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17 June 2026

Senator the Hon Murray Watt
Minister for the Environment and Water
EPBC Referral Number: 2026/10471
Birkdale Community Precinct & Redland Whitewater Centre

By email - EPBC.Referrals@dcceew.gov.au

Dear Minister

REQUEST FOR RECONSIDERATION
EPBC REFERRAL 2026/10471 –
BIRKDALE COMMUNITY PRECINCT & REDLAND WHITEWATER CENTRE

We write to seek reconsideration of your 28 May 2026 decision that EPBC Referral 2026/10471 (Birkdale Community Precinct & Redland Whitewater Centre) is not a Controlled Action if taken in a particular manner.

We make this Request For Reconsideration on the basis of providing **substantial new information and research evidence** about likely significant impacts on a Matter of National Environmental Significance (MNES) as per (s 78(1)(a)) of the *Environment Protection and Biodiversity Conservation Act 1999*.

The essence of the new information we provide in the following pages is expert scientific confirmation that the Koala habitat vegetation species adjacent to the proposed Whitewater Centre are *phreatophytic*, that is – obtaining water from a shallow water table extending into the Conservation Zone and connected to that underlying the Whitewater site.

This is contrary to the conclusion in the Redland City Council Referral that there is no groundwater dependency.

We respectfully request your close consideration of this submission and your decision to declare the Referral a Controlled Action accordingly.

Sincerely

[redacted]

President
Community Alliance for Responsible Planning (CARP) Redlands Inc
on behalf of an alliance of concerned community organisations:

- Birkdale Progress Association Inc
- Redlands2030 Inc
- Community Alliance for Responsible Planning (CARP) Redlands Inc
- Koala Action Group Queensland Inc
- ACF Community Bayside
- Wildlife Preservation Society Queensland Inc (Bayside Branch)

REQUEST FOR RECONSIDERATION EPBC REFERRAL 2026/10471: BIRKDALE COMMUNITY PRECINCT & REDLAND WHITEWATER CENTRE

A. THE CASE PRESENTED

Our case proves the likelihood that substantial remnant and revegetated woodlands comprising large numbers of Local Koala Habitat Tree (LKHT) species, stand to be lost or severely compromised from indirect construction impacts to the shallow water table underlying the Birkdale Community Precinct (BCP) catchment, and other civil engineering activities.

These trees exist within:

- the Matters of National Environmental Significance (MNES) and Matters of State Environmental Significance (MSES) **protected Core Koala Habitat** areas, and –
- the Department of Climate Change, Energy, the Environment & Water (DCCEEW) **Conservation Zone** neighbouring the Redlands Whitewater Centre (RWC).

To begin with, our area of interest is the **woodland vegetation** to the West and North that aligns with the clearing designated as the location for the Redlands Whitewater Centre (RWC).

Refer **Figure 1** below.

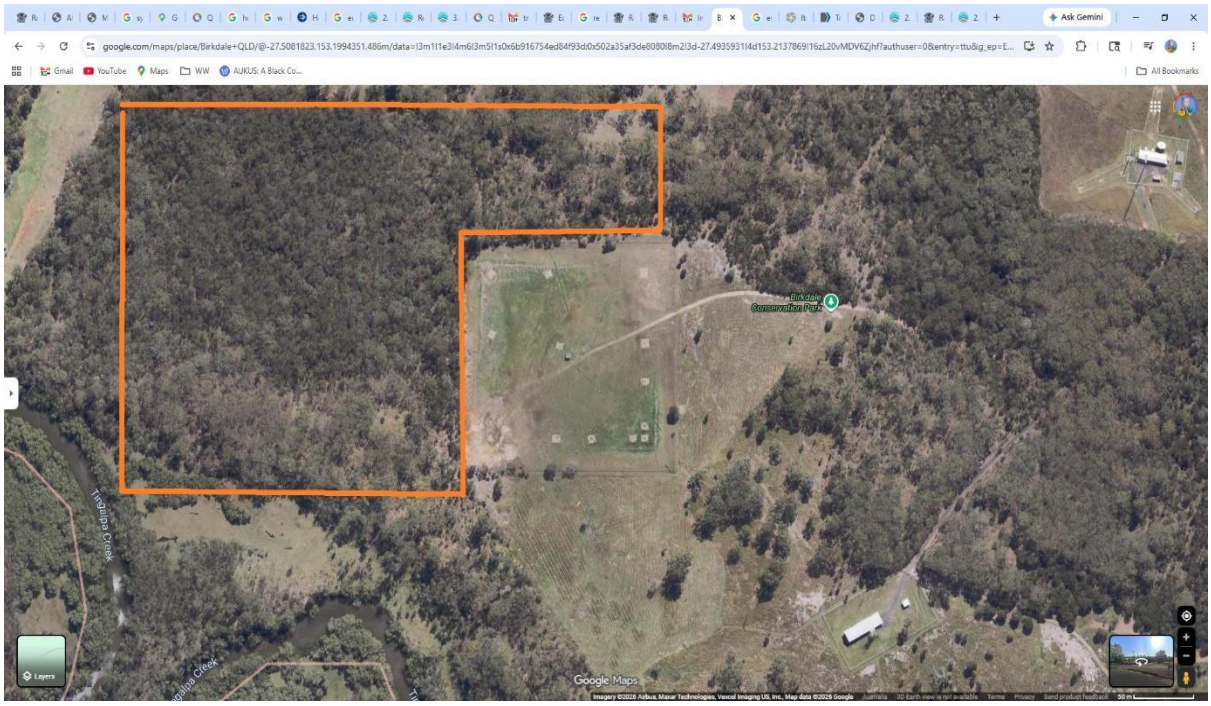


Figure 1- Conservation Zone woodlands bordering proposed Whitewater Centre footprint.

Apparent in the clearing are **visible legacy artefacts** (concrete anchor blocks) of the World War II damp-earth mat Rhombus Antenna.

(Please see previous CARP Submission Ref 2026-10471 Hydrogeology 24.04.26 p10 'Historic hydrogeologic influences - WW2 Rhombic Antennae' for the practical history of the site's shallow aquifer enhancing radio-wave conductivity.)

Focus of attention is next on the **transect** as shown in **Figure 2**.

This transect runs an approximate **500m** distance from the **eastern boundary** of the proposed Redland Whitewater Centre development footprint, and westwards through vegetated woodlands to the bank of Tingalpa Creek.

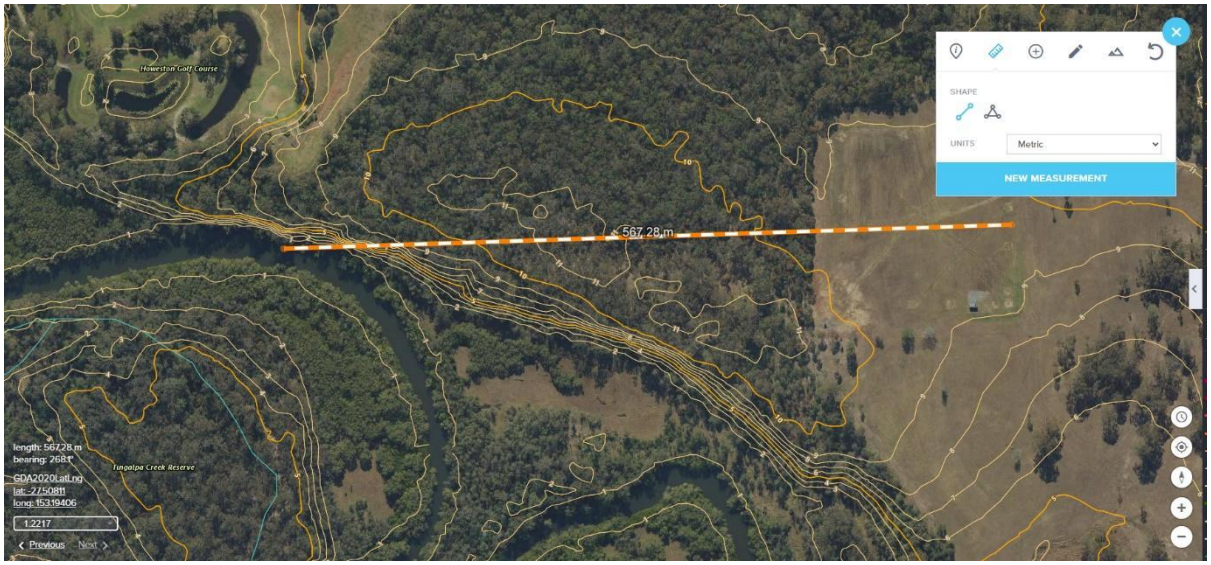


Figure 2 East-West Transect - Tingalpa Creek to Eastern border of Whitewater development

The transect chosen across an East-West dimension captures **representative woodlands** to the Tingalpa Creek reach, and also crosses an existing North-South cross section documented in the proponent's Referral - Groundwater Assessment Report (p12).

See **Figure 3**:

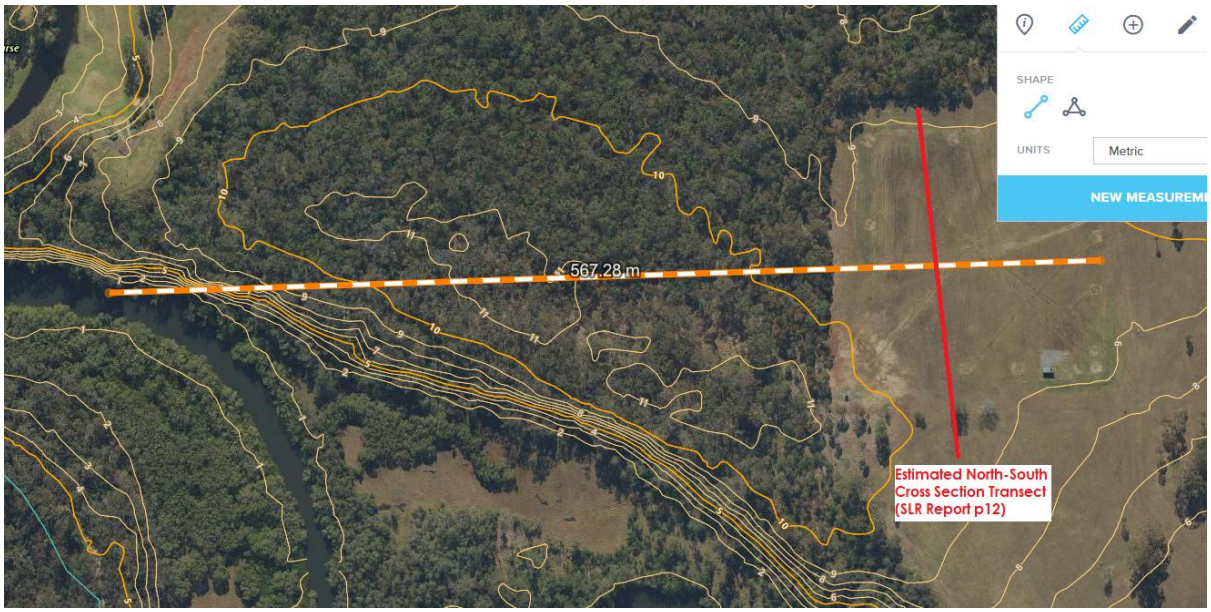


Figure 3 Reference transect perpendicular to proponent north-south equivalent.

The vegetated woodlands are **heavily protected** at both Federal and State levels, as demonstrated by **Figure 4** below - a mapping overlay of the recently published DCCEEW Conservation Area boundary.

Note - the mapping of Queensland State MSES Protection is not shown here as it aligns with this overlay.

The relative location of our **reference transect** is added.

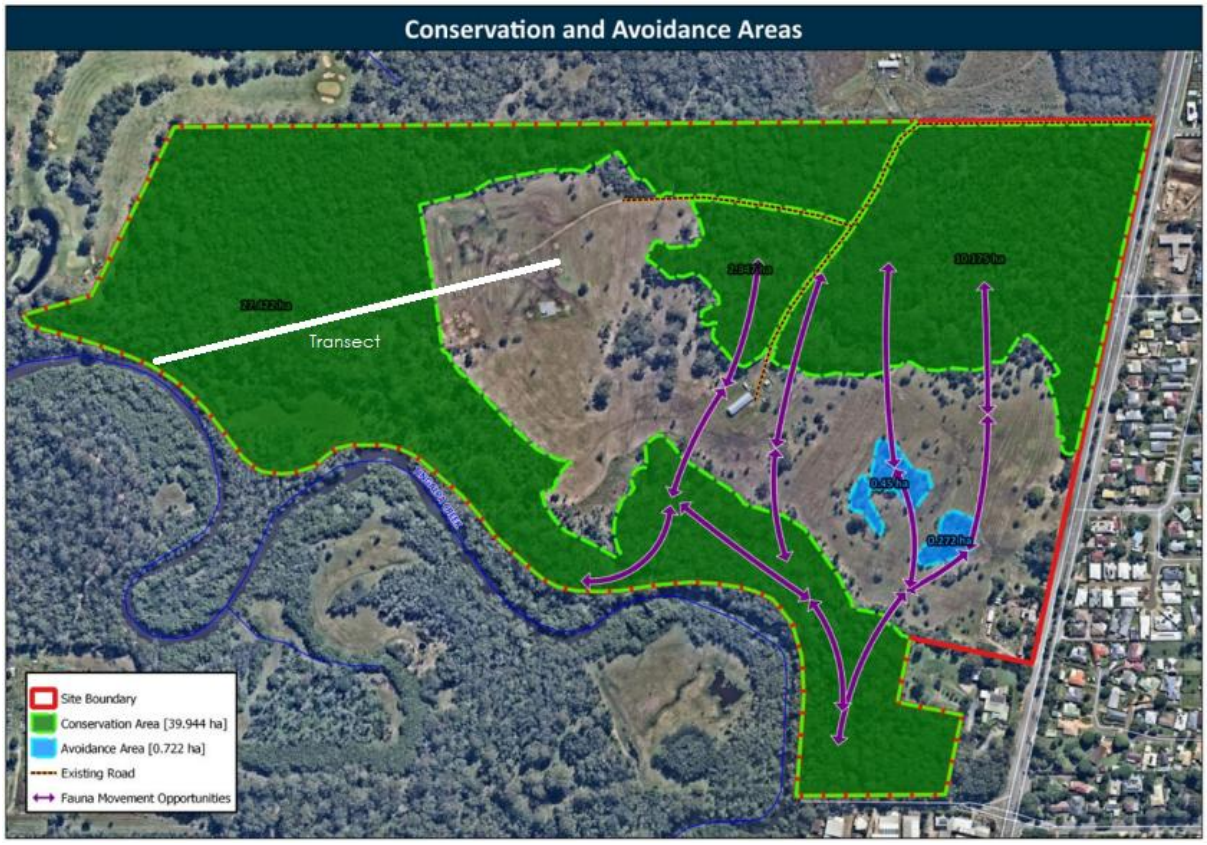


Figure 4 DCCEEW Conservation Area protection mapping

B. SHALLOW BORE LIMITATIONS

Within the proposed Whitewater Centre development footprint, **numerous shallow bores (6m)** were drilled by the proponent to determine the presence of hydrogeologic features such as confined or perched aquifers with potential to impact the Redland Whitewater Centre build.

It appears from the location and depth of the drilling that it was **primarily for the purposes of determining construction methods** and was not intended to determine groundwater impacts in the conservation zone and associated Groundwater Dependent Ecosystem (GDE) outside of the development footprint.

What the shallow drilling finds is the presence of a **water table in alluvial sediments** underlying the development footprint, but it **does not detect** any structural confined aquifers at this limited depth.

We have consolidated the depth-to-water values of two (2) drilling exercises.

> **Note** - Data from bores affected by plotted location ambiguity from initial test drilling has been eliminated. This was an issue covered in depth in the CARP submission Expert Report-GDE-Whitewater 08.01.24F. Refer p16 'Discrepancies in reporting of Bore Hole drilling locations in Document 3'.

Figure 5 below shows **plotted values**. The blue points reference initial Geotech drilling holes, with the red being drilling newly commissioned by the proponent.

We note the values appear to represent **'point-in-time'** readings.

Data showing **seasonal groundwater fluctuations** and **surface expression** (of which anecdotal evidence exists) has not been provided by the proponent.

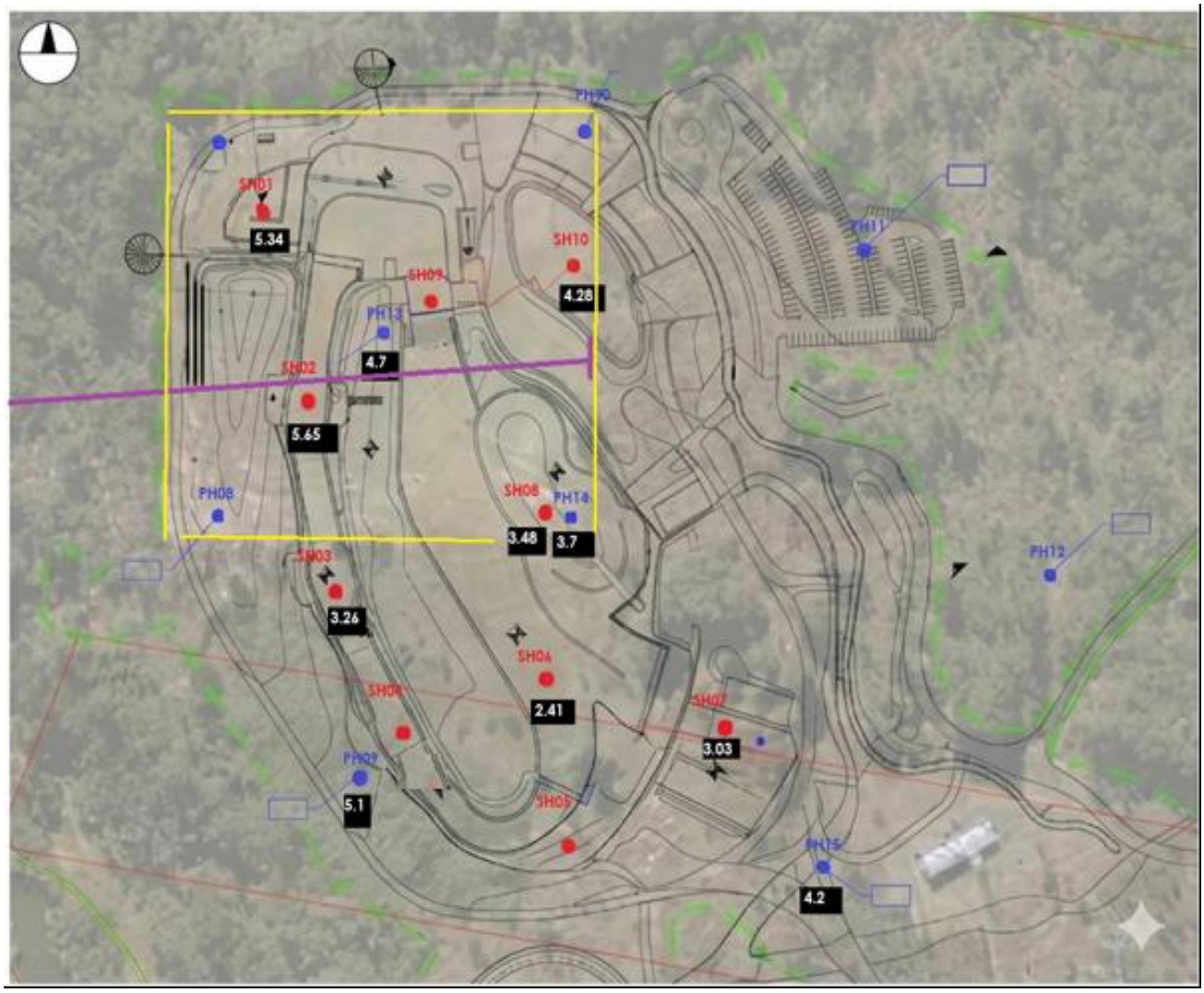


Figure 5 Plotted AHD water table values relative to transect

Further, drilling **limited to a 6m depth** may **disguise deeper water table** scenarios that may also fluctuate in height.

Note also the **purple line** represents an estimated location of the reference transect.

An **outline** of the Whitewater Centre design can also be ascertained from this image.

Figure 6 below highlights the **water table** detected by two (2) boreholes across the Whitewater footprint, running in an East-West direction and proximate to the reference-transect locale.

The available data along the transect supports groundwater flow ***away*** from the creek.

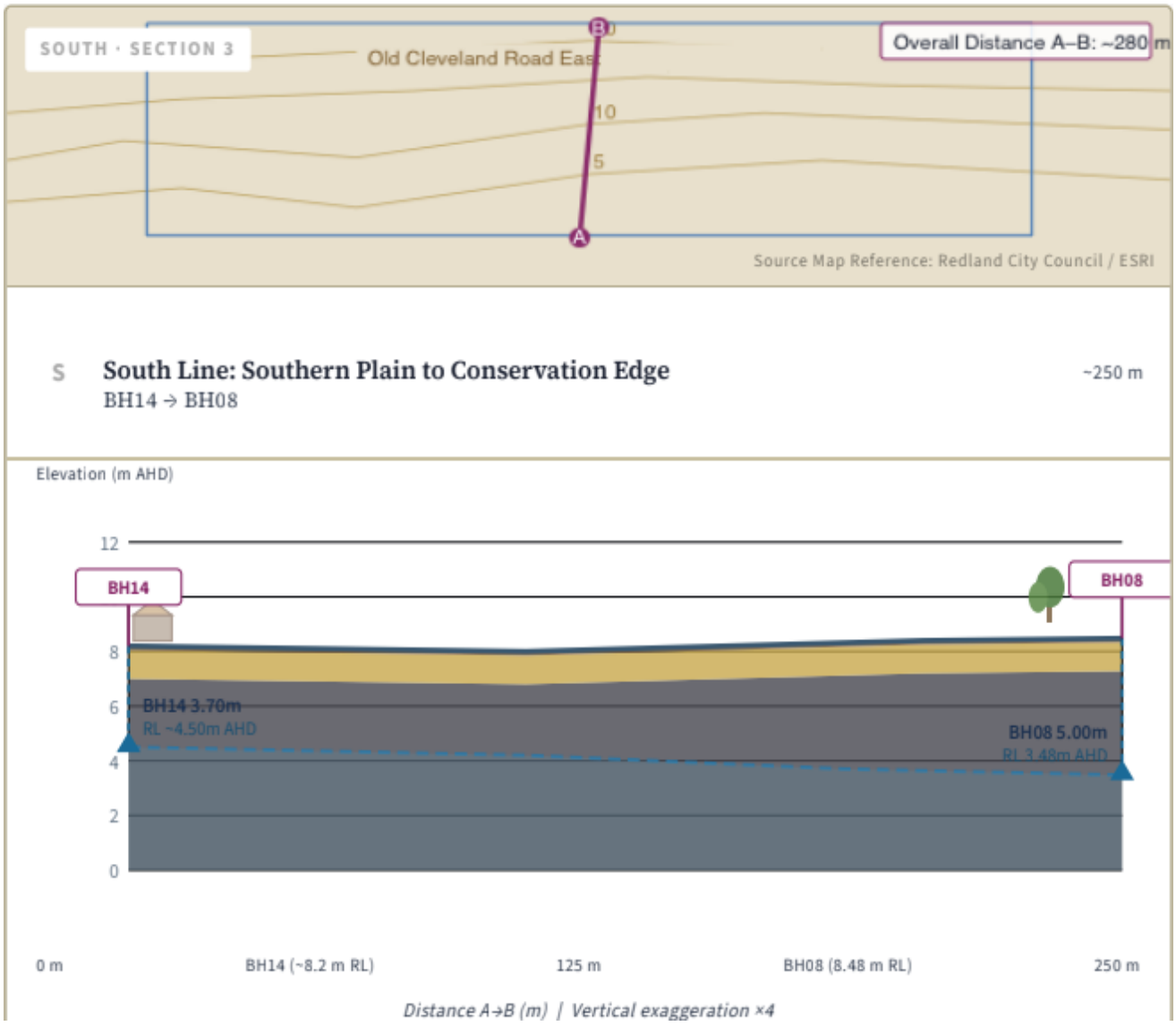
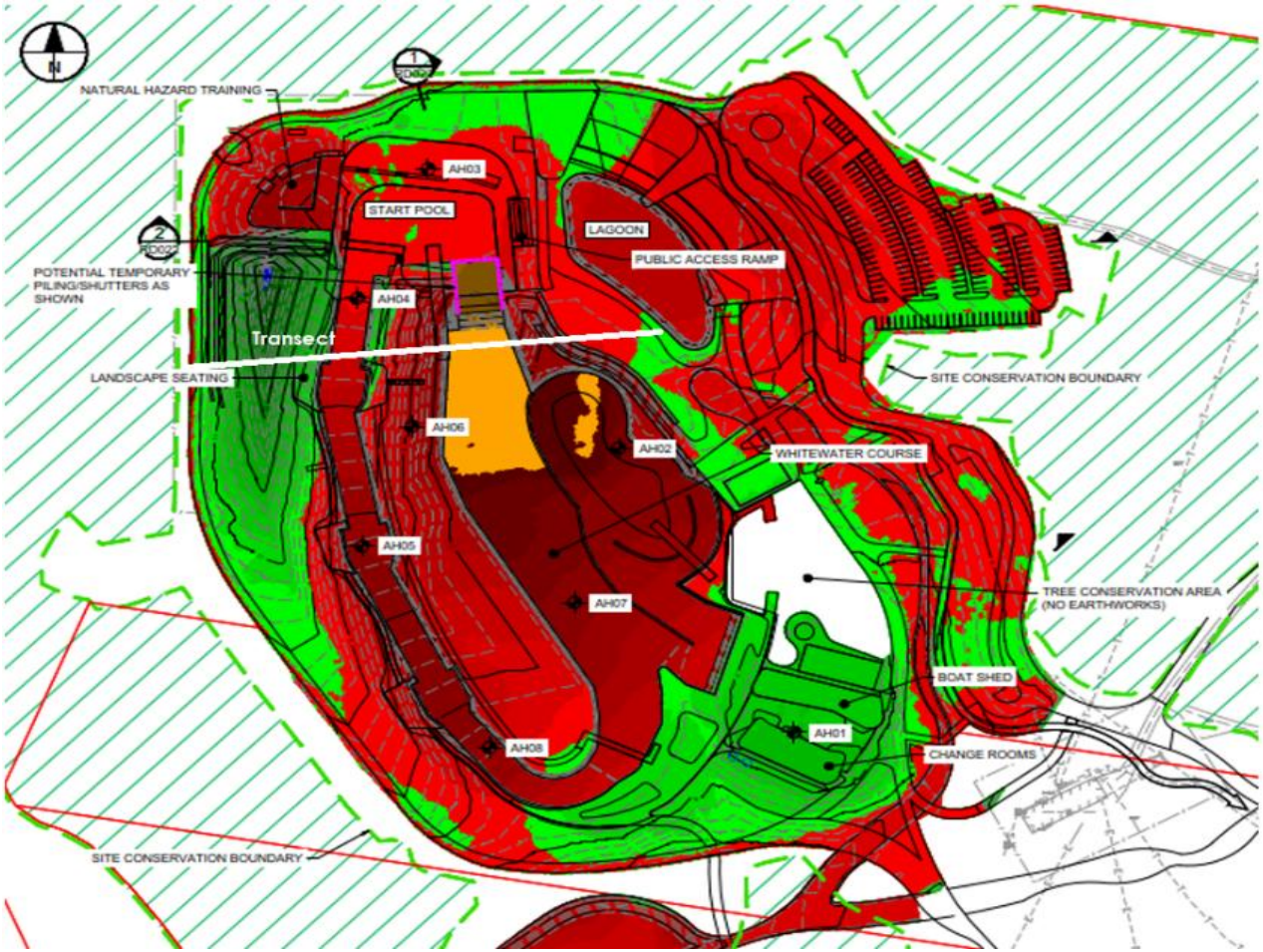


Figure 6 - 2D Cross Section showing water table between Whitewater boreholes traversing E-W

Looking at the site **cut-and-fill civil works proposed**, we can identify graduated depths of excavation, particular to the channels, basin and pump sumps.

Figure 7 below shows this again, relative to the reference transect.



NOTES

1. EXISTING SURFACE DATA PROVIDED DOES NOT CONTAIN SOURCE INFORMATION BUT APPEARS TO BE LIDAR DATA. AS SUCH THERE WILL BE INHERENT INACCURACIES IN EARTHWORKS VOLUMES UNTIL SUCH A TIME AS DETAILED TOPOGRAPHICAL SURVEY HAS BEEN UNDERTAKEN
2. PROPOSED SITE LAYOUT DEVELOPED FOR PVR WAS ADOPTED FOR CONCEPT BULK EARTHWORKS DESIGN PURPOSES WITH NO VALIDATION OF LAYOUT FOR DESIGN VEHICLE TURNING REQUIREMENTS OR COMPLIANCE WITH AS2890.1 OR AS2890.2
3. EARTHWORKS SURFACE EXCLUDES DETAILED EXCAVATIONS FOR FOOTINGS, PATHS AND DRAINS.
4. INITIAL GEOTECHNICAL ASSESSMENT INDICATES THAT ROCK EXISTS FROM APPROXIMATELY >2.5M TO >6M BELOW GROUND LEVEL
5. BOREHOLE LOCATIONS SHOWN ARE APPROXIMATE REFER ENGEO FACTUAL REPORT 23578.000.001 FOR DETAILS.

CONCEPT LEVEL BULK EARTHWORKS SURFACE DEVELOPED USING THE ASSUMPTIONS LISTED BELOW:

1. ROADS - DEPTH TO SUBGRADE: 400mm
2. CARPARK - DEPTH TO SUBGRADE: 300mm
3. LANDSCAPE / PATHWAYS / LIGHT VEHICLE PAVEMENTS AND BUILDING SLABS - DEPTH TO SUBGRADE - 200mm
4. AVERAGE LAGOON DEPTH - 1.2m
5. 1 IN 6 PERIMETER INTERFACE BATTER SLOPES. 1 IN 4 MAX. MOWABLE BATTER SLOPE.
6. WHITEWATER COURSE AND LAGOON - DEPTH TO SUBGRADE - 300mm
7. STORMWATER BASIN/WETLAND - DEPTH TO SUBGRADE - 200mm
8. TOPSOIL STRIPPING DEPTH - 100mm
9. NO ALLOWANCES FOR SERVICES / DRAINAGE TRENCHING / BOXING, DETAILED EXCAVATION.
10. ALL VOLUMES IN THE TABLE BELOW ARE m^3.

STRIPPED SURFACE TO DESIGN EARTHWORKS VOLUMES FULL SITE AREA	
CUT	80,069
FILL	20,928
BALANCE	59,141
WHITE WATER COURSE VOLUMES	
CUT	59,394
FILL	2,951
BALANCE	56,443
AREAS OUTSIDE OF WHITEWATER COURSE VOLUMES	
CUT	17,726
FILL	17,977
BALANCE	-251
LAGOON VOLUME	
CUT	2,949
FILL	0
BALANCE	2,949

SITE STRIPPING VOLUME	
VOLUME	9,685

POTENTIAL TEMPORARY PILING/SHUTTERS (UP TO 8m EXCAVATION) - LENGTH = APPROX. 61m

DEPTH POLYGON LEGEND FROM STRIPPED SURFACE TO DESIGN EARTHWORKS SURFACE

Lower value		Upper value	Colour
-10.0	to	-9.5	m
-9.5	to	-9.0	m
-9.0	to	-8.5	m
-8.5	to	-8.0	m
-8.0	to	-7.5	m
-7.5	to	-7.0	m
-7.0	to	-6.5	m
-6.5	to	-6.0	m
-6.0	to	-5.5	m
-5.5	to	-5.0	m
-5.0	to	-4.5	m
-4.5	to	-4.0	m
-4.0	to	-3.5	m
-3.5	to	-3.0	m
-3.0	to	-2.5	m
-2.5	to	-2.0	m
-2.0	to	-1.5	m
-1.5	to	-1.0	m
-1.0	to	-0.5	m
-0.5	to	0	m
0	to	0.5	m
0.5	to	1.0	m
1.0	to	1.5	m
1.5	to	2.0	m
2.0	to	2.5	m
2.5	to	3.0	m
3.0	to	3.5	m
3.5	to	4.0	m
4.0	to	4.5	m
4.5	to	5.0	m
5.0	to	5.5	m

Figure 7 Whitewater cut and fill - transect overlaid

IMPORTANTLY -

Near to the overlaid reference transect, **Figure 7** shows a **concrete sump to a depth of 7 metres** (to accommodate submersible pumps). This is shown as dark brown in colour. *(Source: https://yoursay.redland.qld.gov.au/65591/widgets/324331/documents/259906 - p13)*

C. CRITICAL FACTORS ABOUT THE AQUIFER / WATER TABLE

As documented in our previous submissions, the hydrogeology of the catchment consists of **'unconsolidated' alluvial shallow aquifer**, and the presence of a **confined aquifer** at significant depth.

The **evidence** for the unconfined shallow aquifer stems from the sediment types from the drill logs, plus the records of groundwater occurrence in most of the shallow Piezometer holes – at a consistent elevation. (A Piezometer is a device used to measure groundwater pressure.)

CRITICALLY -

1. **This shallow aquifer, proven to underlay the Whitewater course, appears unconstrained by hydraulic barriers, meaning it may constitute an expansive shallow water table with connectivity across a catchment, and with a hydraulic gradient connecting to nearby watercourses.**

2. **In the context of the Redland Whitewater Centre, a shallow water table is confirmed at limited test drill sites explicitly within the Whitewater development footprint. No hydraulic barrier constraints are identified.**

3. **Given the Birkdale Community Precinct catchment has consistent alluvial characteristics, an extended shallow water table is therefore inferred to extend beyond the cleared development area and into surrounding zones – including forested areas to the north and west.**

Bringing it together, we can demonstrate this by way of a **2D cross-section profile** transposing the:

- reference-transect
- site elevation
- Whitewater Centre excavation features, and the -
- water table profile as deduced from proximate boreholes.

Accordingly, and in the absence of other critical hydrogeological data, it is reasonable to infer that the **groundwater table extends in a straight line out to the river bank** (potentially leading to groundwater seepage at the river bank –

as per **Figure 8** below.

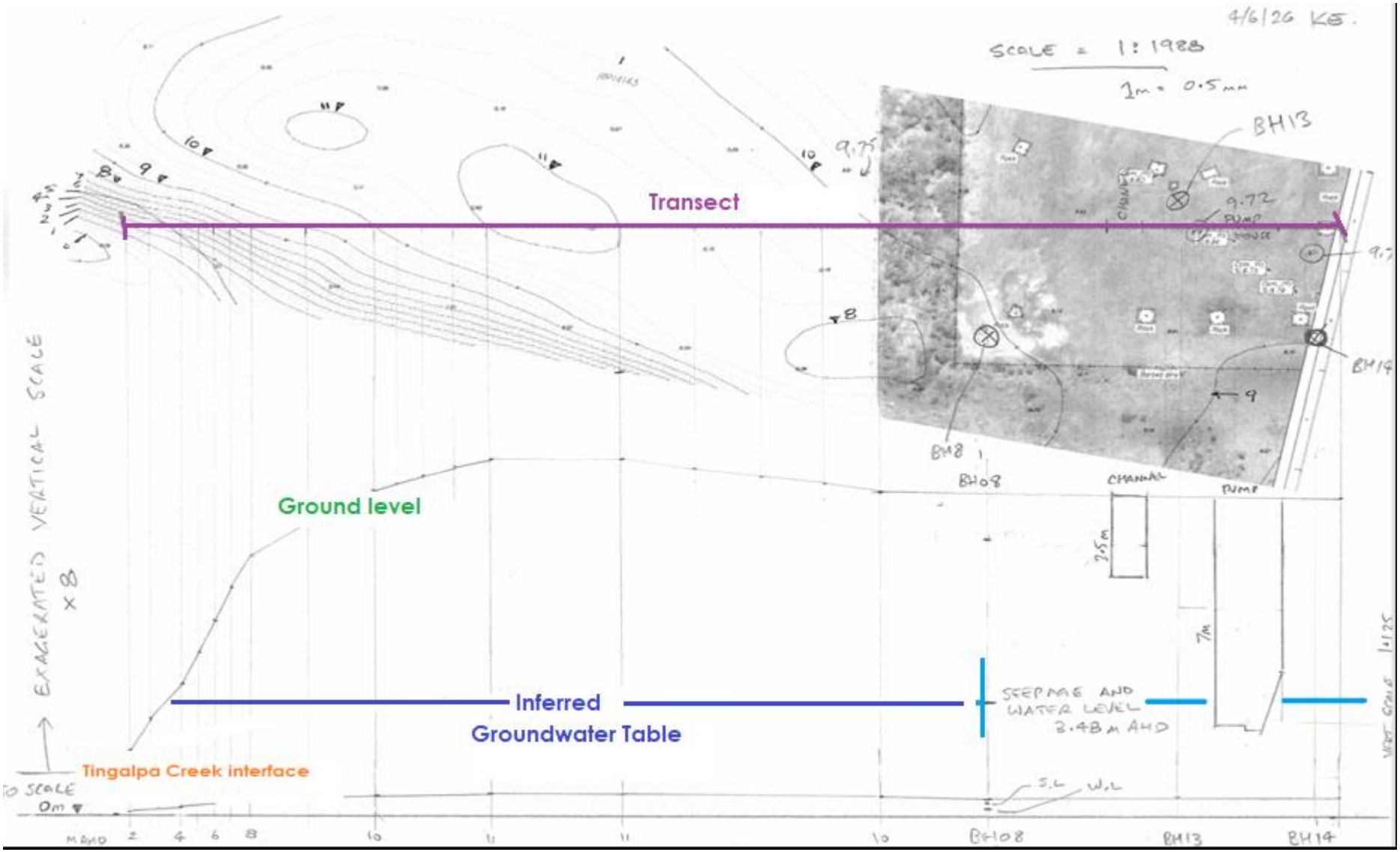


Figure 8 - 2D Cross Section - Water Table transect

IMPORTANTLY -
It is important to avoid the misconception that the water table profile plotted is **static**.

Within the Redland City Council Referral, the bore reading data appears to be **'point-in-time',** with no context as to seasonal variations nor frequency of rises or falls from recharge events or weather drivers.

This appears to indicate **insufficient investment in sampling and monitoring** to determine with any confidence shallow groundwater behaviour and the potential risk this has to any dependent vegetation – as we are about to address.

A critical limitation with the Redland City Council EPBC referral appears to be the avoidance of undertaking any test drilling **within the MNES protected forested areas** neighbouring the Whitewater course, to ascertain the presence of, and temporal or longitudinal data on the behaviour of, **groundwater within vegetation root zones**.

This is perplexing, given that the premise of a groundwater presence in the forested areas neighbouring the Whitewater course, is **clearly indicated** by Queensland Government hydrology mapping as per **Figure 9** below.

This characterisation appears to be confirmed by the geologic samples of alluvial, unconsolidated sediment identified in site investigations.

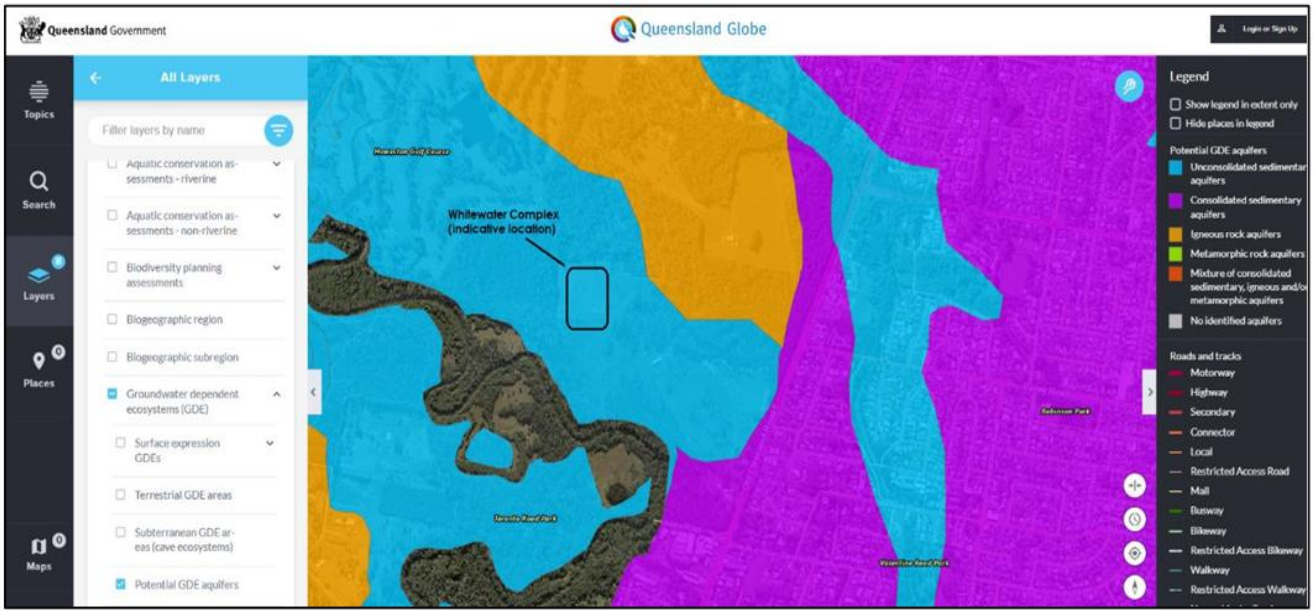


Figure 9 Indication of potential GDE-Aquifer structure

D. REMNANT & REGENERATIVE WOODLAND VEGETATION

Having ascertained a **highly probable shallow groundwater profile** underlying the MNES/ MSES protected Koala habitat and Conservation zones immediately west of the Whitewater Centre, an assessment of remnant and regenerative woodland vegetation within the same transect scope follows.

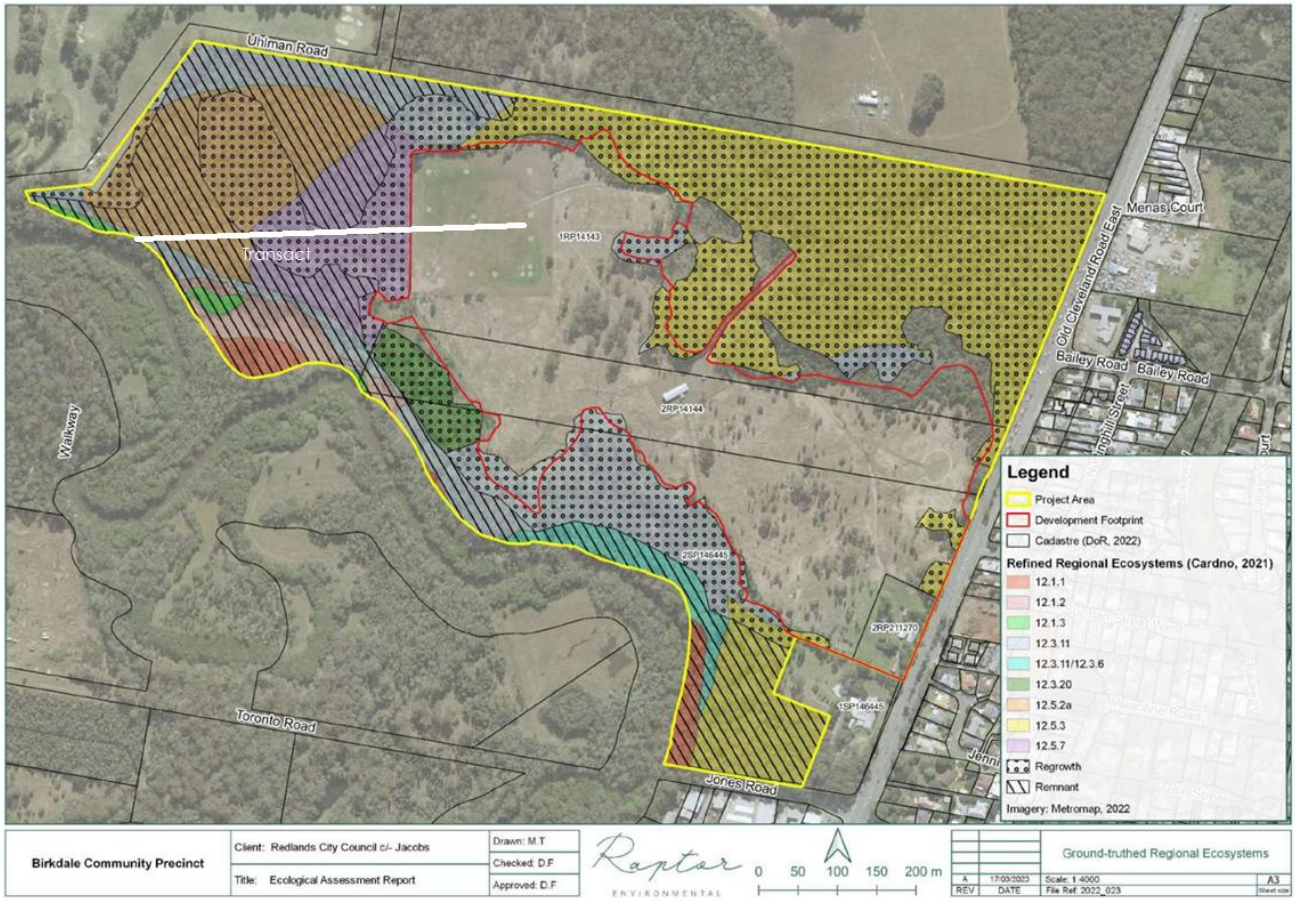


Figure 10 Refined Regional Ecosystem mapping

Figure 10 above shows the **Refined Regional Ecosystem** mapping (supplied by Redland City Council in its Referral) with the transect overlaid for reference.

We see this transect crossing two main **Regional Ecosystem** categories:

- **12.5.7** (classed as *Corymbia citriodora subsp. variegata +/- Eucalyptus portuensis or E. acmenoides, E. fibrosa subsp.*) and –

- **12.5.2a** (classed as *Corymbia intermedia, Eucalyptus tereticornis* woodland).

These ecosystems are characterised as remnant and regenerative vegetation that **includes an array of species supporting the MNES-endangered Koala**, being vital LKHT food trees and those utilised otherwise as refuge for Koala habitation.

IMPORTANTLY –
Our research **specific to the botany** of the **Birkdale Community Precinct** involved identifying and spotting the range of such tree species within the site (both open paddock and Conservation Area woodlands). This exercise identified the Koala food tree species predominant within the transect scope/ Conservation Zone.

These are shown in **Figure 11** below (green highlighted).

Genus	Species	Common Name	Comments
Acacia	*disparrima*	Hickory wattle	
Acacia	*leiocalyx*	Early black wattle	
Acacia	*maidenii*	Maiden's wattle	
Acrostichum	*speciosum*	Mangrove fern	Many examples in the understorey of the River Mangrove area
Acrotriche	*aggregata*	Red ground berry	
Aegiceras	*corniculatum*	River Mangrove	
Allocasuarina	*littoralis*	Black she-oak	
Alphitonia	*excelsa*	Red ash or soap tree	
Avicennia	*marina* subsp.*australasica*	Grey mangrove	
Banksia	*integrifolia*	Coastal banksia	
Casuarina	*glauca*	Swamp oak	
Corymbia	*intermedia*	Pink blood-wood	
Corymbia	*citriodora subsp.variegata*	Spotted gum	Koala food tree
Corymbia	*trachyphloia*	Brown blood-wood	
Daviesia	*ulicifolia*	Native gorse	Well-developed shrubs in full flower
Dianella	*brevipedunculata*	Blueberry lily	
Dianella	*crinoides*	Blue flax lily	
Dodonaea	*triquetra*	Forest hop bush	
Einadia	*hastata*	Berry saltbush	
Eucalyptus	*crebra*	Narrow-leafed iron bark	Preferred koala food tree.
Eucalyptus	*microcorys*	Tallow wood	Preferred koala food tree.

Genus	Species	Common Name	Comments
Eucalyptus	*moluccana*	Gum-topped box	Preferred koala food tree. Unusual in the Redlands
Eucalyptus	*racemosa*	Scribbly gum	Koala food tree
Eucalyptus	*seeana*	Narrow-leaved red gum	Preferred koala food tree. Restricted distribution on site
Eucalyptus	*siderophloia*	Grey ironbark	Koala food tree
Eucalyptus	*tereticornis*	Qld blue gum	Preferred koala food tree.
Eustrephus	*latifolius*	Wombat berry	
Excoecaria	*agallocha*	Milky mangrove /blind-your-eye	
Ficus	*obliqua*	Small-leaved fig	
Fimbristylis	*dichotoma*	Common fringe rush	
Fimbristylis	*ferruginea*	A fringe rush	
Gahnia	*aspera*	Large fruited sawsedge	
Gmelina	*leichhardtii*	White beech	
Imperata	*cylindrica*	Blady grass	
Jacksonia	*scoparia*	Dogwood	
Jasminium	*simplicifolium* subsp. *australiense*	Native jasmine	

Figure 11- Koala Tree Species within western Conservation Zone highlighted (excerpt from KAG Natural Values Birkdale Land Report 2021)

E. KOALA HABITAT SPECIES ARE GROUNDWATER DEPENDENT

From this core list of species (ie – green highlighted), comes the factor that **anchors the case for Reconsideration** of the EPBC Referral Decision, being that –

> there is a scientifically proven body-of-knowledge that confirms all the above Koala Habitat Species as **facultative phreatophytes**.

The scientific research provides clear evidence that *each of the highlighted species in Figure 11* will develop a **groundwater dependency** in the sustained presence of groundwater within the rooting zone of the trees identified at the site, with the species all attracting classification as *facultative phreatophytes***,** that utilise upper-soil moisture after rain but switch to groundwater to sustain growth and canopy quality (**vital to Koala feeding**) during periods of dry conditions.

The following is a summary of the scientific evidence on this classification. (Source references are found at **Attachment 1**.)

- *Eucalyptus tereticornis* (Forest Red Gum) is a **facultative phreatophyte**, meaning it is highly dependent on groundwater. It relies primarily on soil moisture but will tap into shallow aquifers and capillary fringes to survive droughts or sustain growth, making it a critical component of terrestrial GDEs
- *Eucalyptus siderophloia* (Northern Grey Ironbark) can **opportunistically tap into** shallow aquifers (like alluvial systems) or the capillary fringe above the water table, especially near creek lines or coastal drains
- *Eucalyptus moluccana* (Grey Box) is widely classified as a **facultative groundwater user**. While it typically relies on soil moisture, it readily taps into shallow groundwater (usually within 10 to 15 meters) during dry periods or extended droughts to maintain
- *Eucalyptus crebra* (Narrow-leaved Ironbark) is typically classified as a **facultative phreatophyte**—a drought-tolerant species that relies primarily on soil moisture but can utilise shallow groundwater to maintain canopy health and survive prolonged droughts
- *Many Corymbia species* (such as Marri, Bloodwood, and Moreton Bay Ash) are known as **facultative phreatophytes**, meaning they primarily rely on rainfall but can tap into subsurface aquifers or capillary fringes to survive droughts and dry seasons.

Other relevant scientific observations

- Altering local hydrological regimes (ie - groundwater drawdown) poses a risk to communities featuring the **endangered** *E. moluccana, E. propinqua* forests and the Grey Box-Ironbark Woodland. Drawdown can lead to reduced leaf biomass, loss of saplings, and long-term changes to ecosystem structure
- Phreatophytic species often represent fast growing pioneers which are highly resistant to disease. They also provide, shelter, specialised foraging grounds, and nesting/denning areas for native fauna. *Phreatophytes* are also known to be indicators of potable groundwater, and to provide water purification services, as their roots are known to fix heavy metals via the provision of bacteria driven filtration.

- Eucalypt root behaviour over shallow groundwater **-** When the tree has access to a shallow or perched water table, the root dynamics shift:
    - Proliferation Over the Water Table**:** Instead of driving a single taproot down endlessly, the sinker roots and fine feeder roots spread out laterally just above or within the capillary fringe of the water table.
    - Surface Root Suppression**:** Because the shallow groundwater provides a consistent, reliable water source, the tree directs less energy toward deep, penetrating taproots.

F. CRITICAL CONCLUSIONS

These findings demonstrate that **critical Habitat Tree species** within the Conservation Zone are **groundwater dependent,** and that this conclusion can be made with some **authority**.

IMPORTANTLY –
We contend that our **evidence** for the presence of groundwater dependent eucalypt woodlands supporting MNES (**endangered Koalas**) is compelling, and disputes conclusions drawn in the proponent's Referral document which appear to be dismissive of this fact:

> **Section 7.0** of **RCC's Groundwater Assessment Report** – EPBC Referral document states:
>
> "*Both [eucalypt and swamp oak] areas are fully contained with the conservation area of the site … Neither community is generally recognised as being GDE, although they may be affected by changes in local surface water hydrology… It is concluded that there are unlikely to be any GDE present on the RCW site*".

Further, this is found on p11 of the same Report –

> *"… the more detailed ecological investigations which have been carried out on the site for Council do not appear to have mapped any specific existing GDEs"*.

Unless a survey was carried out specifically to investigate and assess GDEs, the fact that they were not mapped in previous "ecological investigations" **does not provide solid evidence** that they are not present.

The Report appears to be **similarly dismissive of risks** to the connected shallow water table from Whitewater Centre construction impacts –

Section 5.0 (Proposed Construction of Facility) states:

"... it is likely that the RWC will be constructed in the dry. That is, the existing water table will be dewatered to ensure that excavation takes place in dry strata, which is a significantly more efficient way of carrying out such works than working in the wet, ie within the area occupied by groundwater.

This will require pumping to control groundwater inflows into the excavated area, with that pumping resulting in a lowered water table level, at least in the immediate vicinity of the excavation. While these will only be temporary changes, with groundwater levels quickly reestablishing after pumped (sic) has been completed, there are two potential adverse impacts from such lowering. In the first instance, a lowering may make water less available to any Groundwater Dependent Ecosystems (GDEs) which may be present on the site."

What the above statements overlook is the probable existence of, and indirect impact to, the **shallow groundwater table** we have identified **to the west of the construction site** as per our transect reference - further adding weight to a Reconsideration of Council's Referral.

The Council's **expectation that groundwater levels will re-establish** is also contested – particularly given that the topology changes include stormwater design directing surface flow to **retention basins** (developed as wetlands), situated towards the southern end of Tingalpa Creek and below the highest AHD current water table elevation.

It is expected this will result in **permanent receding of the water table** at higher elevations.

G. REAL IMPACTS TO SHALLOW WATER TABLE

Real impacts to the shallow water table that risk its viability and put Conservation Zone Koala habitat at unacceptable risk include:

a) **long-term dewatering** lowering the water table

(Note –
It appears the Paris Olympic Games 2024 Whitewater facility was under construction for three [3] years. See *Vaires-sur-Marne Nautical Stadium — Paris 2024 Olympic Venue*)

b) sinking of **deep concrete pits**, through the alluvium sediment and known shallow water table

c) **heavy modification of site topology**, resulting in surface water redirection and hardstand surfaces blocking localised water table infiltration and recharge.

Figure 12 below provides a useful context for understanding the effect of **receding groundwater** on **Phreatophyte response**, and the risk for established tree species that have evolved water uptake/ transpiration demand met from **both groundwater and transient soil moisture** in the unsaturated zone.

A receding groundwater table means dependence on soil moisture alone, denying the tree the ability to meet its evolved water uptake demand, with **gradual catastrophic consequences.**

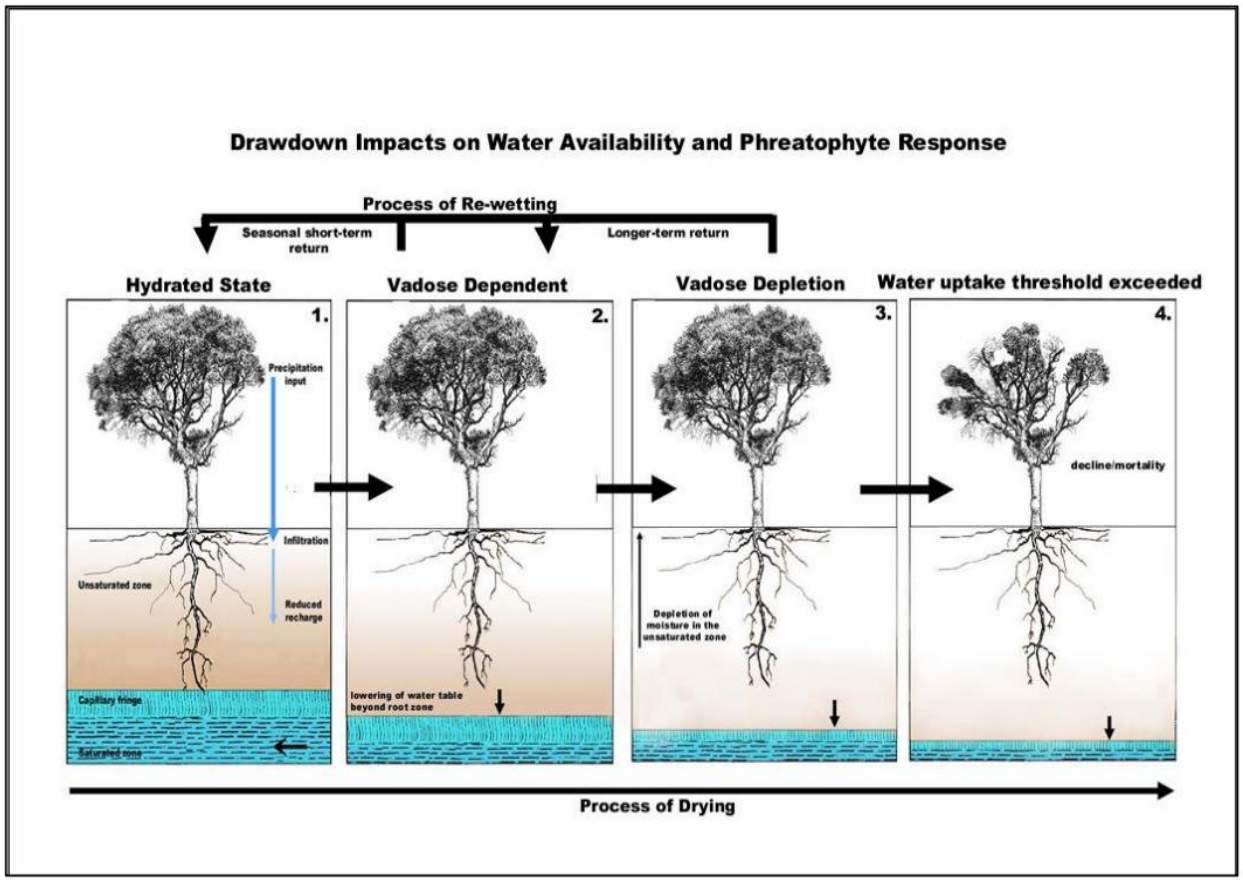


Figure 12 Impact of receding water table
(Source: R. Froend -Groundwater dependent ecosystems ecological water requirements. 2009)

H. FURTHER IMPACTS

The **construction, and ultimate presence** of, an industrial scale artificial Whitewater Course (comprising an estimated 8,000 – 12,000 m3 of concrete[1]) is incompatible with the character and goals of a site carrying such valuable MNES endangered Koala conservation obligations.

Another consideration is the **Site Based Stormwater Management Plan** (SBSMP). We note the Redland City Council referral states (p11) -

> "with the implementation of the SMSMP, it is unlikely that the operation of the RWC will have any adverse impacts on either the **quality or quantity** of the existing groundwater regime."

This appears to **contradict** a later statement (p20) -

> "that the implementation of a Site Based Stormwater Management Plan to capture, treat and discharge surface stormwater runoff is likely to **reduce the level of nitrogen contamination** present in the aquifer."

The prediction here that **groundwater quality may change** implies an acknowledgement that the activities are likely to impact the groundwater recharge (quality and quantity).

In this case, a much **more detailed assessment** of these potential impacts should be undertaken.

[1] AI estimate based on previous Olympic builds & currently available RWC design elements

SUMMARY

The information we have presented provides a sound evidence base for the presence of shallow groundwater – providing a tree moisture uptake pathway which sustains the health and survival of Koala food and habitat trees within the protected Conservation Area boundary – and that this groundwater is placed at **unnecessary risk** in the absence of verifiable data to the contrary.

The DCCEEW currently risks setting in motion the circumstances for **gradual degradation** of protected Koala habitat in the Birkdale Conservation Zone that will not be evident **for some time.**

MNES endangered species protection **must take precedence** over the short-term expediency driving this Olympic agenda.

Your reconsideration of the Conditional Approval granted on 28 May 2026 for *EPBC 2026/10471 Birkdale Community Precinct & Redland Whitewater Centre* will acknowledge and address the **unacceptable risk** this development presents to the goals of Koala recovery as embodied in the Department's own **National Koala Recovery Plan 2021**.

We believe the options before you as Minister are:

a) Reject the Redland Whitewater Centre component of the Referral
This action would be justified as, of the whole precinct, the Whitewater Centre presents the most detrimental environmental risk to the Conservation Zone and Koala habitation.

In line with the Precautionary Principle, this option leaves open the use of the existing Penrith Whitewater Stadium in New South Wales for the Canoe Slalom events of the 2032 Olympic Games, as per the International Olympic Committee's 'New Norm Policy' which recommends use of existing facilities, even if in another country.

b) Deem the Referral a Controlled Action after Reconsideration
This action would respond to the critical need for closer assessment and evaluation of the risks posed by the proposed construction of a Whitewater Centre by applying the highest level of governmental and public scrutiny possible.

Such a Controlled Action would require an Environmental Impact Statement (EIS) to be undertaken to address what appear to be current Referral knowledge gaps in the Conservation Zone groundwater context, with the requirement to:

> *"Undertake field studies to examine in detail what GDEs are present in locations and areas that could potentially be impacted by the project. Address both direct impacts (eg - by excavation) and indirect impacts (eg - by altering groundwater levels or availability). Extend the studies to areas beyond the project site that might be impacted."*

The above is just one of the processes described in the *EIS Information Guide – Groundwater Dependent Ecosystems (QLD Government, March 2026)*. Such an EIS undertaking would comply with all the prescribed baselining, monitoring, sampling and impact modelling processes currently commensurate with exemplary scientific groundwater ecosystem investigation.

Refer -
https://www.detsi.qld.gov.au/_global/policy-register/policy-register-pdf?getdoc=5301&name=eis-tm-gde-information-guide.pdf

However, should you as Minister deem the original Approval is to stand, it is imperative in light of the compelling case above, that **conditions be added to the Approval**, requiring a formal scientific investigation ground-truthing Groundwater Dependent Ecosystems (GDE) in the Conservation Zone, with **works not to commence beforehand**.

Such investigation should include, but not be limited to –

> continuously monitoring groundwater levels and sampling groundwater at multiple monitoring bores over a multi-year period of **three (3) years**.

Such an investigation will also **deliver broader area test data**, augmenting the limited drilling done in terms of scope (ie - done only within the development footprint) and depth (ie - to 6m).

It will also provide **extensive water-depth readings**, replacing those we consider rendered unusable on the basis of location ambiguity[2].

AUTHORS

The Lead Author of this document is Mr Mark Rodwell who has career experience in the field of catchment hydrology (CSIRO) and environmental compliance.

Expert content to the report and its review were provided by a groundwater scientist with a Doctorate in groundwater processes and over 20 years' experience in the field of hydrogeology.

Further expert technical contributions were provided by:

- Ms Lynn Roberts - BSc (AES)
- Mr Keith Eigeland - Grad Dip Envt Mgt, BE (Mech)
- Mr Simon Baltais - MSc (Conservation Biology), BA Inf Tech, Dip AppSc (Marine)

[2] Reference - Apparent incorrect location of boreholes, and printing errors in bore location mapping as documented in *the CARP submission Expert Report-GDE-Whitewater 08.01.24F*

ATTACHMENT 1

TREE SPECIES AT RISK

Some overview examples of **Figure 11 species at risk**, also classified as **Koala food trees** include[3]:

- ***Eucalyptus tereticornis*** *(Forest Red Gum) is a* ***facultative phreatophyte****, meaning it is highly dependent on groundwater. It relies primarily on soil moisture but will tap into shallow aquifers and capillary fringes to survive droughts or sustain growth, making it a critical component of terrestrial GDEs*

  Source:
  https://www.bioregionalassessments.gov.au/assessments/27-receptor-impact-modelling-hunter-subregion/274-groundwater-dependent-ecosystem-landscape-group

  https://www.researchgate.net/publication/353243289_Biodrainage_potential_of_Eucalyptus_tereticoornis_for_reclamation_of_shallow_water_table_areas_in_north-west_India

  https://wetlandinfo.detsi.qld.gov.au/resources/static/pdf/facts-maps/gde/mapping-rulesets/170303-mapping-rulesets-emdb.pdf

- ***Eucalyptus siderophloia*** *(Northern Grey Ironbark) can opportunistically tap into shallow aquifers (like alluvial systems) or the capillary fringe above the water table, especially near creek lines or coastal drains*

  Source:
  https://wetlandinfo.detsi.qld.gov.au/resources/static/pdf/facts-maps/gde/mapping-rulesets/170303-mapping-rulesets-emdb.pdf

  https://wetlandinfo.detsi.qld.gov.au/resources/static/pdf/facts-maps/gde/mapping-rulesets/170303-mapping-rulesets-emdb.pdf

- ***Eucalyptus moluccana*** *(Grey Box) is widely classified as a* ***facultative groundwater user****. While it typically relies on soil moisture, it readily taps into shallow groundwater (usually within 10 to 15 meters) during dry periods or extended droughts to maintain canopy health and transpiration rates*

  Source:
  https://www.water.nsw.gov.au/sites/default/files/2025-08/wrp-nsw-border-rivers-alluvium-public-consultation-submission-inland-rivers-network.pdf

- ***Eucalyptus crebra*** *(Narrow-leaved Ironbark) is typically classified as a* ***facultative phreatophyte****—a drought-tolerant species that relies primarily on soil moisture but can utilise shallow groundwater to maintain canopy health and survive prolonged droughts.*

  Source:
  https://www.bioregionalassessments.gov.au/assessments/3-4-impact-and-risk-analysis-gloucester-subregion/344-groundwater-dependent-ecosystem-gde-landscape-group

  https://www.bioregionalassessments.gov.au/assessments/27-receptor-impact-modelling-galilee-subregion/2761-description)

[3] Descriptors via Google AI: source links as provided.

- ***Many Corymbia species*** *(such as Marri, Bloodwood, and Moreton Bay Ash) are known as* ***facultative phreatophytes****, meaning they primarily rely on rainfall but can tap into subsurface aquifers or capillary fringes to survive droughts and dry seasons.*

  Source:
  https://www.epa.wa.gov.au/sites/default/files/API_documents/App%209%20-%20Ecoscape%20GDE%20Mapping%20Report%20-%208086-2463-11R_V2.pdf

  https://www.epa.wa.gov.au/sites/default/files/PER_documentation2/A9%20Assessment%20of%20Groundwater%20Dependent%20Vegetation%20distribution%20on%20the%20Robe%20River%20%28Rio%20Tinto%202018d%29.pdf)

Other relevant scientific observations

- *Altering local hydrological regimes (ie - groundwater drawdown) poses a risk to communities featuring the endangered* ***E. moluccana, E. propinqua*** *forests and the Grey Box-Ironbark Woodland. Drawdown can lead to reduced leaf biomass, loss of saplings, and long-term changes to ecosystem structure*

  Source:
  https://www.bioregionalassessments.gov.au/assessments/3-4-impact-and-risk-analysis-gloucester-subregion/344-groundwater-dependent-ecosystem-gde-landscape-group

- ***Phreatophytic species*** *often represent fast growing pioneers which are highly resistant to disease. They also provide, shelter, specialised foraging grounds, and nesting/denning areas for native fauna. Phreatophytes are also known to be indicators of potable groundwater, and to provide water purification services, as their roots are known to fix heavy metals via the provision of bacteria driven filtration.*

  Source:
  https://www.epa.wa.gov.au/sites/default/files/PER_documentation2/A5%20Assessment%20of%20Groundwater%20Dependent%20Vegetation%20%28Rio%20Tinto%202017a%29%20Part%201.pdf

- ***Eucalypt root behaviour over shallow groundwater*** **-** *When the tree has access to a shallow or perched water table, the root dynamics shift:*

  - ***Proliferation Over the Water Table:*** *Instead of driving a single taproot down endlessly, the sinker roots and fine feeder roots spread out laterally just above or within the capillary fringe of the water table.*

  Source:
  https://www.bioregionalassessments.gov.au/assessments/27-receptor-impact-modelling-galilee-subregion/2761-description
  https://link.springer.com/article/10.1007/s10457-005-5258-z

  - *Surface* ***Root Suppression:*** *Because the shallow groundwater provides a consistent, reliable water source, the tree directs less energy toward deep, penetrating taproots.* [1, 2]

    Source:
    https://www.leafyheaven.com/gumtree-root-system/
    https://www.bioregionalassessments.gov.au/assessments/27-receptor-impact-modelling-galilee-subregion/2761-description

- ***Opportunistic Growth:*** *Eucalyptus trees act as facultative phreatophytes, meaning they use shallow groundwater to meet the bulk of their daily transpiration needs, especially during the dry season.*

  Source:
  https://www.bioregionalassessments.gov.au/assessments/27-receptor-impact-modelling-galilee-subregion/2761-description
  https://www.epa.wa.gov.au/sites/default/files/PER_documentation2/A5%20Assessment%20of%20Groundwater%20Dependent%20Vegetation%20%28Rio%20Tinto%202017a%29%20Part%201.pdf

  https://link.springer.com/article/10.1007/s10457-005-5258-z