2 - 4 (high risk), 4 - 6 (moderate risk), 6 - 8 (low risk), 8 - 10 (zero risk).
- Physical deterrents to movement – scored out of 10 based on physical barriers: 0 - 2 (total barrier), 2 - 4 (substantial, frequent barrier), 4 - 6 (moderate, occasional barrier), 6 - 8 (negligible barrier), 8 - 10 (active movement pathway – i.e. watercourse or linear corridor).

Threats to the species: For each species, the absence of threats will be calculated as a score out of 25 using the risk matrix below. The score will then be adjusted to a score out of 15. Threats per species will include:

- Squatter Pigeon – threats posed by vehicles, predators, weeds, fire and habitat fragmentation
- Australian Painted Snipe – threats posed by habitat fragmentation, degradation of wetlands, grazing and trampling of wetlands, predation by feral animals and invasion of wetlands by weeds.
- Common Greenshank - threats posed by habitat fragmentation, disturbance at feeding and roost sites and invasion of wetlands by weeds.
- Sharp-tailed Sandpiper- threats posed by habitat fragmentation and invasion of wetlands by weeds.
- Koala – threats posed by vehicles, predators, fire and habitat fragmentation
- Greater Glider – threats posed by predators, fire, habitat fragmentation and barbed wire fencing
- Ornamental Snake – threats posed by habitat degradation, and toxicity from Cane Toads*.

THREATS TO SPECIES							
THREATS MATRIX			Severity				
			Very High	High	Medium	Low	Very Low
			1	2	3	4	5
Scope	Very High	1	1	2	3	4	5
	High	2	2	4	6	8	10
	Medium	3	3	6	9	12	15
	Low	4	4	8	12	16	20
	Very Low	5	5	10	15	20	25

Species Stocking Rate Species stocking rate is a measure of the presence of a species at the site and its value to the greater population to ensure viability. In accordance with the requirements of DCCEEW, species stocking rate is to be assessed on a scale of 0 – 4, based on:

- **Presence detected on or adjacent to the site (neighbouring property with connecting habitat):** Presence detected will be based on survey evidence, and previous known records. Target search methods for the species to be undertaken on the property should be consistent with targeted methodologies undertaken as part of the IDE Terrestrial Ecology Report (Trend Environmental, 2026).
- **Species usage of the site (habitat type and evidenced usage):** The usage of the Project area is assessed for each species, assigning it to one of four categories - not habitat (0), dispersal (5), foraging (10) or breeding (15) habitat. This will be based on the quality of the habitat present and its connectivity to other suitable habitat within the surrounding landscape.
- **Role of the site population in relation to the overall species population** (including whether the population was a key source for breeding or dispersal, necessary for maintaining genetic diversity or near the limit of the species range). The scoring of these criteria will be derived from available information about each species in general and in the region, considering the geographic location and connectivity of the local population in the context of the species' broader range. Large areas

* Indicated exotic species.



Attribute	Methods
	of contiguous habitat with confirmed records will be considered source populations for breeding. Areas of high value habitat with high connectivity to external areas will be considered source populations for dispersal. Populations that represent one of only a few representatives of the species in a geographic area will be considered important for maintaining genetic diversity. The distribution of the species, as mapped in the Commonwealth Species Profile and Threat Database for each species will be used to determine whether the population is near the limits of the species' known range. Species stocking rates will not be revised during each monitoring event under the GDE Habitat Quality Monitoring Program. The Baseline GDE Habitat Quality Monitoring Assessment Report to be completed following the baseline surveys will establish the baseline species stocking rates for the IDE Project based on targeted survey data captured as part of the EIS, as described in the IDE Terrestrial Ecology Report (Trend Environmental, 2026). Species stocking rates will only require comparative assessment where threshold criteria set out in Table 6 are met and an assessment into the likely significance of impacts is required. In this instance, additional targeted surveys for the MNES species will be required to reassess change in species stocking rates.

2.4 DERIVATION OF BASELINE HABITAT QUALITY SCORES

Following each baseline survey, data collected using the methodology described above will be entered into DCCEEW's Modified Habitat Quality Assessment (MHQA) scoring spreadsheet. The four baseline survey events will provide a dataset that captures seasonal variation in habitat quality across the wet and dry seasons over a minimum two-year period.

The baseline dataset will be used to derive average habitat quality scores for each monitoring site and relevant MNES and MSES values. These scores will establish the baseline condition against which future ongoing monitoring results can be compared to identify potential changes in GDE habitat quality over time.

Where relevant, the baseline habitat quality scores will also inform the refinement of threshold criteria for detecting material changes in habitat condition. The baseline scores may be used to support future assessment of Project-related impacts and, where a significant residual impact is identified, to inform subsequent offset determinations in accordance with applicable Commonwealth and State offset assessment guidance.

2.5 THRESHOLD CRITERIA

As outlined in *Section 1.4 Purpose and Scope*, the objective of the GDE Habitat Quality Monitoring Program is to establish threshold criteria for GDEs linked to MNES and MSES values, which will represent a substantial reduction in habitat quality and serve as a trigger for assessment of likelihood of significant impacts and potential offset requirements.

The threshold criteria have been derived using habitat quality scores where a decline in habitat quality score by more than two points relative to the site's baseline score represents a material change in ecological condition beyond expected short-term seasonal variation (Table 6). This decline is considered to represent a potentially significant decline in condition states and as such a decrease in more than two points is the threshold limit to trigger additional investigation into the likelihood that degradation is a direct result of Project activities, the likelihood of significant impacts to MNES and MSES and whether offset obligations are required to compensate for significant impacts.

Table 6
Threshold criteria

Assessment Method	Threshold criteria
Habitat quality scoring (out of 10) as per the methodology described in Table 5	Decrease of more than 2 points

2.6 ACTIONS TRIGGERED IF THRESHOLD LIMIT EXCEEDED

Where threshold criteria are met or exceeded, a staged response will be implemented to verify the monitoring result, determine the likely cause of the change, and identify the appropriate management response.



Stage 1 – Verification of Monitoring Results

Monitoring data will be reviewed to confirm whether the threshold exceedance reflects a genuine decline in GDE habitat quality. This will include review of field data, habitat quality scores, species habitat assessment scores, photographs, survey conditions, seasonal timing and any relevant data limitations.

Stage 2 – Assessment of Likely Cause

Where the threshold exceedance is verified, an assessment of control and impact sites will be undertaken to determine whether the decline is attributable to Project-related activities or reflects natural variation, such as seasonal climatic variability, drought, flood, fire, pest or weed impacts, or other regional environmental factors. This assessment will consider relevant lines of evidence, including comparison with baseline data, control site data, groundwater monitoring results, GDE health indicators collected under the GDEMMP (WatermarkEco, 2026b), rainfall and climatic data, and any other relevant monitoring information.

Where required, additional field verification may be undertaken to confirm the observed change and determine any changes in species stocking rates.

Stage 3 – Implementation of Management and Mitigation Measures

Where the exceedance is considered to be potentially attributable to Project-related activities, the GDE mitigation measures described in the GDEMMP (WatermarkEco, 2026b) will be implemented, where required. The type and timing of mitigation measures will be informed by the nature, extent and likely cause of the observed decline in habitat quality, as detailed in the GDEMMP (WatermarkEco, 2026b).

Stage 4 – Assessment of Residual Impact Significance

Following the implementation of mitigation measures, and where degradation is determined to be attributable to Project activities, a suitably qualified ecologist will be engaged to undertake additional targeted surveys for the MNES species to assess current species stocking rates, for comparison to baseline.

Following the additional surveys, an assessment as to whether the identified degradation is likely to have resulted in a significant impact on the relevant MNES and MSES values identified in Table 2, with reference to the *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance* (DEWHA, 2013) and the Queensland Environmental Offsets Policy - Significant Residual Impact Guideline (DEHP, 2014) are required.

Stage 5 – Offset Consideration and Reporting

Where the assessment determines that a Project-related significant impact has occurred, the findings of the MNES Significant Impact Assessment and MSES Significant Residual Impact Assessment will inform any biodiversity offset obligations. Baseline condition and species habitat assessment scores collected during baseline and ongoing monitoring may be used as an assessment tool to support evaluation of Project-related impact significance, including determining whether biodiversity offsets are required.

The outcomes of each stage, including the evidence considered, conclusions reached and any management actions implemented, will be documented in the relevant GDE Habitat Quality Assessment Report.

2.7 ADAPTIVE PROGRAM MANAGEMENT

The GDE management framework adopts an adaptive management philosophy, and this GDE Habitat Quality Monitoring Program has been developed to align with that approach. Accordingly, the threshold criteria outlined in this Program may be refined during baseline surveys or through ongoing management in response to monitoring outcomes and the identification of any additional information needs.

Where changes are required to the methodology and threshold criteria, this GDE Habitat Quality Monitoring Program is to be reviewed and updated as required.



3. REPORTING AND REVIEW

3.1 REPORTING

3.1.1 Baseline Monitoring Reports

Upon completion of the baseline monitoring surveys (biannual surveys for a minimum two year period), a **Baseline GDE Habitat Quality Assessment Report** will be developed. This report will document the baseline habitat quality condition of monitored GDEs, summarise seasonal variation observed during the baseline period, and present the habitat quality scores assigned to each permanent monitoring site.

The Baseline GDE Habitat Quality Assessment Report will also identify any relevant trends, limitations or data gaps and confirm the baseline condition against which future monitoring results will be compared. The findings will be used to support the refinement of habitat quality thresholds and to inform future assessment of potential Project-related changes to GDE habitat quality.

Where threshold criteria are refined, this GDE Habitat Quality Monitoring Program is to be reviewed and updated prior to the start of ongoing monitoring.

3.1.2 Ongoing Monitoring Report

Reporting on GDE habitat quality during ongoing monitoring will be prepared following each monitoring event. The findings will be compiled into a **GDE Habitat Quality Assessment Report**, where monitoring outcomes will be assessed against the baseline scores and established threshold criteria, taking into account any mitigation measures implemented under the GDEMMP (WatermarkEco, 2026b), to determine whether a reduction in habitat quality has occurred as a direct result of Project activities.

If monitoring identifies that a GDE habitat quality threshold has been exceeded, an assessment will be undertaken to determine whether the results are attributable to Project-related activities or reflect natural variation, such as seasonal climatic variability, drought or other regional environmental factors. In addition, the GDE mitigation measures described in the GDEMMP (WatermarkEco, 2026b) will be implemented, where required.

Where it is determined that the degradation is attributable to Project activities, a suitably qualified ecologist is to assess whether the identified degradation is likely to have resulted in a significant impact on the relevant MNES and MSES values identified in Table 2, with reference to the *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance* (DEWHA, 2013) and the *Queensland Environmental Offsets Policy - Significant Residual Impact Guideline* (DEHP, 2014). The findings of the MNES Significant Impact Assessment and MSES Significant Residual Impact Assessment will inform any biodiversity offset obligations.

Supporting material, including habitat quality data, species habitat attribute assessment results and relevant previous monitoring reports, will be appended to the MNES Significant Impact Assessment and MSES Significant Residual Impact Assessment.

3.2 REVIEWS

The GDE Habitat Quality Monitoring Program is to be reviewed at five-year intervals, or sooner if any of the following occur:

- Modifications to GDEMMP methodologies or monitoring frequency following completion of the baseline surveys;
- Amendments to approval conditions or reporting obligations; or
- Major changes to the approved mine plan or operational activities.

The first review of the Program is required 5 years from approval of the Project.



4. REFERENCES

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- WatermarkEco. (2026b). *Isaac Downs Extension Groundwater Dependent Ecosystem Monitoring and Management Plan.*

Map 1 Project Locality

Map 2 GDE Habitat Quality Monitoring Site Locations

Map 3 MNES values

Map 4 MSES values



APPENDIX

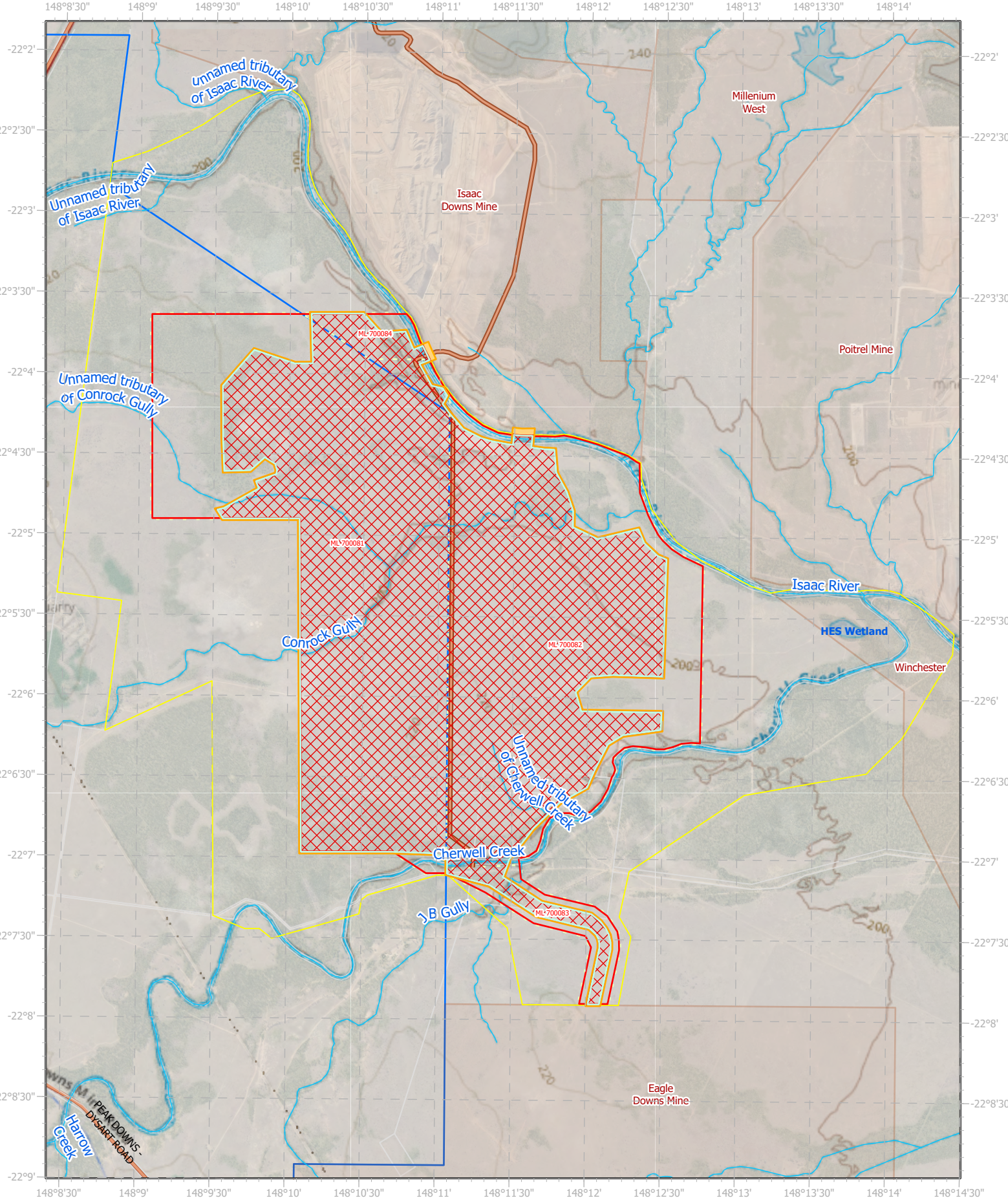
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MAPS



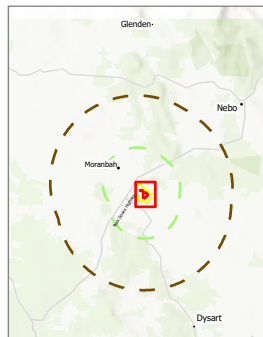
MAP 1

Project Locality



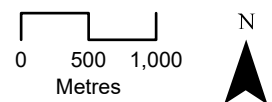
Legend

- | | |
|---|---|
| Project area | Land parcel |
| Survey area | MDL permit granted |
| Disturbance area on Project MLs | ML permit granted |
| Additional disturbance area | ML permit application |
| EPBC impact area | — Watercourses |
| EIS Impact area | — State controlled road |
| Area of interest | |
| Region | |



Isaac Downs Extension Groundwater Dependent Ecosystems Habitat Quality Monitoring Program

Map 1 - Project Locality



Scale: 1:56,000
 Coordinate System: GDA2020 MGA Zone 55
 Prepared: MG Checked: EK Approved : EK
 Date: 28 Feb 2026

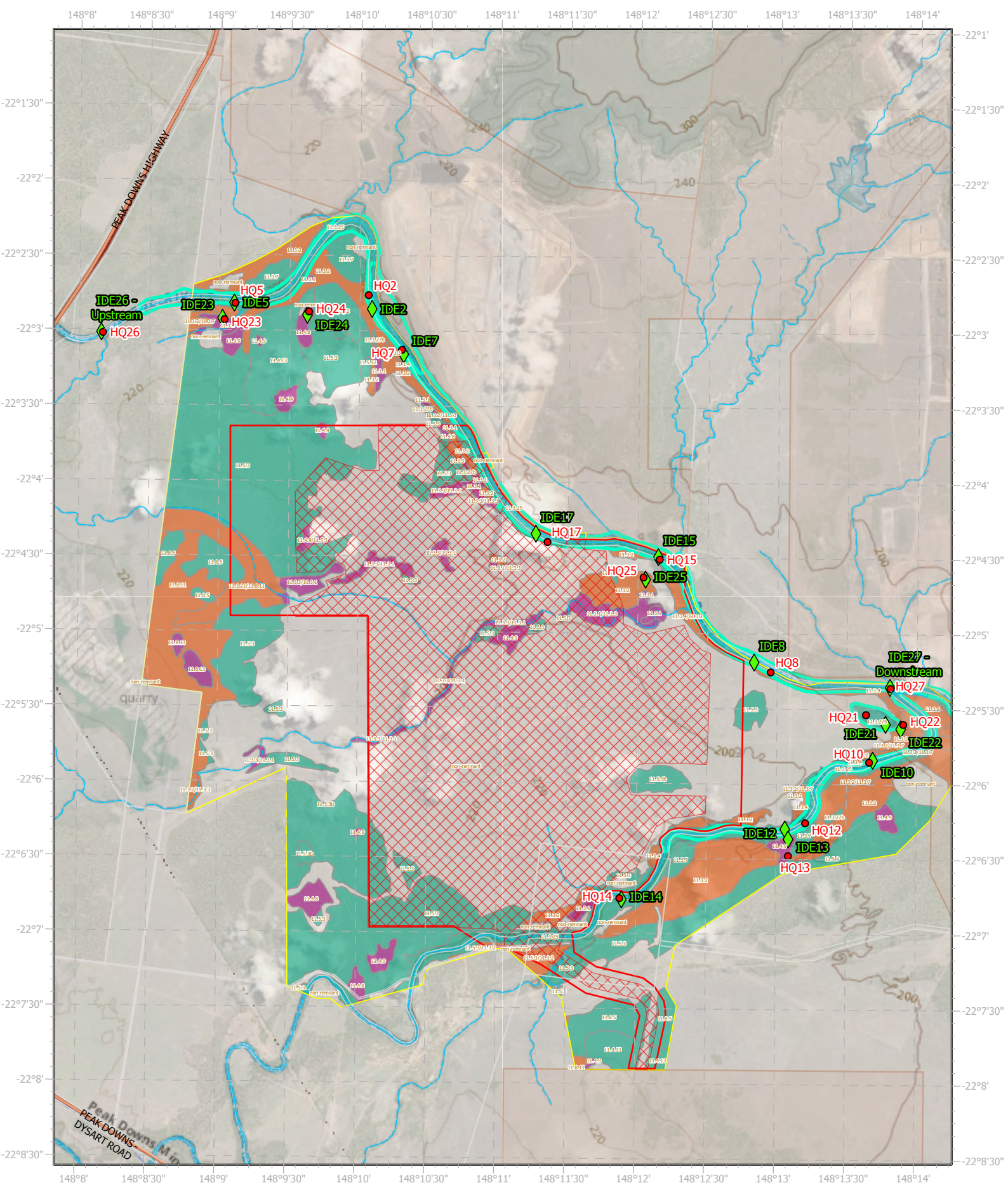


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 94 Kennedy Esplanade South Mission Beach, QLD 4852
 Data Source: Trend - Ecological Data, Qspatial - ML surface granted, SMC - Max Disturbance, Proposed MLA
 Imagery Service Layer Credits: Vantor, Includes material © State of Queensland (Department of Resources), © Planet Labs Netherlands B.V. reproduced under licence from Planet and Geoplex, all rights reserved, 2025., © State of Queensland (Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development) 2025, Department of Resources, DESI, Esri, TomTom, Garmin, FAO, NOAA, USGS, Path: C:\Users\mkg95\OneDrive\Documents\Current work\Isaac Downs Extension\Workspace\Baseline - Project Locality Map 1.aprx



MAP 2

GDE Habitat Quality Monitoring Sites



Legend

- Project area
- Survey area
- Disturbance area
- ML permit granted
- Watercourses
- State controlled road
- Habitat Quality Assessment Sites
- IDE GDE Assessments Sites
- Areas of Known Potential GDE
- Field-verified regional ecosystems**
 - Category A or B containing endangered
 - Category A or B containing of concern
 - Category A or B that is of least concern

Isaac Downs Extension Groundwater Dependent Ecosystem Habitat Quality Monitoring Program

Map 2 - GDE Assessment Sites

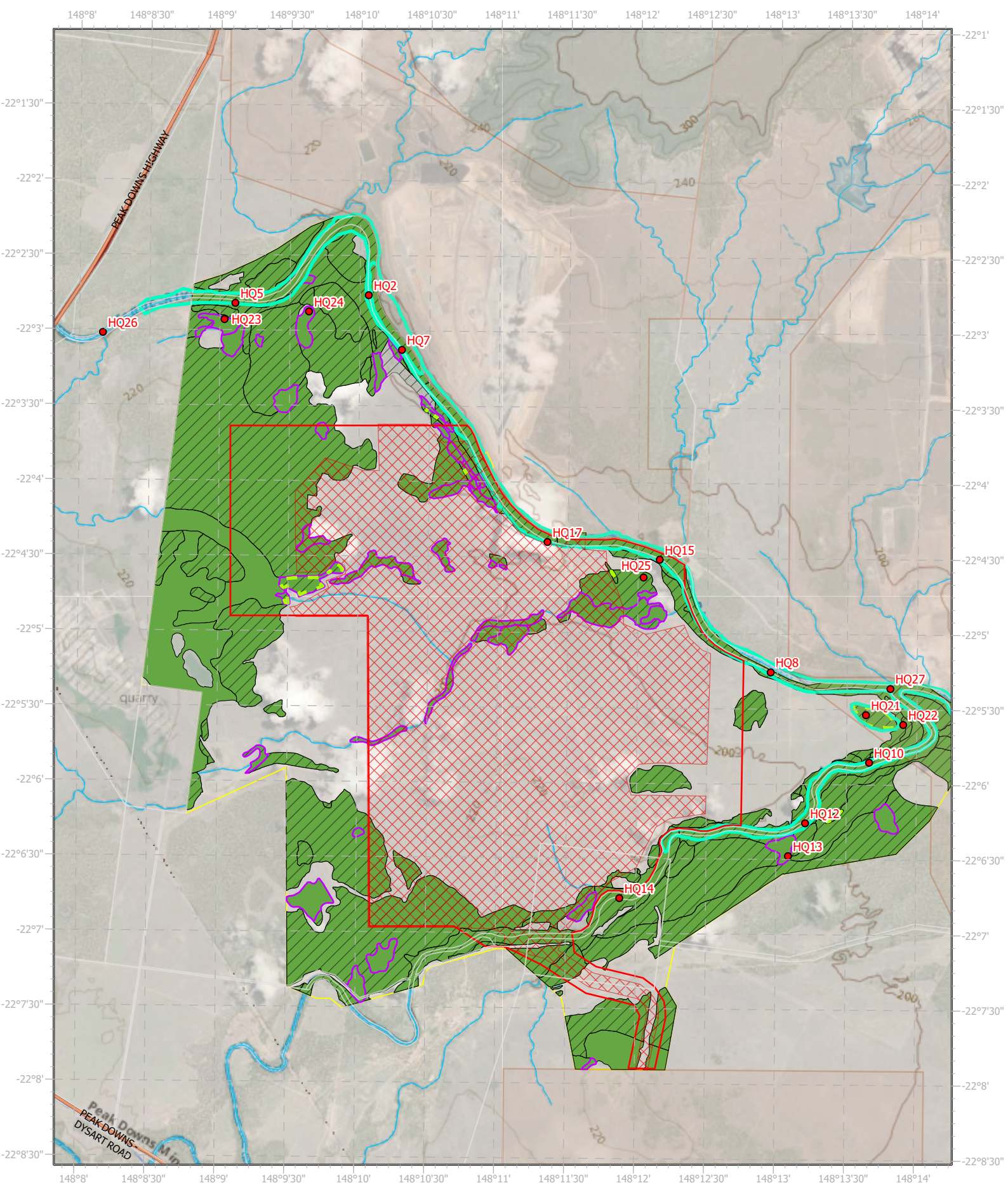
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Coordinate System: GDA2020 MGA Zone 55
Prepared: MG Checked: EK Approved : EK
Date: 02 Jun 2026

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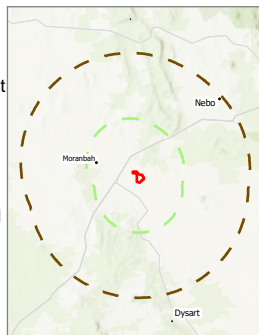
MAP 3

MNES Values



Legend

- Project area
- Survey area
- Disturbance area
- ML permit granted
- Watercourses
- State controlled road
- Habitat Quality Assessment Sites
- Areas of Known Potential GDE
- Koala & Greater Glider habitat
- Squatter Pigeon habitat
- Ornamental Snake habitat
- Common Greenshank, Australian Painted Snipe, and Sharp-tailed Sandpiper habitat



Isaac Downs Extension Groundwater Dependent Ecosystem Habitat Quality Monitoring Program Map 3 - GDE Assessment Sites and MNES Habitat

Scale: 1:58,964
Coordinate System: GDA2020 MGA Zone 55
Prepared: MG Checked: EK Approved: EK
Date: 03 Jun 2026

Trend Environmental Consultants

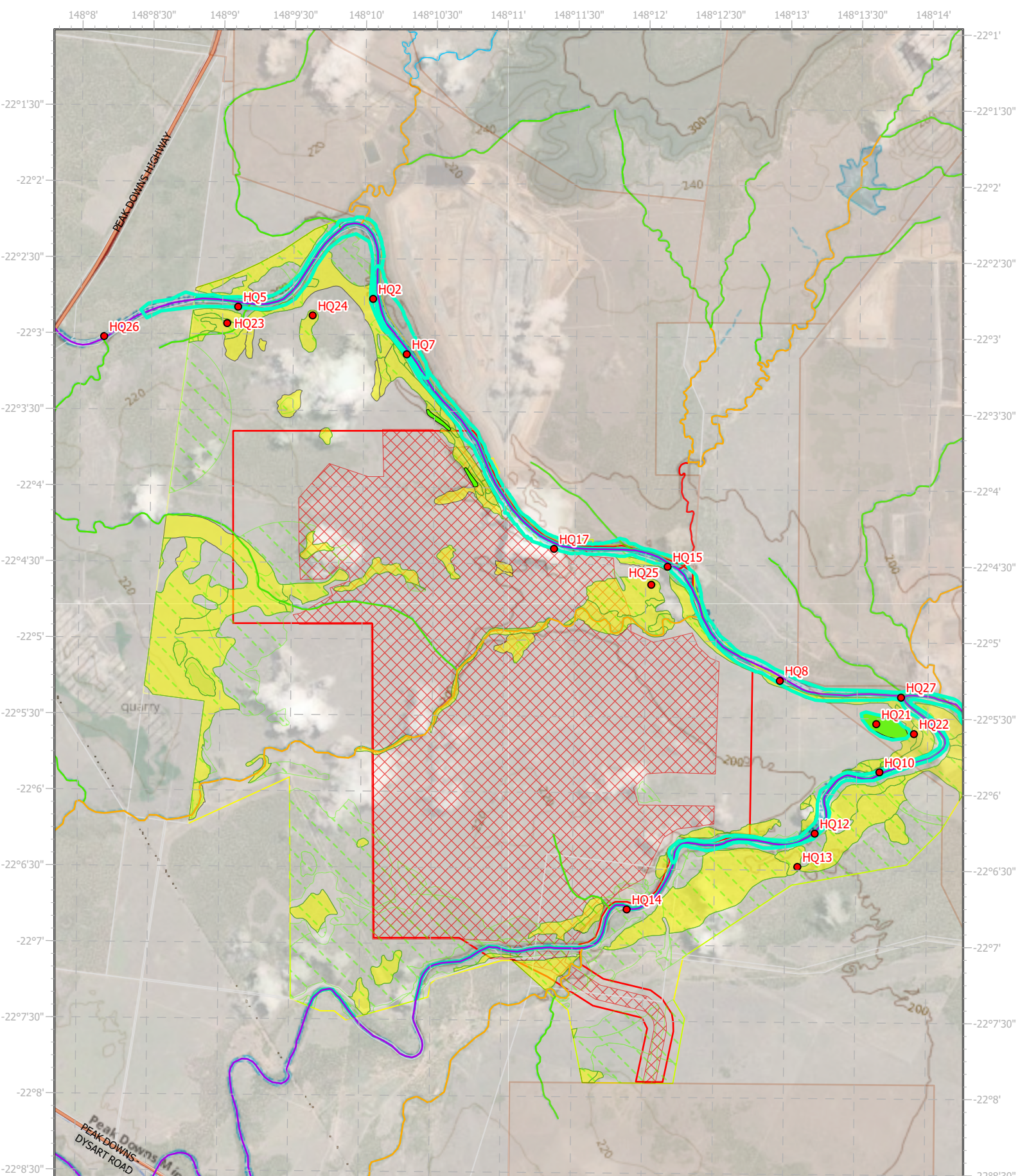
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Path: C:\Users\mkg95\Documents\Current work\Isaac Downs Extension\Workspace\Map 3 - HQA MNES habitat.aprx



MAP 4

MSES Values



Legend

	Project area		Protected Wildlife Habitat
	Survey area		vegetation management wetlands map and HES wetland
	Disturbance area		defining banks of a relevant management watercourse map
	ML permit granted		Queensland waterways for waterway barrier works
	Watercourses		Low
	State controlled road		Moderate
	Habitat Quality Assessment Sites		High
	Areas of Known Potential GDE		Major
	Prescribed regional ecosystems - end & ofc		

Isaac Downs Extension Groundwater Dependent Ecosystem Habitat Quality Monitoring Program

Map 4 - GDE Assessment Sites and MSES

Scale: 1:58,964

Coordinate System: GDA2020 MGA Zone 55

Prepared: MG Checked: EK Approved: EK

Date: 03 Jun 2026

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Path: C:\Users\mkg95\Documents\Current work\Isaac Downs Extension\Workspace\Map 4 - HQA MSES.aprx

DOCUMENT INFORMATION

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Project Name	Isaac Downs Extension
Document Name	GDE Habitat Quality Monitoring Program
Date	June
Version	1
Revision	2

DOCUMENT CONTROL

Version	Revision	Date	Author	Details
1	0	29/05/26	Gabriella Horton and Emily Krunes	Document Draft
1	1	02/06/2026	Emily Krunes	Document revised following Stanmore review
1	2	03/06/26	Emily Krunes	Final Report issued

CITATION

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