

Quality Assurance Checklist – Referral Brief

Reviewing Officer (may be assessment officer, clearing officer or peer reviewer)

Name: **s22** [redacted] Signature: **s22** [redacted] Date: 7/9/18

Note: Assessment officer to fill out sections shaded YELLOW. Reviewing officer to complete all other sections.

Project: <u>North Galilee Water Scheme, central Qld</u>			
EPBC No: <u>18/8191</u>	Assessment officer: s22 [redacted]	Due Date: <u>13/8/18.</u>	
General requirements	Brief	Decision Notice	Letters
	(tick or circle)		
Correct templates used	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Template version numbers: (assessment officer to insert version numbers)	<u>4.2</u>	<u>4.0</u>	<u>4.2</u>
EPBC reference number correct and used consistently	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Title of the action consistent	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
The ACN (or ABN if no ACN) is listed and correct	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
The designated proponent (CA)/person proposing the action (NCA or NCA-PM) is correct. Needs to be a 'person' for the purposes of the EPBC Act.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Description of the proposal is an accurate reflection of what is in the referral and encompasses all proposed activities	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Statutory deadline consistent with database record	<input checked="" type="checkbox"/>		
Signature blocks and dates are correct	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
List of attachments is correct	<input checked="" type="checkbox"/>		
All dates mentioned accord with records	<input checked="" type="checkbox"/>	<input type="checkbox"/> <u>N/A</u>	<input type="checkbox"/> <u>N/A</u>
All species references use SPRAT scientific names (first time that they are used)	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> <u>(N/A)</u>	<input checked="" type="checkbox"/> N/A
Material used to prepare briefing is listed	<input checked="" type="checkbox"/> N/A		
Public comments are included and issues raised in public comments are addressed (s75(1A))	<input checked="" type="checkbox"/> N/A		
Legal advice is included (if advice has been sought)	<input type="checkbox"/> <u>(N/A)</u>		
Line area advice is included (if advice has been sought)	<input checked="" type="checkbox"/> N/A		
All line areas consulted are clearly identified	<input checked="" type="checkbox"/> N/A		
Comments from Commonwealth and State/Territory Ministers are included and addressed	<input checked="" type="checkbox"/> N/A		
Additional information requests (stop clocks) are discussed and briefing package and additional information attached	<input checked="" type="checkbox"/> N/A		
Current ERT Report included	<input checked="" type="checkbox"/>	Date of ERT Report: <u>6 September 2018</u>	
Compliance, monitoring and auditing fact sheet is attached (for NCA and NCA-PM)	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>

Identifies the protected matters potentially impacted by the proposed action and provides clear reasons why significant impacts are likely/not likely	<input checked="" type="checkbox"/>			
Recommendations on significance are based on EPBC Act Policy Statement 1.1 Significant Impact Guidelines – Matters of National Environmental Significance (2013) and relevant referral guidelines	<input checked="" type="checkbox"/>			
Considers all adverse impacts the action has, will have or is likely to have on matters protected by each provision of Part 3 ((s.75)(2)(a))	<input checked="" type="checkbox"/>			
Does not consider any beneficial impacts the action has, will have or is likely to have on matter protected by each provision of Part 3 ((s.75)(2)(b))	<input checked="" type="checkbox"/>			
States that the decision maker must take account of the precautionary principle, and the precautionary principle is discussed as appropriate to recommendations of significance	<input checked="" type="checkbox"/>			
Bioregional plans are included and discussed (where relevant)	<input type="checkbox"/>	N/A		
Check listing status of all listed species potentially significantly impacted by the proposed action. Ensure correct listing statuses are used in the brief	<input checked="" type="checkbox"/>	N/A	Date of check against SPRAT: 6/9/18	
BCD (Species Listing Information & Policy Section) weekly report is consulted to confirm imminent listing events or delistings (if required)	<input checked="" type="checkbox"/>	N/A	Date of weekly report: 31/8/18	
BCD (Species Listing Information & Policy Section) line area advice included on recent and pending listing decisions (if required)	<input type="checkbox"/>	N/A	Date of advice received:	
NCA-PM decision	Brief	Decision Notice	Letters	
Wording of the proposed particular manner(s) clearly describe(s) the way in which the action must be undertaken to avoid significant impacts to protected matters, and accurately reflects the intent in the referral information	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Proposed particular manner(s) checked by Post Approvals Section	<input type="checkbox"/>			
CA decision	Brief	Decision Notice	Letters	
All controlling provisions have been identified	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
State/territory comments included and addressed where relevant to recommending an appropriate assessment approach (s87(3)(c))	<input checked="" type="checkbox"/>			
Has a recommendation on an approach for assessment (s.87) (do not include where bilateral agreement applies, or decision on assessment approach is deferred)	<input checked="" type="checkbox"/> N/A	<input checked="" type="checkbox"/> N/A	<input checked="" type="checkbox"/> N/A	<input checked="" type="checkbox"/> N/A
Cost recovery fee schedule included	<input checked="" type="checkbox"/> N/A			<input checked="" type="checkbox"/>

DEPARTMENT OF THE ENVIRONMENT AND ENERGY

FOI 180914
Document 2

To: James Barker, Assistant Secretary, Assessments and Governance Branch, (for decision)

Referral Decision Brief – North Galilee Water Scheme, Galilee Basin, central Queensland (EPBC 2018/8191)

Timing: The statutory timeframe for making a decision was 13 August 2018.

Recommended Decision	NCA <input type="checkbox"/> NCA(pm) <input type="checkbox"/> CA <input checked="" type="checkbox"/>												
Designated Proponent	Adani Infrastructure Pty Ltd ACN: 606 764 827												
Controlling Provisions triggered or matters protected by particular manner	<table border="0"> <tr> <td>World Heritage (s12 & s15A) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> No if PM <input type="checkbox"/></td> <td>National Heritage (s15B & s15C) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> No if PM <input type="checkbox"/></td> </tr> <tr> <td>Ramsar wetland (s16 & s17B) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> No if PM <input type="checkbox"/></td> <td>Threatened Species & Communities (s18 & s18A) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> No if PM <input type="checkbox"/></td> </tr> <tr> <td>Migratory Species (s20 & s20A) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> No if PM <input type="checkbox"/></td> <td>C'wealth marine (s23 & s24A) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> No if PM <input type="checkbox"/></td> </tr> <tr> <td>Nuclear actions (s21 & s22A) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> No if PM <input type="checkbox"/></td> <td>C'wealth land (s26 & s27A) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> No if PM <input type="checkbox"/></td> </tr> <tr> <td>C'wealth actions (s28) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> No if PM <input type="checkbox"/></td> <td>GBRMP (s24B & s24C) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> No if PM <input type="checkbox"/></td> </tr> <tr> <td>A water resource – large coal mines and CSG (s24D & s24E) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> No if PM <input type="checkbox"/></td> <td>C'wealth heritage o/s (s27B & s27C) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> No if PM <input type="checkbox"/></td> </tr> </table>	World Heritage (s12 & s15A) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> No if PM <input type="checkbox"/>	National Heritage (s15B & s15C) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> No if PM <input type="checkbox"/>	Ramsar wetland (s16 & s17B) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> No if PM <input type="checkbox"/>	Threatened Species & Communities (s18 & s18A) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> No if PM <input type="checkbox"/>	Migratory Species (s20 & s20A) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> No if PM <input type="checkbox"/>	C'wealth marine (s23 & s24A) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> No if PM <input type="checkbox"/>	Nuclear actions (s21 & s22A) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> No if PM <input type="checkbox"/>	C'wealth land (s26 & s27A) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> No if PM <input type="checkbox"/>	C'wealth actions (s28) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> No if PM <input type="checkbox"/>	GBRMP (s24B & s24C) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> No if PM <input type="checkbox"/>	A water resource – large coal mines and CSG (s24D & s24E) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> No if PM <input type="checkbox"/>	C'wealth heritage o/s (s27B & s27C) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> No if PM <input type="checkbox"/>
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Public Comments	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Number: 34 individual and in excess of 3,000 campaign submissions (<u>Attachment D</u>).												
Ministerial Comments	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Who: Queensland Department of Environment and Science, Department of Agriculture and Water Resources, Geoscience Australia and the then Department of Industry, Innovation and Science (<u>Attachment E</u>).												
Assessment Approach Decision	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> What: Preliminary Documentation. Bilateral Applies <input type="checkbox"/>												
Recommendation/s:													
1. Consider the information in this brief, the referral (<u>Attachment A</u>) and other attachments.													
Considered / Please discuss													
2. Agree with the recommended decision.													
Agreed / Not agreed													

3. Agree to the designated proponent.

Agreed / Not agreed

4. Agree the action be assessed on preliminary documentation.

Agreed / Not agreed

5. If you agree to 2 and 4, indicate that you accept the reasoning in the Departmental briefing package as the basis for your decision.

Accepted / Please discuss

6. Agree to the fee schedule and justification table (Attachment F) and the fee schedule at Attachment G be sent to the proponent.

Agreed / Not agreed

7. Sign the notice at Attachment H which will be published on the Department's website if you make the recommended decision.

Signed / Not signed

8. Sign the letters at Attachment I advising relevant parties of your decision.

Signed / Not signed

James Barker
Assistant Secretary
Assessments and Governance Branch

Date: 17/9/2018

Comments:

KEY ISSUES:

- The proposed action has the potential to impact on listed threatened species and communities and their habitat, including important habitat for the vulnerable Ornamental Snake (*Denisonia maculata*), as a result of vegetation clearance and direct mortality. Further information is needed to quantify impacts to riparian habitat due to changes in downstream flow regimes in the Suttor River.
- Of the approximate 130 kilometre pipeline, seven sections totalling approximately eight kilometres of the Stage B pipeline will be constructed in the Carmichael Coal Mine and Rail Project's (EPBC 2010/5736) rail corridor footprint. It is not clear in the referral as to the total length of the pipeline which will be constructed in the rail corridor footprint.
- The proponent considers the proposed action will not have a significant impact on the Ornamental Snake because no individuals were identified on the project site, there is an abundance of suitable habitat in the broader region and measures will be implemented during construction to further reduce impacts.
- The proponent considers the water trigger does not apply to the proposed action because the action does not include the extraction of coal.

BACKGROUND:

Description of the referral

A valid referral was received on 7 June 2018. The action was referred by CDM Smith Australia Pty Ltd, on behalf of Adani Infrastructure Pty Ltd (the proponent), which has stated its belief that the proposal is not a controlled action for the purposes of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

On 2 July 2018, the Department requested additional information under section 76(1)(b) of the EPBC Act to enable you to determine whether the proposed action is likely to have a significant impact on any matters of national environmental significance. The Department requested the proponent provide details on how the proposed action:

- relates to the water supply infrastructure approved for the Carmichael Coal Mine and Rail Project (CCMP) (EPBC 2010/5736); and
- is likely to impact on listed threatened species and ecological communities downstream of the proposed water harvest location.

Also on this date, under section 75(6) of the EPBC Act, the statutory timeframe for making a decision under section 75 of the EPBC Act was suspended (i.e. the referral decision clock was stopped).

On 7 August 2018, the proponent provided a response to the request for additional information ([Attachment A1](#)), noting the information is strictly confidential and commercial in confidence. The Department considered the proponent's response adequately addressed the request for additional information. As such, the referral decision clock re-started and the statutory timeframe for making a decision under section 75 of the EPBC Act was 13 August 2018.

On 13 August 2018, the Department wrote to the proponent noting Adani's view on the confidential and commercial in confidence nature of the additional information and that some of the additional information is publicly available as part of the referral documentation ([Attachment A2](#)). The Department reiterated that in the event of a request under the *Freedom of Information Act 1982* (Cth) (FOI Act) seeking these documents is received, the Department will determine whether any documents are exempt or conditionally exempt consistent with its obligations under the FOI Act.

On 27 August 2018, the proponent responded stating that if a request under the FOI Act is received, they are willing and able to assist in providing further clarity to the Department on how the additional information is considered exempt from release ([Attachment A3](#)).

Description of the proposal (including location)

The proposed action is to construct and operate the North Galilee Water Scheme (NGWS) to supply water to the CCMP and potentially supply water to future resource-extraction projects in the northern Galilee Basin. The NGWS is located approximately 160 kilometres (km) north-west of Clermont in central Queensland. The referral states the proposed action includes two stages although notes the stages will not necessarily be developed in sequence. The two stages are:

Stage A

Stage A of the proposed action includes the taking of up to 12.5 gigalitres (GL) of water from the Suttor River per year, below the confluence with the Belyando River, via flood harvesting infrastructure into off-stream storage as required by the proponent's Queensland water licence (see state government approvals discussion below). The water will then be piped to the CCMP and other users. Stage A includes the following components:

- an intake channel from the Suttor River;
- an intake pump station and 3.8 km buried pipeline (within a 30-40 metre [m] corridor);
- upgrade of the existing 2.2 gigalitre (GL) Belyando Junction Dam to a nominal 10 GL capacity;
- a 65 km buried pipeline (Belyando Pipeline) crossing four minor watercourses and one major watercourse (within a 30 m corridor);
- the Gregory Developmental Road break tank and pump station; and
- laydown areas immediately adjacent to the pipeline (within a 75 m corridor).

Stage B

Stage B of the proposed action is a buried pipeline within a 30 m construction corridor extending from Stage A to the CCMP rail loop area. This stage also includes a series of smaller offtake pipelines (within a 20 m corridor) that will provide water to CCMP associated infrastructure. Stage B includes the following components:

- Stage B1: a 32.5 km buried pipeline crossing two minor watercourses and three major watercourses (within a 30 m corridor);
- Stage B2: a 28.5 km buried pipeline crossing three minor watercourses and one major watercourse; and
- laydown areas immediately adjacent to the pipeline corridor (within a 75 m corridor).

The Department notes the scope of the Construction Environmental Management Plan (CEMP) (Attachment E to [Attachment A](#)) differs from that described in the referral (Section 1, [Attachment A](#)), in particular the Stage A pipeline (49 km), Stage B1 pipeline (36.4 km) and Stage B2 pipeline (25.2 km). If you agree with the Department's recommendation, the scope of the proposed action will be clarified during the assessment process.

The referral states the project site is approximately 1,234 ha across 11 lots comprising freehold, leasehold and State land (Section 1, [Attachment A](#)). The referral further states the disturbance footprint is up to 549 ha noting disturbance associated with the buried pipelines will occur in a 30 m corridor.

There is some uncertainty around the total disturbance footprint, including that laydown areas immediately adjacent to the pipeline corridor are proposed to be within a 75 m corridor. It is not clear from the referral as to whether the proposed laydown areas have been included in the estimated disturbance footprint. If you agree with the Department's recommendation, the total disturbance footprint for the proposed action will be clarified during the assessment process.

Construction of the proposed action is anticipated to commence in January 2019 and conclude in March 2020. The referral does not specify an estimated timeframe for operation, maintenance and decommissioning of the proposed action. The CEMP notes operation for both Stage A and Stage B is anticipated to commence in late 2019.

Related projects

The proponent states the proposed action will provide a secure and reliable water supply to the CCMP (EPBC 2010/5736) under a commercial agreement with the mine operators ([Attachment A1](#)). The referral states the water extracted will be the same quantity, for the same purpose and from the same catchment as described and assessed in the CCMP assessment. The key differences of the NGWS proposal are:

- a new water extraction point on the Suttor and Belyando River anabranch, approximately 70 km downstream of the extraction point approved in the CCMP;
- the locations of the water harvesting, storage and supply infrastructure; and
- an increased pass flow trigger before water can be extracted from the Suttor River (an increase from 200 megalitres [ML]/day to 2,592 ML/day).

The water extraction location has been refined due to continued engineering optimisation and technical modelling ([Attachment A1](#)). The proponent notes the new location has been approved by the Queensland government and considers the new location provides greater water security and certainty to downstream users and for environmental flows.

This consideration is based on the outcomes of the modelling assessment in the proponent's application for its Queensland water licence (see state government approvals discussion below) ([Attachment A1](#)). The modelling assessment concluded the ongoing extraction of water over a 2,592 ML/day trigger flow from the Suttor River system at the new water extraction point would not adversely impact on existing water allocations and environmental flow objectives as measured against the *Burdekin Basin Resource Operations Plan 2009* and *Water Resource (Burdekin Basin) Plan 2007* targets and objectives. Further, the modelling assessment concluded the water extraction will have a negligible impact on environmental receptors, including the ecological processes of Scartwater and Blackwater lagoons ([Attachment A1](#)), which are approximately 35 km downstream of the project site.

The referral also notes the proposed Stage B pipeline corridor will enter the rail corridor component of the CCMP at seven locations to avoid potential additional impacts on matters of national environmental significance ([Attachment A](#)). It is not clear in the referral as to the total length of the pipeline which will be constructed within the rail corridor footprint.

Description of the environment

The project site is located largely within the Belyando Downs subregion near the north-west boundary of the Brigalow Belt Bioregion in central Queensland. A small section of the Stage B pipeline alignment is located within the Alice Tableland subregion in the Desert Uplands Bioregion. The main land zones in these regions are Queensland land zone 3 and land zone 4, the most common land zones where the endangered Brigalow (*Acacia harpophylla* dominant and co-dominant) threatened ecological community (Brigalow TEC) and Ornamental Snake and its habitat have been recorded. Cracking clay soils were identified in gilgai formations on the project site. The project site also contains areas of sandy soils and sandy creek beds where the vulnerable Squatter Pigeon (Southern) (*Geophaps scripta scripta*) was observed.

The project site occurs in an agricultural area primarily used for cattle grazing and much of the landscape is therefore cleared of woody vegetation. The remaining vegetation is restricted to elevated rocky areas, watercourses and several protected areas (including national parks). Field surveys identified regrowth Gidgee (*Acacia cambagei*) on gilgai formations which the proponent considers is in good condition and provides suitable habitat for the Ornamental Snake ([Attachment A](#)). Queensland Regional Ecosystems (REs) were recorded during field surveys which are considered to be Brigalow TEC or Brigalow (*Acacia harpophylla*) regrowth.

The project site is primarily located within the Belyando Basin and partly within the Suttor Basin which are characterised by wide floodplains of braided watercourses. Both basins are located within the Burdekin River Basin. The referral notes the flow regime in the Belyando Basin is highly seasonal with flows peaking from December to April (the wet season) and with low to negligible flows from May to October (the dry season). The water quality of the Belyando Basin is known to have moderately elevated suspended sediments during the wet season.

The referral notes the presence of pools in the Suttor River and the Belyando River which likely retain water during extended dry periods. An ephemeral wetland of State significance was identified in the Belyando River anabranch. It was dry at the time of field surveys but was dominated by native grass species and juvenile River Red Gum (*Eucalyptus camaldulensis*). The referral notes the wetland is likely to provide temporary habitat for wetland birds, including listed migratory species ([Attachment A](#)).

The referral states the riparian vegetation associated with watercourses and the Belyando and Suttor rivers is likely to provide suitable habitat for the Ornamental Snake, suitable forage trees for the vulnerable Koala (*Phascolarctos cinereus*) and Brigalow TEC. Further, the riparian vegetation along the Belyando River and Mistake Creek is potential habitat for the endangered Southern Black-throated Finch (*Poephila cincta cincta*).

State Government approvals

On 23 July 2015, the Charters Towers Regional Council issued a Development Permit under the *Sustainable Planning Act 2009* (Qld) to the proponent for the upgrade of off-stream flood harvesting storage (Belyando Junction Dam) and associated infrastructure ([Attachment A](#)).

On 6 June 2018, the Queensland Department of Natural Resources, Mines and Energy issued a water licence under the *Water Act 2000* (Qld) to the proponent for the taking of water from the Suttor River and the transfer of water to off-stream storage via the Belyando River anabranch ([Attachment A1](#)). The water licence conditions include:

- a maximum volume extraction limit of 12.5 GL from the Suttor River during a water year (i.e. a 12 month period);
- a mean annual volume extraction limit assigned from the strategic reserve as provided in the *Water Plan (Burdekin Basin) 2007* (Qld) of 10.8 GL from the Suttor River;
- permission to take water from the Suttor River only when flow exceeds 2,592 ML/day; and
- a daily volume extraction limit of 830 ML.

RECOMMENDED DECISION:

Under section 75 of the EPBC Act, you must decide whether the proposed action is a controlled action and which provisions of Part 3 (if any) are controlling provisions for the action. In making your decision, you must consider all adverse impacts the action has, will have, or is likely to have on the matter protected by each provision of Part 3. You must not consider any beneficial impacts the action has, will have or is likely to have on the matter protected by each provision of Part 3.

The Department recommends you decide the proposal is a controlled action because the action is likely to have significant impacts on listed threatened species and communities. These impacts are discussed respectively below. For the same reasons, the Department recommends you decide the controlling provisions for the proposed action are section 18 and section 18A.

Listed threatened species and communities

The Department's Environment Reporting Tool (ERT) indicates a total of 17 listed threatened species and one threatened ecological community may occur within 10 km of the proposed action ([Attachment B](#)). Based on the location of the proposed action, likely habitat present in the area of the proposed action, and nature of the potential impacts, the Department considers impacts potentially arise in relation to the following matters.

Ornamental Snake (*Denisonia maculata*) – Vulnerable

Species information

The Ornamental Snake occurs within the Brigalow Belt Bioregion and prefers habitat within or close to habitat favoured by its prey (i.e. frogs). The species is known to prefer woodlands and open forests (including Brigalow TEC) associated with moist areas (particularly gilgai mounds and depressions on land zone 4), deep-cracking alluvial soils with high clay contents and microhabitat features (i.e. logs, woody debris and leaf litter). The soil cracks on gilgai mounds are used by the species as refuge habitat during dry periods.

The Department considers important habitat for the species as a surrogate for important populations due to the low detectability of the species and lack of population information. The Department's *Draft Referral guidelines for the nationally listed Brigalow Belt reptiles* (2011) identifies known important habitat for the Ornamental Snake as gilgai expressions and mounds, and the connective habitat between gilgai and other suitable habitats.

Proposed action area

No targeted surveys in accordance with Departmental guidelines were undertaken within the project site. However, the referral notes the Ornamental Snake was recorded during field surveys for nearby projects in the vicinity of the project site (Attachment B to Attachment A). One individual was recorded during 2013 surveys approximately six kilometres south-west of the junction of Stage A and Stage B1. Eight individuals were recorded during 2014 surveys approximately four kilometres west of Stage B2. The referral notes the individuals were recorded in REs 11.4.6, 11.4.8, 11.4.9 and 11.3.3, all of which occur on the disturbance footprint.

The referral notes Stage A has large tracts of cracking clays (on land zone 4) immediately south of the Belyando River and aerial imagery suggests it also contains gilgai formations, including gilgai in good ecological condition. Further, Stage B contains areas of cracking clays and gilgai in the vicinity of the Belyando River and Mistake Creek. The referral states the riparian vegetation associated with the watercourses and the Belyando and Suttor rivers is likely to provide suitable habitat for the Ornamental Snake.

The referral does not specify the total amount of suitable habitat for the species within the project site. However, the referral considers it is likely there is available habitat for the species adjacent to the project site, including high quality gilgai habitat in the Nairana National Park and riparian vegetation associated with the Belyando River and Mistake Creek.

Potential impacts

The proposed action will result in the clearance of approximately 138 ha of important habitat for the Ornamental Snake, including approximately 92 ha of gilgai habitat within the 30 m corridor for the Stage A and Stage B pipelines. However, the proponent considers the residual impact on the species will be 45.8 ha because the majority of the 30 m corridor will be rehabilitated and only a 10 m cleared access track will be left for maintenance purposes.

The proponent states the proposed action has the potential to impact on the Ornamental Snake through increased individual mortality during vegetation clearance, trenching activities and vehicle strike, and temporary habitat fragmentation.

In addition, the Department considers there is the potential for indirect impacts on gilgai formations, and other important habitat, within and downstream of the project site due to changes in hydrological regimes. The Office of Water Science (OWS) (Attachment C2) notes a

reduction in the regularity and duration of flooding would have the potential to reduce how often Ornamental Snake habitat, and habitat for its primary prey (frogs), is inundated.

Avoidance and mitigation measures

The proponent has proposed a number of general avoidance, mitigation and management measures in Section 4 at Attachment A and in the CEMP (Attachment E to Attachment A). The measures include avoidance of remnant vegetation, pre-clearance surveys by fauna spotter/catchers, minimising the time the trench is open, daily trench inspections, erosion and sediment control measures, weed and pest management, and vehicle speed limits.

Further, the proponent has committed to the rehabilitation of the pipeline corridor (except a 10 m access track for maintenance purposes) using local native grass species as groundcover. The referral contains no detail on other aspects of rehabilitation including:

- how the rehabilitated landform, including vegetation structure, will be consistent with the surrounding landform;
- how surface drainage lines will be reinstated (particularly for gilgai formations); and
- whether the local topsoil will be re-instated (particularly to promote cracking of soils).

Conclusion

Based on the information available, the Department considers there is a real chance or possibility the proposed action will adversely affect up to 138 ha of habitat critical to the survival of the Ornamental Snake, including up to 92 ha of important gilgai habitat. The Department therefore considers the proposed action is likely to have a significant impact on the vulnerable Ornamental Snake.

Other listed species

On the basis of all the information available to the Department (including the ERT, the referral and the SPRAT database), and without detailed habitat assessments and further assessment of the potential impacts within the project site, the Department considers there is a real chance or possibility the proposed action will significantly impact on the following:

- Southern Black-throated Finch (*Poephila cincta cincta*) – Endangered

The species is known to occur in the region based on surveys undertaken for nearby projects (2012, 2013 and 2014), with three records within six kilometres of the project site (Attachment A). The referral states an 'important area' for the species is 'within five kilometres of a post-1995 sighting' and there is a known substantial population in the CCMP (EPBC 2010/5736) mining lease. The referral notes the main potential impact of the proposed action is habitat loss, degradation and fragmentation, including through the clearing of grassy woodland near waterholes.

No habitat assessment or quantification of potential habitat on the project site, including a discussion and the quantity of the potential habitat to be impacted, has been provided in the referral. The Department considers suitable habitat may occur on the project site in the form of water sources, riparian vegetation (including *Eucalyptus* species) and surrounding grasslands.

- Squatter Pigeon (Southern) (*Geophaps scripta scripta*) – Vulnerable

The species is known to occur within the project site and surrounding region based on surveys undertaken for nearby projects (2012 to 2016), with four records on the project site (Attachment A). However, the proponent considers the project site is not in an area of an important population for the Squatter Pigeon (Southern) as it is north of the Carnarvon Ranges

where the species remains common and is considered to be distributed as a single, continuous sub-population (as defined in SPRAT).

No habitat assessment or quantification of potential habitat on the project site, including a discussion and the quantity of the potential habitat to be impacted, has been provided in the referral. The Department notes the proposed action will result in the clearance of up to 549 ha of remnant (i.e. *Eucalyptus* and *Acacia* species with native grasses) and non-remnant vegetation on sandy soils and in close proximity to water sources. The Department considers this may provide potential breeding, foraging and dispersal habitat for the species.

- Koala (*Phascolarctos cinereus*) (combined populations of Qld, NSW and the ACT) – Vulnerable

The species is known to occur in the region based on surveys undertaken for nearby projects (2012 and 2013), with a known record and evidence (i.e. scratches) within 24 kilometres of the project site. No targeted surveys were undertaken for the species however, the proponent considers the Koala is likely to occur in the project site in low densities. The referral notes suitable habitat occurs on the project site, particularly associated with riparian vegetation, in the form of known food trees consisting of *Eucalyptus brownii*, *E. populnea* and *E. coolabah*.

The referral states the project will bisect large tracts of vegetation along the Belyando River which provides a regional fauna corridor. It is not clear in the referral where this vegetation will be impacted. The Department considers riparian vegetation, and maintaining its quality, extent and connectivity, is important in the recovery of the inland population of the Koala because it provides a habitat refuge during drought and extreme heat.

Other listed species and communities – downstream impacts

To inform its Queensland water licence application (Attachment A1), the proponent has undertaken technical modelling to determine potential downstream impacts of the annual extraction of up to 12.5 GL from the Suttor River on downstream water users and environmental receptors. The downstream modelling assessment concluded the ongoing extraction of water over a 2,592 ML/day trigger flow from the Suttor River system at the new water extraction point would not adversely impact on existing water allocations and environmental flow objectives as measured against the *Burdekin Basin Resource Operations Plan 2009* and *Water Resource (Burdekin Basin) Plan 2007* targets and objectives. Further, the modelling assessment concluded the water extraction will have a negligible impact on environmental receptors, including the ecological processes of Scartwater and Blackwater lagoons (Attachment A1), which are approximately 35 km downstream of the project site.

The Department notes the proponent has not undertaken field surveys to identify the presence of EPBC Act listed threatened species and ecological communities, and their habitat, downstream of the proposed extraction point. Advice from the OWS (Attachment C2) also notes the lack of field surveys undertaken downstream of the proposed extraction point.

The OWS advice states that changes to the flow regime of the Suttor River have the potential to impact on riparian vegetation that may also provide habitat for EPBC Act listed threatened species, including Brigalow TEC (Attachment C2). These potential impacts would be most likely to occur when flows are close to the pass flow trigger of 2,592 M/day, reducing the volume and extent of downstream water availability.

As such, on the basis of all the information available (including the ERT, the referral and the SPRAT database), and without detailed habitat assessments and further assessment of potential downstream impacts, the Department considers there is a real chance or possibility the water extraction associated with the proposed action will significantly impact on the following:

- Brigalow (*Acacia harpophylla* dominant and co-dominant) threatened ecological community (Brigalow TEC) – Endangered
- Southern Black-throated Finch (*Poephila cincta cincta*) – Endangered
- Squatter Pigeon (Southern) (*Geophaps scripta scripta*) – Vulnerable
- Koala (*Phascolarctos cinereus*) (combined populations of Qld, NSW and the ACT) – Vulnerable
- Waxy Cabbage Palm (*Livistona lanuginosa*) – Vulnerable
- Bluegrass (*Dicanthium setosum*) – Vulnerable

PROTECTED MATTERS THAT ARE NOT CONTROLLING PROVISIONS:

A water resource, in relation to a large coal mining development or coal seam gas development

A number of public submissions received on the referral ([Attachment E](#)) consider the proposed action should be assessed under the water trigger because it is designed to facilitate extraction of coal from the CCMP and, as such, should be treated as a 'large coal mining development' as defined under section 24D of the EPBC Act.

Sections 24D and 24E of the EPBC Act apply to an action that 'involves' large coal mining development. The Department considers that 'involves', in this context, means that some part of the action must comprise a 'large coal mining development' as defined in the EPBC Act.

The EPBC Act defines 'large coal mining development' as:

any coal mining activity that has, or is likely to have, a significant impact on water resources (including any impacts of associated salt production and/or salinity):

- (a) *in its own right; or*
- (b) *when considered with other developments, whether past, present or reasonably foreseeable developments.*

The Department's *Significant impact guidelines 1.3: Coal seam gas and large coal mining developments – impacts on water resources* (2013) (the guidelines) state the definition of a 'large coal mining development' relates to impacts on a water resource of activities that form part of the process of extracting coal. Further, the guidelines state the development of associated infrastructure that is not part of the extraction process is not included in the definition of 'large coal mining development'. This associated infrastructure may include transport infrastructure, such as pipelines, and road or rail infrastructure.

The Department considers (as reflected in the guidelines) that the phrase 'coal mining activity' means an activity through which coal is mined, and therefore, that a large coal mining development is one that necessarily involves the extraction of coal.

The proposed action consists of the construction and operation of infrastructure that is associated with the extraction of coal, but does not itself extend to coal mining. Consequently, the proposed action is not a large coal mining development, nor does it 'involve' large coal mining development.

For these reasons, the Department considers sections 24D and 24E are not controlling provisions for the proposed action. Given this, the possible impacts of the water extraction on water resources in the local area are not relevant in this instance.

OTHER PROTECTED MATTERS THAT ARE NOT CONTROLLING PROVISIONS:

<p>Listed migratory species</p>	<p>The ERT indicates a total of nine listed migratory species may occur within 10 km of the proposed action (Attachment B).</p> <p>The referral notes no listed migratory species were identified in the project site, however the Fork-tailed Swift (<i>Apus pacificus</i>) may fly over the site. There are semi-permanent pools in the Suttor and Belyando rivers and an ephemeral wetland near the project site. However, the referral notes there is no important habitat in the project site or the immediate surrounds, including important wetlands or springs (Doongmabulla Springs complex is 19 km west of Stage B).</p> <p>Advice from the Migratory Species Section (Attachment C3) notes that although listed migratory species may use habitat in the area, the proposed action is unlikely to have an adverse impact on an ecologically significant proportion of a population of any listed migratory species.</p> <p>Based on the small amount of vegetation to be removed, the use of a broad variety of habitats by listed migratory species (as specified in SPRAT), and the amount of habitat available outside of the project site, the Department considers the proposed action is unlikely to modify, destroy or isolate an area of important habitat for a listed migratory species. Therefore, the Department considers the proposed action is unlikely to have a significant impact on a listed migratory species.</p> <p>For these reasons, the Department considers sections 20 and 20A are not controlling provisions for the proposed action.</p>
<p>Ramsar Wetlands</p>	<p>The ERT did not identify any Ramsar listed wetland of international importance within, adjacent to or downstream of the project site.</p> <p>Advice from the Department's Wetlands Section (Attachment C1) notes the Shoalwater and Corio Bay Ramsar site is 370 km east from the project site whilst the Bowling Green Bay Ramsar site is 244 km to the north. The Wetland Section further notes the proposed action is not located in the catchment of either Ramsar site.</p> <p>Based on the location of the proposed action within a different catchment to both Ramsar sites, the Department considers the proposed action is unlikely to have a significant impact on the ecological character of a Ramsar wetland.</p> <p>For these reasons, the Department considers sections 16 and 17B are not controlling provisions for the proposed action.</p>
<p>World Heritage properties</p>	<p>The ERT did not identify any World Heritage properties located within or adjacent to the project site.</p> <p>The Department notes the Great Barrier Reef World Heritage Area is located approximately 300 km downstream of the project site where the Burdekin River discharges into the Great Barrier Reef.</p> <p>Based on the information contained in the referral, the nature and scale of the proposed action and its potential impacts, and the downstream distance to the coast, the Department considers the proposed action is unlikely to have a significant impact on the world heritage values of a World Heritage Property.</p>

	<p>For these reasons, the Department considers sections 12 and 15A are not controlling provisions for the proposed action.</p>
<p>National Heritage places</p>	<p>The ERT did not identify any National Heritage places located within or adjacent to the project site.</p> <p>The Department notes the Great Barrier Reef National Heritage Place is located approximately 300 km downstream of the project site where the Burdekin River discharges into the Great Barrier Reef.</p> <p>Based on the World Heritage properties discussion, the Department considers the proposed action is unlikely to have a significant impact on the national heritage values of a National Heritage Place.</p> <p>For these reasons, the Department considers sections 15B and 15C are not controlling provisions for the proposed action.</p>
<p>Commonwealth marine environment</p>	<p>The proposed action does not occur in a Commonwealth marine area.</p> <p>Further, based on the information in the referral, the nature and scale of the proposed action and its potential impacts, and the distance to a Commonwealth marine area, the Department considers the proposed action is unlikely to have a significant impact on the environment in a Commonwealth marine area.</p> <p>For these reasons, the Department considers sections 23 and 24A are not controlling provisions for the proposed action.</p>
<p>Commonwealth action</p>	<p>The proposed action is not being taken by the Commonwealth or a Commonwealth agency, therefore section 28 is not a controlling provision for the proposed action.</p>
<p>Commonwealth land</p>	<p>The proposed action is not being undertaken on Commonwealth land.</p> <p>Further, based on the information in the referral, the nature and scale of the proposed action and its potential impacts, and the distance to Commonwealth land, the Department considers the proposed action is unlikely to have a significant impact on Commonwealth land.</p> <p>For these reasons, the Department considers sections 26 and 27A are not controlling provisions for the proposed action.</p>
<p>Nuclear action</p>	<p>The proposed action does not meet the definition of a nuclear action as defined in the EPBC Act. For this reason, the Department considers sections 21 and 22A are not controlling provisions for the proposed action.</p>
<p>Great Barrier Reef Marine Park (GBRMP)</p>	<p>The proposed action is not being taken in the GBRMP.</p> <p>Further, the proposed action is largely located within the Burdekin River catchment, approximately 300 km upstream of where the Burdekin River discharges into the Great Barrier Reef.</p> <p>Based on the World Heritage properties discussion, the Department considers the proposed action is unlikely to have a significant impact on the GBRMP.</p> <p>For these reasons, the Department considers sections 24B and 24C are not controlling provisions for the proposed action.</p>

Commonwealth Heritage places overseas	The proposed action is not being taken outside the Australian jurisdiction (as defined in the EPBC Act). For this reason, the Department considers sections 27B and 27C are not controlling provisions for the proposed action.
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SUBMISSIONS:

Public submissions

The referral was published on the Department’s website on 8 June 2018 and public comments were invited until 25 June 2018. A total of 34 individual public submissions and in excess of 3,000 campaign submissions were received on the referral (Attachment D), including 25 submissions from non-government organisations. The submissions raised the following key issues:

- The proponent’s proposed a flood harvesting scheme on the Belyando River was referenced in the supplementary Environmental Impact Statement (EIS) of the CCMP (EPBC 2010/5736) but this was not considered or assessed in that EIS.
- The proponent notes the NGWS project could be used to supply water to other proposed coal mines in the Galilee Basin, however its Queensland water licence authorises the extraction of water only for ‘water supply for the Carmichael Coal Mine and Rail Project’.
- The proposed action is likely to have a significant impact on water resources in the Belyando-Suttor sub-catchment, the Black-throated Finch, Ornamental Snake and the Koala, and the Great Barrier Reef World Heritage Area (GBRWHA).
- A full assessment of impacts on water resources is unable to be undertaken because the referral does not include the water permits for additional water take for mine construction, including authorisation to take 250 ML of water from the Belyando River and 8,050 ML of water from Mistake Creek.
- The proposed action must be assessed under the water trigger because it is designed solely to facilitate extraction of coal from the CCMP.
- The Significant Impact Guidelines 1.3 (2013) note that associated infrastructure does not constitute a coal mining activity, however the guidelines are not a relevant consideration of the Minister in deciding whether the action is a controlled action under section 75(1) of the EPBC Act.
- The extraction of up to 12.5 GL of water from the Suttor River is likely to constitute a significant impact on water resources because it is more than 50% of the total strategic reserve for the sub-catchment under the *Water Plan (Burdekin Basin) 2007* (Qld).
- Projects affecting the same species with a smaller footprint have been declared a controlled action in the past, in particular the Olive Downs Water Pipeline Project (EPBC 2017/7868).
- The survey effort for listed threatened species and communities is inadequate both in duration and seasonality, and there is minimal information on the survey techniques and intensity of the surveys conducted. No field surveys were undertaken downstream of the extraction point to identify listed threated species and ecological communities, and their habitat.
- The referral does not consider downstream impacts on listed threatened species and ecological communities, and listed migratory species, and their habitat, which are reliant on

subsurface water and surface expression of groundwater (i.e. riparian vegetation, waterholes, wetlands, lagoons and floodplain ecosystems).

- The proposed action is likely to have a significant impact on the GBRWHA from climate change and because flood harvesting will occur in the Burdekin catchment and no extensive hydrological assessment and modelling has been conducted. Further, the cumulative impacts on the GBRWHA with the NGWS project were not considered in the assessment of the CCMP.

In regards to the public submissions concerning the application of the water trigger, the Department considers this matter has been discussed in the water resources discussion above. The Department will consider other relevant matters raised in the public submissions during the assessment process.

Comments from Commonwealth Ministers

By letter dated 8 June 2018, the following ministers were invited to comment on the referral:

- The Hon Michael McCormack MP, Minister for Infrastructure and Transport
- The Hon David Littleproud MP, Minister for Agriculture and Water Resources
- Senator the Hon Michaelia Cash, then Minister for Jobs and Innovation
- Senator the Hon Nigel Scullion, Minister for Indigenous Affairs
- Senator the Hon Matt Canavan, Minister for Resources and Northern Australia

On 22 June 2018, the Department of Industry, Innovation and Science (DIIS) responded on behalf of the Minister for Jobs and Innovation ([Attachment E](#)) noting DIIS is broadly supportive of the proposed action considering its critical development for the Carmichael Coal Mine Project. DIIS further notes this support is subject to the proposed action meeting relevant State and Commonwealth approvals (including environmental approvals).

On 22 June 2018, Geoscience Australia (GA) responded ([Attachment E](#)) noting that should the Department assess whether the proposed action falls within the definition of the water trigger, there is potential for the proposed action to impact on groundwater resources. GA considered:

- The pipeline is unlikely to have a significant impact on water resources due to the shallow depth of excavation and relatively small disturbance footprint.
- Watercourse crossings should warrant assessment on a case-by-case basis to ensure surface and groundwater resources are not significantly impacted.
- The enlargement of Belyando Junction Dam has the potential to have an impact on localised groundwater resources.
- Impacts to the EPBC listed 'The community of native species dependent on natural discharge of groundwater from the Great Artesian Basin' threatened ecological community have been considered and no springs are in the project area.
- Groundwater-dependent ecosystem mapping shows ecosystems reliant on groundwater are present through the project area, which do not seem to have been considered in the referral.

On 28 June 2018, the Department of Agriculture and Water Resources (DAWR) responded on behalf of the Minister for Agriculture and Water Resources ([Attachment E](#)) noting:

- The proposed action could have a significant impact on a water resource, in relation to coal seam gas development and large coal mining development.
- Water assessments, including the establishment of robust baseline data on surface and groundwater in the project area, should be carried out in accordance with management plans and made publicly available.

The Department notes the views of GA and DAWR regarding the possible application of the water trigger and considers this matter has been addressed in the water resources discussion above.

No comments were received from Minister for Indigenous Affairs and the Minister for Infrastructure and Transport.

Comments from State/Territory Ministers

By letter dated 8 June 2018, Mr s22, delegated contact for the Queensland Minister for Environment and the Great Barrier Reef, Minister for Science and Minister for the Arts, the Hon Leeanne Enoch MP, was invited to comment on the referral.

On 18 June 2018, s22, from the Queensland Department of Environment and Science responded noting ([Attachment E](#)) the proposed action will not be assessed using the EIS process in Chapter 3 of the *Environmental Protection Act 1994* (Qld).

Further, s22 notes the Queensland Department of State Development, Manufacturing, Infrastructure and Planning has advised that the Coordinator-General has not received a request for declaration of the proposed action as a coordinated project under Part 4 of the *State Development and Public Works Organisation Act 1971* (Qld).

ASSESSMENT APPROACH:

If you agree that the action is a controlled action, you must decide on the approach for assessment in accordance with section 87 of the EPBC Act. The Department recommends the proposed action be assessed by preliminary documentation.

The matters for consideration in making a decision on an assessment approach are outlined in section 87(3) of the EPBC Act and summarised in the table below. Under section 87(5) of the EPBC Act, you may decide on an assessment using preliminary documentation only if you are satisfied the approach will enable an informed decision to be made about whether or not to approve the taking of the proposed action.

In this case, the Department considers the number and complexity of potential impacts are low and locally confined. This view is based on an analysis of the location of matters of national environmental significance, the number of matters likely to be impacted, the scale of the action, and potential impacts from the proposed action, as outlined at [Attachment A](#) and summarised above.

Further, the Department notes information about the potential impacts of the proposed action has previously been provided through the referral and the request for additional information under section 76(1)(b) of the EPBC Act. While some additional information and analysis is required to assess the potential impacts of the proposed action, such information could be obtained by a request under section 95A of the EPBC Act.

As such, the Department considers assessment by preliminary documentation is an appropriate method of assessment for the proposed action. It will provide sufficient information about the potential impacts of the proposed action, and proposed mitigation and management measures, to enable an informed decision to be made about whether to approve the proposed action.

For these reasons, the Department considers the relevant impacts of the proposed action should be assessed by assessment on preliminary documentation. The Department recommends seeking additional information to inform the assessment. An additional information request will be provided to the proponent following payment of the Stage 1 fee invoice.

In making your decision you must consider the matters summarised in the table below:

Matter to be considered	Comment
Information relating to the action given to the Minister in the referral of the proposal to take the action – s87(3)(a)	The referral is at Attachment A .
Any other information about the impacts of the action considered relevant (including information in a report on the impacts of actions under a policy, plan or program under which the action is to be taken that was given to the Minister under Part 10) – s87(3)(b)	Relevant information is discussed in the Department’s advice on relevant impacts of the proposed action contained in this referral decision brief and its attachments.
Any comments received from a State or Territory minister relevant to deciding the appropriate assessment approach – s87(3)(c)	There was one comment received from the Queensland Department of Environment and Science in response to an invitation under s74(2) of the EPBC Act for the referral (Attachment E). Assessment under the bilateral agreement is not available.
Guidelines (if any) published under s87(6), and matters (if any) prescribed in the regulations – s87(3)(d) and (e)	No guidelines have been made and no regulations have been prescribed.
Minister may decide on an Accredited Assessment if certain requirements are met – s87(4)	Assessment by an accredited assessment process is not recommended.

OTHER MATTERS FOR DECISION-MAKING:

Significant impact guidelines

The Department has reviewed the information in the referral against the *EPBC Act Policy Statement 1.1 Significant Impact Guidelines – Matters of National Environmental Significance* (2013), *Significant impact guidelines 1.3: Coal seam gas and large coal mining developments – impacts on water resources* (2013) and other relevant material. While this material is not binding or exhaustive, the factors identified are considered adequate for decision-making in the circumstances of the proposed action. Adequate information is available for decision-making for the proposed action.

Precautionary principle

In making your decision under section 75 of the EPBC Act, you are required to take account of the precautionary principle (section 391). The precautionary principle is that a lack of full

scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment where there are threats of serious or irreversible environmental damage.

Bioregional plans

In accordance with section 176(5), you are required to have regard to a bioregional plan in making any decision under the EPBC Act to which the plan is relevant. There is no bioregional plan relevant to your decision.

Cost recovery

The fee schedule (with justifications) for your consideration is at Attachment F. The fee schedule (without justifications) at Attachment G will be sent to the person taking the action, including an invoice for Stage 1, seeking fees prior to the commencement of any further activity.

s22

s22 d
Director
Queensland North Assessments Section
Assessments and Governance Branch
Ph: s22

s22 t
Queensland North Assessments Section
Ph: s22

ATTACHMENTS

- A: Referral documentation
 - A1: Additional information on the referral (commercial in confidence) (dated 7 August 2018)
 - A2: Correspondence from the Department to Adani (dated 13 August 2018)
 - A3: Correspondence from Adani to the Department (dated 27 August 2018)
- B: Environmental Reporting Tool (ERT) Report (dated 6 September 2018)
- C: Line area advice
 - C1: Wetlands Section
 - C2: Office of Water Science
 - C3: Migratory Species Section
- D: Public comments
- E: Ministerial comments
- F: Fee schedule (with justifications)
- G: Fee schedule (without justifications)
- H: Decision notice – FOR SIGNATURE
- I: Letters to the proponent & Ministers – FOR SIGNATURE

**2018/8191 North Galilee Water Scheme, Galilee Basin, central Queensland
Referral Decision briefing package**

Note - the versions of the documents below, considered by the delegate in making the decision, were the most recent versions of the documents on the date the decision was made

Document	Name	Document Description	Record Number
QA Check	2018-8191 Referral-Decision-QA check-20180907.pdf		
Brief	2018-8191 Referral-Decision-Brief.docx	FOR SIGNATURE	
Att A	2018-8191 referral.pdf		002269698
Att A	2018-8191 Referral-Attach-2.1-2.3 2.5-2 mnes no impact summary.pdf		002269653
Att A	2018-8191 Referral-Attach-attachment b fig 1 regional location.pdf		002269649
Att A	2018-8191 Referral-Attach-attachment b fig 2 os location and records.pdf		002269671
Att A	2018-8191 Referral-Attach-attachment b fig 3 os potential habitat.pdf		002269681
Att A	2018-8191 Referral-Attach-attachment b fig 4 epbc referral boundary figures.pdf		002269657
Att A	2018-8191 Referral-Attach-attachment c env certification.pdf		002269708
Att A	2018-8191 Referral-Attach-attachment c env policy.pdf		002269700
Att A	2018-8191 Referral-Attach-attachment d ngws epbc review final 16042018 appendices.pdf		002269693
Att A	2018-8191 Referral-Attach-attachment d ngws epbc review final 16042018 appendices-replacement.pdf		002380574
Att A	2018-8191 Referral-Attach-attachment d ngws epbc review final 16042018 report1-20.pdf		002269646
Att A	2018-8191 Referral-Attach-attachment d ngws epbc review final 16042018 report21-47.pdf		002269660
Att A	2018-8191 Referral-Attach-attachment d ngws epbc review final 16042018 report48-72.pdf		002369386
Att A	2018-8191 Referral-Attach-attachment eccpwat-cdmsmith-ze051-rpt-en-0189 final cemp rev 2-28032018.pdf		002269689
Att A	2018-8191 Referral-Attach-attachment f ccpwat-cdmsmith-ze051-rpt-en-0190 cescp rev 2 28032018.pdf		002269677
Att A	2018-8191 Referral-Attach-attachment g epbc act referral area.zip		002269664
Att A	2018-8191 Referral-Attach-estimated remnant vegetation impacted.pdf		002369393
Att A	2018-8191 Referral-Attach-reduce bjd - da for mcu approval - adani infra - 150811.pdf		002269675
Att A	2018-8191 Referral-Attach-tec and listed species summary of impact assessment.pdf		002269685
Att A	2018-8191-Referral-Checklist.pdf		002378505
Att A	2018-8191-Referral-Coordinates.docx		002273655
Att A	2018-8191-Referral-signature pages.pdf		002269739
Att A1	2018-8191 Referral-Decision-Att A1-Additional info-Adani-Response to RFI-20180807.pdf		
Att A2	2018-8191 Referral-Decision-Att A2-Additional info-DoEE-Response-20180813.pdf		
Att A3	2018-8191 Referral-Decision-Att A3-Additional info-Adani-Response-20180827.pdf		
Att B	2018-8191 Referral-Decision-Att B-ERT-20180906.pdf		
Att C1	2018-8191 Referral-Decision-Att C1-Advice-Wetlands Section.pdf		
Att C2	2018-8191 Referral-Decision-Att C2-Advice-OWS.pdf		
Att C3	2018-8191 Referral-Decision-Att C3-Advice-Migratory Species.pdf		
Att D	2018-8191 Referral-Decision-Att D-Public comments.xlsx		
Att D	2018-8191 Referral-Decision-Att D-Campaign submissions		
Att D	2018-8191 Referral-Decision-Att D-Campaign submissions		
Att E	2018-8191 Referral-Decision-Att E-Comment-DAWR.pdf		
Att E	2018-8191 Referral-Decision-Att E-Comment-DES.pdf		002398426
Att E	2018-8191 Referral-Decision-Att E-Comment-GA.pdf		002400371
Att E	2018-8191 Referral-Decision-Att E-Comment-Industry.msg		002400377
Att F	2018-8191 Referral-Decision-Att F-Fee schedule-Justifications.pdf		
Att G	2018-8191 Referral-Decision-Att G-Fee schedule-Proponent.pdf		
Att H	2018-8191 Referral-Decision-Att H-Notice.docx	FOR SIGNATURE	
Att I	2018-8191 Referral-Decision-Att I-Letter-Proponent.docx	FOR SIGNATURE	
Att I	2018-8191 Referral-Decision-Att I-Letter-DES.docx	FOR SIGNATURE	
Att I	2018-8191 Referral-Decision-Att I-Letter-DAWR.docx	FOR SIGNATURE	
Att I	2018-8191 Referral-Decision-Att I-Letter-Innovation.docx	FOR SIGNATURE	
Att I	2018-8191 Referral-Decision-Att I-Letter-Resources.docx	FOR SIGNATURE	

Appendix A – EPBC Act Protected Matters Search



EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 23/02/18 13:40:41

[Summary](#)

[Details](#)

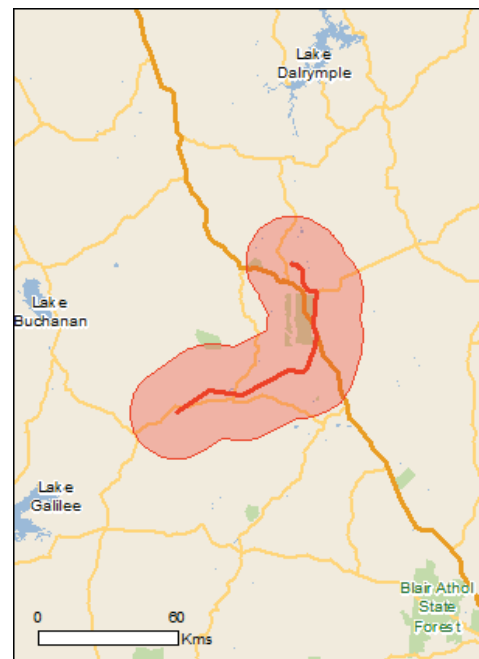
[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

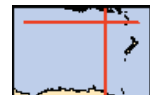
[Acknowledgements](#)



This map may contain data which are
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[Coordinates](#)

Buffer: 20.0Km



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	21
Listed Migratory Species:	9

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	15
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	5
Regional Forest Agreements:	None
Invasive Species:	21
Nationally Important Wetlands:	1
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [\[Resource Information \]](#)

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Name	Status	Type of Presence
Brigalow (Acacia harpophylla dominant and co-dominant)	Endangered	Community known to occur within area
The community of native species dependent on natural discharge of groundwater from the Great Artesian Basin	Endangered	Community likely to occur within area

Listed Threatened Species [\[Resource Information \]](#)

Name	Status	Type of Presence
------	--------	------------------

Birds

Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat known to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area
Neochmia ruficauda ruficauda Star Finch (eastern), Star Finch (southern) [26027]	Endangered	Species or species habitat likely to occur within area
Poephila cincta cincta Southern Black-throated Finch [64447]	Endangered	Species or species habitat known to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Tyto novaehollandiae kimberli Masked Owl (northern) [26048]	Vulnerable	Species or species habitat may occur within area

Mammals

Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat known to occur within area
Macrotis lagotis Greater Bilby [282]	Vulnerable	Species or species habitat may occur within

Name	Status	Type of Presence area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat may occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat may occur within area
Plants		
Dichanthium queenslandicum King Blue-grass [5481]	Endangered	Species or species habitat may occur within area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
Eriocaulon carsonii Salt Pipewort, Button Grass [10584]	Endangered	Species or species habitat likely to occur within area
Eryngium fontanum Blue Devil [64516]	Endangered	Species or species habitat likely to occur within area
Livistona lanuginosa Waxy Cabbage Palm [64581]	Vulnerable	Species or species habitat known to occur within area
Reptiles		
Denisonia maculata Ornamental Snake [1193]	Vulnerable	Species or species habitat likely to occur within area
Egernia rugosa Yakka Skink [1420]	Vulnerable	Species or species habitat likely to occur within area
Furina dunmalli Dunmall's Snake [59254]	Vulnerable	Species or species habitat may occur within area
Lerista vittata Mount Cooper Striped Skink, Mount Cooper Striped Lerista [1308]	Vulnerable	Species or species habitat may occur within area
Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species

Name	Threatened	Type of Presence
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	habitat may occur within area Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Cuculus saturatus Oriental Cuckoo, Himalayan Cuckoo [710]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area

Extra Information

State and Territory Reserves [\[Resource Information \]](#)

Name	State
Blackwood	QLD
Bygana West	QLD
Doongmabulla Mound Springs	QLD
Nairana	QLD
Wilandspey	QLD

Invasive Species [\[Resource Information \]](#)

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
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Birds

Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area

Frogs

Rhinella marina Cane Toad [83218]		Species or species habitat likely to occur within area
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Mammals

Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Equus caballus Horse [5]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
<i>Felis catus</i> Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
<i>Lepus capensis</i> Brown Hare [127]		Species or species habitat likely to occur within area
<i>Mus musculus</i> House Mouse [120]		Species or species habitat likely to occur within area
<i>Oryctolagus cuniculus</i> Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
<i>Rattus rattus</i> Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
<i>Sus scrofa</i> Pig [6]		Species or species habitat likely to occur within area
<i>Vulpes vulpes</i> Red Fox, Fox [18]		Species or species habitat likely to occur within area

Plants

<i>Acacia nilotica</i> subsp. <i>indica</i> Prickly Acacia [6196]		Species or species habitat may occur within area
<i>Cryptostegia grandiflora</i> Rubber Vine, Rubbervine, India Rubber Vine, India Rubbervine, Palay Rubbervine, Purple Allamanda [18913]		Species or species habitat likely to occur within area
<i>Hymenachne amplexicaulis</i> Hymenachne, Olive Hymenachne, Water Stargrass, West Indian Grass, West Indian Marsh Grass [31754]		Species or species habitat likely to occur within area
<i>Jatropha gossypifolia</i> Cotton-leaved Physic-Nut, Bellyache Bush, Cotton-leaf Physic Nut, Cotton-leaf <i>Jatropha</i> , Black Physic Nut [7507]		Species or species habitat likely to occur within area
<i>Lantana camara</i> Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
<i>Parkinsonia aculeata</i> Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean [12301]		Species or species habitat likely to occur within area
<i>Parthenium hysterophorus</i> Parthenium Weed, Bitter Weed, Carrot Grass, False Ragweed [19566]		Species or species habitat likely to occur within area
<i>Prosopis</i> spp. Mesquite, Algaroba [68407]		Species or species habitat likely to occur within area
<i>Vachellia nilotica</i> Prickly Acacia, Blackthorn, Prickly Mimosa, Black Piquant, Babul [84351]		Species or species habitat likely to occur within area

Nationally Important Wetlands

[Resource Information]

Name	State
Doongmabulla Springs	QLD

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-21.451333 146.859328,-21.458222 146.864706,-21.462272 146.880292,-21.468622 146.883503,-21.470675 146.886556,-21.472267
146.890078,-21.480456 146.897083,-21.523006 146.901178,-21.530981 146.907567,-21.539189 146.911458,-21.548081 146.916569,-21.552478
146.933664,-21.557608 146.953742,-21.678592 146.939781,-21.679344 146.940308,-21.679794 146.939831,-21.682178 146.941447,-21.686486
146.943369,-21.689406 146.944972,-21.691653 146.946458,-21.694239 146.947356,-21.698044 146.947808,-21.702147 146.948711,-21.706164
146.950586,-21.706514 146.950497,-21.707442 146.950933,-21.707581 146.951347,-21.712842 146.954006,-21.723897 146.951881,-21.752919
146.948886,-21.776508 146.942217,-21.785244 146.937575,-21.835614 146.919339,-21.8369 146.9198,-21.845381 146.896424,-21.8418
146.8449,-21.9274 146.665801,-21.9135 146.5386,-21.9938 146.4103

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- [-Natural history museums of Australia](#)
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- [-Other groups and individuals](#)

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.

Appendix B – Wildlife Fauna Species Data



Queensland Government

Wildlife Online Extract

Search Criteria: Species List for a Specified Point

Species: All

Type: All

Status: All

Records: All

Date: All

Latitude: -21.8416

Longitude: 146.7871

Distance: 75

Email: taylorb@cdmsmith.com

Date submitted: Wednesday 28 Feb 2018 11:49:11

Date extracted: Wednesday 28 Feb 2018 11:50:09

The number of records retrieved = 1472

Disclaimer

As the DSITIA is still in a process of collating and vetting data, it is possible the information given is not complete. The information provided should only be used for the project for which it was requested and it should be appropriately acknowledged as being derived from Wildlife Online when it is used.

The State of Queensland does not invite reliance upon, nor accept responsibility for this information. Persons should satisfy themselves through independent means as to the accuracy and completeness of this information.

No statements, representations or warranties are made about the accuracy or completeness of this information. The State of Queensland disclaims all responsibility for this information and all liability (including without limitation, liability in negligence) for all expenses, losses, damages and costs you may incur as a result of the information being inaccurate or incomplete in any way for any reason.

animals	amphibians	Bufo	<i>Rhinella marina</i>	cane toad			40
animals	amphibians	Hylidae	<i>Litoria inermis</i>	bumpy rocketfrog	Y	C	24/9
animals	amphibians	Hylidae	<i>Litoria rubella</i>	ruddy treefrog		C	11
animals	amphibians	Hylidae	<i>Litoria caerulea</i>	common green treefrog		C	32
animals	amphibians	Hylidae	<i>Cyclorana brevipes</i>	superb collared frog		C	4
animals	amphibians	Hylidae	<i>Litoria latopalmata</i>	broad palmed rocketfrog		C	5/1
animals	amphibians	Hylidae	<i>Cyclorana alboguttata</i>	greenstripe frog		C	20/5
animals	amphibians	Hylidae	<i>Cyclorana platycephala</i>	water holding frog		C	1
animals	amphibians	Hylidae	<i>Cyclorana novaehollandiae</i>	eastern snapping frog		C	17/5
animals	amphibians	Hylidae	<i>Litoria nasuta</i>	striped rocketfrog		C	1/1
animals	amphibians	Hylidae	<i>Litoria rothii</i>	northern laughing treefrog		C	13/2
animals	amphibians	Limnodynastidae	<i>Notaden bennettii</i>	holy cross frog		C	9
animals	amphibians	Limnodynastidae	<i>Limnodynastes salmii</i>	salmon striped frog		C	1
animals	amphibians	Limnodynastidae	<i>Platylectrum ornatum</i>	ornate burrowing frog		C	22/2
animals	amphibians	Limnodynastidae	<i>Limnodynastes tasmaniensis</i>	spotted grassfrog		C	12/1
animals	amphibians	Myobatrachidae	<i>Crinia deserticola</i>	chirping froglet		C	13/11
animals	amphibians	Myobatrachidae	<i>Uperoleia littlejohni</i>	Einiasleigh gungan		C	4/4
animals	birds	Acanthizidae	<i>Acanthiza chrysorrhoa</i>	yellow-rumped thornbill		C	38/1
animals	birds	Acanthizidae	<i>Acanthiza apicalis</i>	inland thornbill		C	4/1
animals	birds	Acanthizidae	<i>Gerygone olivacea</i>	white-throated gerygone		C	23
animals	birds	Acanthizidae	<i>Gerygone fusca</i>	western gerygone		C	9
animals	birds	Acanthizidae	<i>Acanthiza nana</i>	yellow thornbill		C	16/3
animals	birds	Acanthizidae	<i>Acanthiza reguloides</i>	buff-rumped thornbill		C	2
animals	birds	Acanthizidae	<i>Cinthonicola sagittata</i>	speckled warbler		C	1
animals	birds	Acanthizidae	<i>Smicromis brevirostris</i>	weebill		C	81
animals	birds	Accipitridae	<i>Hamirostra melanosternon</i>	black-breasted buzzard		C	10
animals	birds	Accipitridae	<i>Accipiter cirrocephalus</i>	collared sparrowhawk		C	2
animals	birds	Accipitridae	<i>Accipiter fasciatus</i>	brown goshawk		C	11
animals	birds	Accipitridae	<i>Lophoictinia isura</i>	square-tailed kite		C	5
animals	birds	Accipitridae	<i>Haliastur sphenurus</i>	whistling kite		C	73
animals	birds	Accipitridae	<i>Haliaeetus leucogaster</i>	white-bellied sea-eagle		C	1
animals	birds	Accipitridae	<i>Hieraaetus morphnoides</i>	little eagle		C	10
animals	birds	Accipitridae	<i>Aviceda subcristata</i>	Pacific baza		C	4
animals	birds	Accipitridae	<i>Aquila audax</i>	wedge-tailed eagle		C	41
animals	birds	Accipitridae	<i>Milvus migrans</i>	black kite		C	29
animals	birds	Accipitridae	<i>Circus assimilis</i>	spotted harrier		C	3
animals	birds	Accipitridae	<i>Elanus axillaris</i>	black-shouldered kite		C	6
animals	birds	Accipitridae	<i>Circus approximans</i>	swamp harrier		C	2
animals	birds	Acrocephalidae	<i>Acrocephalus australis</i>	Australian reed-warbler		C	9
animals	birds	Aegothelidae	<i>Aegotheles cristatus</i>	Australian owl-nightjar		C	33
animals	birds	Alaudidae	<i>Mirafra javanica</i>	Horsfield's bushlark		C	15
animals	birds	Anatidae	<i>Nettapus pulchellus</i>	green pygmy-goose		C	4
animals	birds	Anatidae	<i>Dendrocygna arcuata</i>	wandering whistling-duck		C	2
animals	birds	Anatidae	<i>Dendrocygna eytoni</i>	plumed whistling-duck		C	5
animals	birds	Anatidae	<i>Chenonetta jubata</i>	Australian wood duck		C	18
animals	birds	Anatidae	<i>Anas superciliosa</i>	Pacific black duck		C	28

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	Anatidae	<i>Aythya australis</i>	hardhead		C		18
animals	Anatidae	<i>Anas rhynchotis</i>	Australasian shoveler		C		2
animals	Anatidae	<i>Cygnus atratus</i>	black swan		C		10
animals	Anatidae	<i>Anas gracilis</i>	grey teal		C		26
animals	Anatidae	<i>Anas castanea</i>	chestnut teal		C		2
animals	Anatidae	<i>Nettapus coromandelianus</i>	cotton pygmy-goose		C		15
animals	Anatidae	<i>Stictonetta naevosa</i>	freckled duck		C		2
animals	Anatidae	<i>Malacorhynchus membranaceus</i>	pink-eared duck		C		3
animals	Anhingidae	<i>Anhinga novaehollandiae</i>	Australasian darter		C		21
animals	Anseranatidae	<i>Anseranas semipalmata</i>	magpie goose		C		2
animals	Apodidae	<i>Hirundapus caudacutus</i>	white-throated needletail		SL		1
animals	Apodidae	<i>Apus pacificus</i>	fork-tailed swift		SL		1
animals	Ardeidae	<i>Nycticorax caledonicus</i>	nankeen night-heron		C		10
animals	Ardeidae	<i>Egretta novaehollandiae</i>	white-faced heron		C		20
animals	Ardeidae	<i>Bubulcus ibis</i>	cattle egret		C		1
animals	Ardeidae	<i>Ardea pacifica</i>	white-necked heron		C		24
animals	Ardeidae	<i>Ardea intermedia</i>	intermediate egret		C		10
animals	Ardeidae	<i>Egretta garzetta</i>	little egret		C		1
animals	Ardeidae	<i>Ardea alba modesta</i>	eastern great egret		C		13
animals	Artamidae	<i>Artamus personatus</i>	masked woodswallow		C		12
animals	Artamidae	<i>Cracticus tibicen</i>	Australian magpie		C		101
animals	Artamidae	<i>Artamus cinereus</i>	black-faced woodswallow		C		21
animals	Artamidae	<i>Artamus cyanopterus</i>	dusky woodswallow		C		6
animals	Artamidae	<i>Strepera graculina</i>	pled currawong		C		3
animals	Artamidae	<i>Artamus minor</i>	little woodswallow		C		23
animals	Artamidae	<i>Cracticus torquatus</i>	grey butcherbird		C		51
animals	Artamidae	<i>Artamus leucorhynchus</i>	white-breasted woodswallow		C		15
animals	Artamidae	<i>Artamus superciliosus</i>	white-browed woodswallow		C		13
animals	Artamidae	<i>Cracticus nigrogularis</i>	pled butcherbird		C		122/1
animals	Burhinidae	<i>Burhinus grallarius</i>	bush stone-curlew		C		3
animals	Cacatuidae	<i>Cacatua galerita</i>	sulphur-crested cockatoo		C		60
animals	Cacatuidae	<i>Eolophus roseicapilla</i>	galah		C		72
animals	Cacatuidae	<i>Calyptorhynchus banksii</i>	red-tailed black-cockatoo		C		16
animals	Cacatuidae	<i>Nymphicus hollandicus</i>	cockatiel		C		32
animals	Cacatuidae	<i>Calyptorhynchus funereus</i>	yellow-tailed black-cockatoo		C		7
animals	Campephagidae	<i>Coracina maxima</i>	ground cuckoo-shrike		C		2
animals	Campephagidae	<i>Lalage tricolor</i>	white-winged triller		C		20
animals	Campephagidae	<i>Lalage leucornela</i>	varied triller		C		2
animals	Campephagidae	<i>Coracina papuensis</i>	white-bellied cuckoo-shrike		C		8
animals	Campephagidae	<i>Coracina tenuirostris</i>	cicadabird		C		2
animals	Campephagidae	<i>Coracina novaehollandiae</i>	black-faced cuckoo-shrike		C		71
animals	Casuariidae	<i>Dromaius novaehollandiae</i>	emu		C		20
animals	Charadriidae	<i>Vanellus miles miles</i>	masked lapwing (northern subspecies)		C		1
animals	Charadriidae	<i>Erythronyx cinctus</i>	red-kneed dotterel		C		1
animals	Charadriidae	<i>Eisayornis melanops</i>	black-fronted dotterel		C		22
animals	Charadriidae	<i>Vanellus miles</i>	masked lapwing		C		8

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	Charadriidae	<i>Vanellus miles novaehollandiae</i>	masked lapwing (southern subspecies)		C		10
animals	Ciconiidae	<i>Ephippiorhynchus asiaticus</i>	black-necked stork		C		8
animals	Cisticolidae	<i>Cisticola exilis</i>	golden-headed cisticola		C		15
animals	Climacteridae	<i>Climacteris affinis</i>	white-browed treecreeper		C		1
animals	Climacteridae	<i>Climacteris picumnus</i>	brown treecreeper		C		41/1
animals	Columbidae	<i>Geophaps scripta scripta</i>	squatter pigeon (southern subspecies)		V	V	34/3
animals	Columbidae	<i>Streptopelia chinensis</i>	spotted dove	Y			1
animals	Columbidae	<i>Geopelia humeralis</i>	bar-shouldered dove		C		8
animals	Columbidae	<i>Phaps chalcoptera</i>	common bronzewing		C		30
animals	Columbidae	<i>Ocyphaps lophotes</i>	crested pigeon		C		77
animals	Columbidae	<i>Geophaps scripta</i>	squatter pigeon		C		1
animals	Columbidae	<i>Geopelia striata</i>	peaceful dove		C		67
animals	Columbidae	<i>Geopelia cuneata</i>	diamond dove		C		9
animals	Coraciidae	<i>Eurystomus orientalis</i>	dollarbird		C		25
animals	Corcoraciidae	<i>Corcorax melanorhamphos</i>	white-winged chough		C		7
animals	Corcoraciidae	<i>Struthidea cinerea</i>	apostlebird		C		83
animals	Corvidae	<i>Corvus bennetti</i>	little crow		C		9
animals	Corvidae	<i>Corvus coronoides</i>	Australian raven		C		43
animals	Corvidae	<i>Corvus orru</i>	Torresian crow		C		101/1
animals	Corvidae	<i>Corvus sp.</i>					8
animals	Cuculidae	<i>Cacomantis pallidus</i>	pallid cuckoo		C		18
animals	Cuculidae	<i>Chalcites osculans</i>	black-eared cuckoo		C		1
animals	Cuculidae	<i>Chalcites lucidus</i>	shining bronze-cuckoo		C		3
animals	Cuculidae	<i>Chalcites basalis</i>	Horsfield's bronze-cuckoo		C		5
animals	Cuculidae	<i>Scythrops novaehollandiae</i>	channel-billed cuckoo		C		12
animals	Cuculidae	<i>Eudynamys orientalis</i>	eastern koel		C		6
animals	Cuculidae	<i>Cacomantis variolosus</i>	brush cuckoo		C		2
animals	Cuculidae	<i>Centropus phasianinus</i>	pheasant coucal		C		21
animals	Cuculidae	<i>Cuculus optatus</i>	oriental cuckoo		SL		1
animals	Dicruridae	<i>Dicrurus bracteatus</i>	spangled drongo		C		1
animals	Estrilidae	<i>Neochmia modesta</i>	plum-headed finch		C		16
animals	Estrilidae	<i>Neochmia ruficauda</i>	star finch		C		1
animals	Estrilidae	<i>Taeniopygia guttata</i>	zebra finch		C		33
animals	Estrilidae	<i>Taeniopygia bichenovii</i>	double-barred finch		C		59
animals	Estrilidae	<i>Poephila cincta cincta</i>	black-throated finch (white-rumped subspecies)		E	E	40
animals	Eurostopodidae	<i>Eurostopodus mystacalis</i>	white-throated nightjar		C		1
animals	Eurostopodidae	<i>Eurostopodus argus</i>	spotted nightjar		C		9
animals	Falconidae	<i>Falco longipennis</i>	Australian hobby		C		7
animals	Falconidae	<i>Falco berigora</i>	brown falcon		C		49
animals	Falconidae	<i>Falco subniger</i>	black falcon		C		4
animals	Falconidae	<i>Falco hypoleucos</i>	grey falcon		V		1
animals	Falconidae	<i>Falco peregrinus</i>	peregrine falcon		C		4
animals	Falconidae	<i>Falco cenchroides</i>	nankeen kestrel		C		48
animals	Gruidae	<i>Grus rubicunda</i>	brolga		C		37
animals	Halcyonidae	<i>Todiramphus macleayii</i>	forest kingfisher		C		8

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	Halcyonidae	<i>Dacelo novaeguineae</i>	laughing kookaburra		C		53
animals	Halcyonidae	<i>Todiramphus sanctus</i>	sacred kingfisher		C		21
animals	Halcyonidae	<i>Todiramphus pyrrhopygius</i>	red-backed kingfisher		C		18
animals	Halcyonidae	<i>Dacelo leachii</i>	blue-winged kookaburra		C		38
animals	Hirundinidae	<i>Petrochelidon ariel</i>	fairy martin		C		9
animals	Hirundinidae	<i>Petrochelidon nigricans</i>	tree martin		C		8
animals	Jacaniidae	<i>Irediparra gallinacea</i>	comb-crested jacana		C		3
animals	Maluridae	<i>Malurus melanocephalus</i>	red-backed fairy-wren		C		51/2
animals	Maluridae	<i>Malurus lamberti</i>	variegated fairy-wren		C		43
animals	Megaluridae	<i>Megalurus timoriensis</i>	tawny grassbird		C		1
animals	Megaluridae	<i>Cincloramphus cruralis</i>	brown songlark		C		1
animals	Megaluridae	<i>Cincloramphus mathewsi</i>	rufous songlark		C		25
animals	Megapodiidae	<i>Alectura lathamii</i>	Australian brush-turkey		C		1
animals	Meliphagidae	<i>Entomyzon cyanotis</i>	blue-faced honeyeater		C		61/1
animals	Meliphagidae	<i>Plectorhyncha lanceolata</i>	striped honeyeater		C		43
animals	Meliphagidae	<i>Melithreptus albogularis</i>	white-throated honeyeater		C		35
animals	Meliphagidae	<i>Acanthagenys rufogularis</i>	spiny-cheeked honeyeater		C		20
animals	Meliphagidae	<i>Conopophila rufogularis</i>	rufous-throated honeyeater		C		9
animals	Meliphagidae	<i>Philemon citreogularis</i>	little friarbird		C		64/2
animals	Meliphagidae	<i>Ptilotula fusca</i>	fuscous honeyeater		C		4/3
animals	Meliphagidae	<i>Grantiella picta</i>	painted honeyeater		V	V	1
animals	Meliphagidae	<i>Stomiopera flava</i>	yellow honeyeater		C		1
animals	Meliphagidae	<i>Meliphaga lewinii</i>	Lewin's honeyeater		C		1
animals	Meliphagidae	<i>Ptilotula plumula</i>	grey-fronted honeyeater		C		9
animals	Meliphagidae	<i>Manorina flavigula</i>	yellow-throated miner		C		97
animals	Meliphagidae	<i>Epthianura tricolor</i>	crimson chat		C		1
animals	Meliphagidae	<i>Gavicalis virescens</i>	singing honeyeater		C		60/2
animals	Meliphagidae	<i>Lichmera indistincta</i>	brown honeyeater		C		49
animals	Meliphagidae	<i>Melithreptus gularis</i>	black-chinned honeyeater		C		1
animals	Meliphagidae	<i>Melithreptus lunatus</i>	white-naped honeyeater		C		1
animals	Meliphagidae	<i>Philemon corniculatus</i>	noisy friarbird		C		55
animals	Meliphagidae	<i>Ptilotula penicillata</i>	white-plumed honeyeater		C		14
animals	Meliphagidae	<i>Manorina melanocephala</i>	noisy miner		C		10
animals	Meropidae	<i>Merops ornatus</i>	rainbow bee-eater		C		61
animals	Monarchidae	<i>Grallina cyanoleuca</i>	magpie-lark		C		88
animals	Monarchidae	<i>Myiagra cyanoleuca</i>	satin flycatcher		SL		1
animals	Monarchidae	<i>Myiagra rubecula</i>	leaden flycatcher		C		15
animals	Monarchidae	<i>Myiagra inquieta</i>	restless flycatcher		C		20
animals	Motacillidae	<i>Anthus novaeseelandiae</i>	Australasian pipit		C		14
animals	Nectariniidae	<i>Dicaeum hirundinaceum</i>	mistletoebird		C		41
animals	Neosittidae	<i>Daphoenositta chrysoptera</i>	varied sittella		C		15
animals	Oriolidae	<i>Oriolus sagittatus</i>	olive-backed oriole		C		12
animals	Oriolidae	<i>Sphecotheres vieilloti</i>	Australasian figbird		C		3
animals	Otididae	<i>Ardeotis australis</i>	Australian bustard		C		27
animals	Pachycephalidae	<i>Pachycephala rufiventris</i>	rufous whistler		C		97/2
animals	Pachycephalidae	<i>Pachycephala pectoralis</i>	golden whistler		C		1

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	Pachycephalidae	<i>Colluricincla harmonica</i>	grey shrike-thrush		C		41/1
animals	Pachycephalidae	<i>Oreoca gutturalis</i>	crested bellbird		C		10
animals	Pardalotidae	<i>Pardalotus punctatus</i>	spotted pardalote		C		1
animals	Pardalotidae	<i>Pardalotus rubricatus</i>	red-browed pardalote		C		1
animals	Pardalotidae	<i>Pardalotus striatus</i>	striated pardalote		C		107
animals	Pelecanidae	<i>Pelecanus conspicillatus</i>	Australian pelican		C		10
animals	Petroicidae	<i>Petroica goodenovii</i>	red-capped robin		C		2
animals	Petroicidae	<i>Melanodryas cucullata</i>	hooded robin		C		4
animals	Petroicidae	<i>Microeca fascinans</i>	jacky winter		C		65/1
animals	Phalacrocoracidae	<i>Phalacrocorax varius</i>	piebald cormorant		C		1
animals	Phalacrocoracidae	<i>Microcarbo melanoleucos</i>	little pied cormorant		C		16
animals	Phalacrocoracidae	<i>Phalacrocorax sulcirostris</i>	little black cormorant		C		22
animals	Phalacrocoracidae	<i>Phalacrocorax carbo</i>	great cormorant		C		1
animals	Phasianidae	<i>Coturnix pectoralis</i>	stubble quail		C		7/3
animals	Phasianidae	<i>Coturnix ypsilophora</i>	brown quail		C		10/1
animals	Podargidae	<i>Podargus strigoides</i>	tawny frogmouth		C		24
animals	Podicipedidae	<i>Polocephalus poliocephalus</i>	hoary-headed grebe		C		2
animals	Podicipedidae	<i>Podiceps cristatus</i>	great crested grebe		C		4
animals	Podicipedidae	<i>Tachybaptus novaehollandiae</i>	Australasian grebe		C		18
animals	Pomatostomidae	<i>Pomatostomus temporalis</i>	grey-crowned babbler		C		70
animals	Psittacidae	<i>Aprosmictus erythropterus</i>	red-winged parrot		C		74
animals	Psittacidae	<i>Trichoglossus haematodus moluccanus</i>	rainbow lorikeet		C		54
animals	Psittacidae	<i>Melopsittacus undulatus</i>	budgerigar		C		10
animals	Psittacidae	<i>Platyercus adscitus</i>	pale-headed rosella		C		91
animals	Psittacidae	<i>Psephotus pulcherrimus</i>	paradise parrot		PE	EX	1
animals	Ptilonorhynchidae	<i>Ptilonorhynchus maculatus</i>	spotted bowerbird		C		52
animals	Ptilonorhynchidae	<i>Ptilonorhynchus nuchalis</i>	great bowerbird		C		2
animals	Rallidae	<i>Fulica atra</i>	Eurasian coot		C		11
animals	Rallidae	<i>Tribonyx ventralis</i>	black-tailed native-hen		C		4
animals	Rallidae	<i>Gallinula tenebrosa</i>	dusky moorhen		C		7
animals	Rallidae	<i>Porphyrio melanotus</i>	purple swamphen		C		4
animals	Rallidae	<i>Gallirallus philippensis</i>	buff-banded rail		C		1
animals	Recurvirostridae	<i>Himantopus himantopus</i>	black-winged stilt		C		10
animals	Rhipiduridae	<i>Rhipidura albiscapa</i>	grey fantail		C		47
animals	Rhipiduridae	<i>Rhipidura rufifrons</i>	rufous fantail		SL		2
animals	Rhipiduridae	<i>Rhipidura leucophrys</i>	willie wagtail		C		96
animals	Scolopacidae	<i>Gallinago hardwickii</i>	Latham's snipe		SL		1
animals	Scolopacidae	<i>Tringa stagnatilis</i>	marsh sandpiper		SL		1
animals	Strigidae	<i>Ninox boobook</i>	southern boobook		C		30
animals	Strigidae	<i>Acridotheres tristis</i>	common myna	Y			1
animals	Threskiornithidae	<i>Platalea flavipes</i>	yellow-billed spoonbill		C		15
animals	Threskiornithidae	<i>Plegadis falcinellus</i>	glossy ibis		SL		1
animals	Threskiornithidae	<i>Threskiornis molucca</i>	Australian white ibis		C		10
animals	Threskiornithidae	<i>Threskiornis spinicollis</i>	straw-necked ibis		C		20
animals	Threskiornithidae	<i>Platalea regia</i>	royal spoonbill		C		13
animals	Timaliidae	<i>Zosterops lateralis</i>	silveryeye		C		1

animals	birds	Turnicidae	<i>Turnix velox</i>	little button-quail		C	3
animals	birds	Turnicidae	<i>Turnix pyrrhothorax</i>	red-chested button-quail		C	10/5
animals	birds	Tytonidae	<i>Tyto delicatula</i>	eastern barn owl		C	3
animals	birds	Tytonidae	<i>Tyto longimembris</i>	eastern grass owl		C	1
animals	insects	Lycaenidae	<i>Zizeeria karsandra</i>	spotted grass-blue			1
animals	insects	Nymphalidae	<i>Danaus petilia</i>	lesser wanderer			2
animals	insects	Nymphalidae	<i>Junonia orithya albicincta</i>	blue argus			2
animals	insects	Nymphalidae	<i>Hypolimnas bolina nerina</i>	varied eggfly			2
animals	insects	Nymphalidae	<i>Junonia villida villida</i>	meadow argus			1
animals	insects	Nymphalidae	<i>Tirumala hamata hamata</i>	blue tiger			4
animals	insects	Nymphalidae	<i>Euploea corinna</i>	common crow			2
animals	insects	Papilionidae	<i>Papilio aegeus</i>				1
animals	insects	Papilionidae	<i>Cressida cressida cressida</i>	clearwing swallowtail			1
animals	insects	Pieridae	<i>Eurema hecabe</i>	large grass-yellow			2
animals	insects	Pieridae	<i>Catopsilia pyranthe crokera</i>	white migrant			1
animals	insects	Pieridae	<i>Belenois java teutonia</i>	caper white			2
animals	insects	Pieridae	<i>Catopsilia pomona</i>	lemon migrant			1
animals	insects	Pieridae	<i>Eurema smilax</i>	small grass-yellow			1
animals	mammals	Bovidae	<i>Bos taurus</i>	European cattle	Y		27
animals	mammals	Canidae	<i>Canis lupus dingo</i>	dingo			14
animals	mammals	Canidae	<i>Canis lupus familiaris</i>	dog	Y		3
animals	mammals	Dasyuridae	<i>Sminthopsis murina</i>	common dunnart	C		1
animals	mammals	Dasyuridae	<i>Planigale maculata</i>	common planigale	C		4/1
animals	mammals	Dasyuridae	<i>Sminthopsis macroura</i>	stripe-faced dunnart	C		3
animals	mammals	Dasyuridae	<i>Planigale tenuirostris</i>	narrow-nosed planigale	C		1/1
animals	mammals	Emballonuridae	<i>Saccolaimus flaviventris</i>	yellow-bellied sheath-tail bat	C		4/1
animals	mammals	Equidae	<i>Equus caballus</i>	horse	Y		1
animals	mammals	Felidae	<i>Felis catus</i>	cat	Y		10
animals	mammals	Leporidae	<i>Oryctolagus cuniculus</i>	rabbit	Y		23
animals	mammals	Macropodidae	<i>Petrogale assimilis</i>	allied rock-wallaby	C		3/3
animals	mammals	Macropodidae	<i>Macropus rufogriseus</i>	red-necked wallaby	C		1
animals	mammals	Macropodidae	<i>Lagorchestes conspicillatus</i>	spectacled hare-wallaby	C		11
animals	mammals	Macropodidae	<i>Macropus giganteus</i>	eastern grey kangaroo	C		85
animals	mammals	Macropodidae	<i>Macropus rufus</i>	red kangaroo	C		33
animals	mammals	Macropodidae	<i>Wallabia bicolor</i>	swamp wallaby	C		15
animals	mammals	Macropodidae	<i>Macropus robustus</i>	common wallaroo	C		6
animals	mammals	Macropodidae	<i>Macropus dorsalis</i>	black-striped wallaby	C		4
animals	mammals	Molossidae	<i>Mormopterus sp.</i>				1
animals	mammals	Molossidae	<i>Chaerephon jobensis</i>	northern freetail bat	C		5
animals	mammals	Molossidae	<i>Mormopterus lumsdenae</i>	northern free-tailed bat	C		10/1
animals	mammals	Molossidae	<i>Tadarida australis</i>	white-striped freetail bat	C		1
animals	mammals	Muridae	<i>Mus musculus</i>	house mouse	Y		19/4
animals	mammals	Muridae	<i>Pseudomys sp.</i>				1
animals	mammals	Muridae	<i>Rattus rattus</i>	black rat	Y		1/1
animals	mammals	Muridae	<i>Rattus sordidus</i>	canefield rat	C		1
animals	mammals	Muridae	<i>Pseudomys patrius</i>	eastern pebble-mound mouse	C		4

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	Muridae	<i>Pseudomys desertor</i>	desert mouse		C		6
animals	Muridae	<i>Hydromys chrysogaster</i>	water rat		C		3
animals	Muridae	<i>Pseudomys delicatulus</i>	delicate mouse		C		7
animals	Muridae	<i>Pseudomys gracilicaudatus</i>	eastern chestnut mouse		C		1
animals	Peramelidae	<i>Isoodon macrourus</i>	northern brown bandicoot		C		2
animals	Petauridae	<i>Petaurus breviceps</i>	sugar glider		C		2
animals	Phalangeridae	<i>Trichosurus vulpecula</i>	common brushtail possum		C		11
animals	Phascogasteridae	<i>Phascogaster cinereus</i>	koala		V	V	14
animals	Potoroidae	<i>Aepyprymnus rufescens</i>	rufous bettong		C		18
animals	Pteropodidae	<i>Pteropus scapulatus</i>	little red flying-fox		C		5
animals	Suidae	<i>Sus scrofa</i>	pig	Y			14
animals	Tachyglossidae	<i>Tachyglossus aculeatus</i>	short-beaked echidna		SL		10
animals	Vespertilionidae	<i>Chalinolobus gouldii</i>	Gould's wattled bat		C		18/4
animals	Vespertilionidae	<i>Scotorepens greyii</i>	little broad-nosed bat		C		23/1
animals	Vespertilionidae	<i>Chalinolobus morio</i>	chocolate wattled bat		C		3
animals	Vespertilionidae	<i>Nyctophilus bifax</i>	northern long-eared bat		C		2
animals	Vespertilionidae	<i>Scotorepens sp.</i>					1
animals	Vespertilionidae	<i>Nyctophilus sp.</i>					1
animals	Vespertilionidae	<i>Chalinolobus picatus</i>	little pied bat		C		4/1
animals	Vespertilionidae	<i>Scotorepens balstoni</i>	inland broad-nosed bat		C		4/1
animals	Vespertilionidae	<i>Scotorepens sanborni</i>	northern broad-nosed bat		C		1/1
animals	Vespertilionidae	<i>Nyctophilus geoffroyi</i>	lesser long-eared bat		C		8/6
animals	Vespertilionidae	<i>Vespadelus trougtoni</i>	eastern cave bat		C		1
animals	Vespertilionidae	<i>Chalinolobus nigrogriseus</i>	hoary wattled bat		C		7/4
animals	Vespertilionidae	<i>Vespadelus baverstocki</i>	inland forest bat		C		2
animals	Vombatidae	<i>Lasiorhinus krefftii</i>	northern hairy-nosed wombat		E	CE	26
animals	Agamidae	<i>Tympanocryptis lineata</i>	lined earless dragon		C		2/2
animals	Agamidae	<i>Diporiphora australis</i>	tommy roundhead		C		5
animals	Agamidae	<i>Chlamydosaurus kingii</i>	frilled lizard		C		2
animals	Agamidae	<i>Amphibolurus gilberti</i>	Gilbert's dragon		C		1/1
animals	Agamidae	<i>Ctenophorus nuchalis</i>	central netted dragon		C		2
animals	Agamidae	<i>Amphibolurus burnsi</i>	Burns's dragon		C		1
animals	Agamidae	<i>Pogona barbata</i>	bearded dragon		C		1
animals	Agamidae	<i>Diporiphora sp.</i>					1
animals	Agamidae	<i>Diporiphora nobbi</i>					1
animals	Boidae	<i>Aspidites melanocephalus</i>	black-headed python		C		6
animals	Boidae	<i>Antaresia maculosa</i>	spotted python		C		3
animals	Boidae	<i>Morelia spilota</i>	carpet python		C		2
animals	Carphodactylidae	<i>Nephrurus asper</i>	spiny knob-tailed gecko		C		1/1
animals	Chelidae	<i>Emydura macquarii krefftii</i>	Krefft's river turtle		C		4
animals	Colubridae	<i>Boiga irregularis</i>	brown tree snake		C		3
animals	Colubridae	<i>Tropidonophis mairii</i>	freshwater snake		C		2
animals	Colubridae	<i>Dendrelaphis punctulatus</i>	green tree snake		C		1
animals	Diplodactylidae	<i>Diplodactylus vittatus</i>	wood gecko		C		1
animals	Diplodactylidae	<i>Strophurus williamsi</i>	soft-spined gecko		C		7/1
animals	Diplodactylidae	<i>Oedura castelnaui</i>	northern velvet gecko		C		4/1

animals	reptiles	Diplodactylidae	<i>Oedura cincta</i>	inland marbled velvet gecko	C		1
animals	reptiles	Diplodactylidae	<i>Lucasium steindachneri</i>	Steindachner's gecko	C		6/1
animals	reptiles	Diplodactylidae	<i>Diplodactylus platyurus</i>	eastern fat-tailed gecko	C		2/1
animals	reptiles	Diplodactylidae	<i>Oedura marmorata sensu lato</i>	marbled velvet gecko	C		3/1
animals	reptiles	Diplodactylidae	<i>Rhynchoedura ornata sensu lato</i>	beaked gecko	C		2/1
animals	reptiles	Diplodactylidae	<i>Amalosa rhombifer</i>	zig-zag gecko	C		4
animals	reptiles	Elapidae	<i>Pseudonaja nuchalis sensu lato</i>	western brown snake	C		1
animals	reptiles	Elapidae	<i>Suta suta</i>	myall snake	C		3
animals	reptiles	Elapidae	<i>Furina diadema</i>	red-naped snake	C		1
animals	reptiles	Elapidae	<i>Denisonia maculata</i>	ornamental snake	V	V	3
animals	reptiles	Elapidae	<i>Pseudonaja guttata</i>	speckled brown snake	C		1/1
animals	reptiles	Elapidae	<i>Cryptophis boschmai</i>	Carpentaria whip snake	C		6
animals	reptiles	Elapidae	<i>Pseudonaja textilis</i>	eastern brown snake	C		4
animals	reptiles	Elapidae	<i>Vermicella annulata</i>	bandy-bandy	C		2
animals	reptiles	Elapidae	<i>Antiaoserpens albiceps</i>	north-eastern plain-nosed burrowing snake	C		1
animals	reptiles	Elapidae	<i>Acanthophis antarcticus</i>	common death adder	V		1
animals	reptiles	Elapidae	<i>Brachyurophhis australis</i>	coral snake	C		4
animals	reptiles	Elapidae	<i>Hoplocephalus bitorquatus</i>	pale-headed snake	C		1
animals	reptiles	Gekkonidae	<i>Gehyra dubia</i>	dubious dtella	C		15/3
animals	reptiles	Gekkonidae	<i>Gehyra catenata</i>	chain-backed dtella	C		28/1
animals	reptiles	Gekkonidae	<i>Heteronotia binoei</i>	Bynoe's gecko	C		38/3
animals	reptiles	Pygopodidae	<i>Delma tincta</i>	excitable delma	C		3/1
animals	reptiles	Pygopodidae	<i>Lialis burtonis</i>	Burton's legless lizard	C		9/2
animals	reptiles	Pygopodidae	<i>Pygopus schraderi</i>	eastern hooded scaly-foot	C		2
animals	reptiles	Scincidae	<i>Ctenotus hebetior</i>	stout ctenotus	C		1
animals	reptiles	Scincidae	<i>Pygmaeascincus timlowi</i>	dwarf litter-skink	C		3/1
animals	reptiles	Scincidae	<i>Lerista punctatovittata</i>	eastern robust slider	C		15/4
animals	reptiles	Scincidae	<i>Cryptoblepharus pannosus</i>	ragged snake-eyed skink	C		24/3
animals	reptiles	Scincidae	<i>Ctenotus spaldingi</i>	straight-browed ctenotus	C		16/6
animals	reptiles	Scincidae	<i>Ctenotus strauchii</i>	eastern barred wedgesnout ctenotus	C		4
animals	reptiles	Scincidae	<i>Tiliqua scincoides</i>	eastern blue-tongued lizard	C		2
animals	reptiles	Scincidae	<i>Ctenotus capricorni</i>	Capricorn ctenotus	NT		1
animals	reptiles	Scincidae	<i>Ctenotus leonhardii</i>	Leonhardi's ctenotus	C		13
animals	reptiles	Scincidae	<i>Morethia boulengeri</i>	south-eastern morethia skink	C		14/2
animals	reptiles	Scincidae	<i>Ctenotus pantherinus</i>	leopard ctenotus	C		1/1
animals	reptiles	Scincidae	<i>Proablepharus tenuis</i>	northern soil-crevice skink	C		2/1
animals	reptiles	Scincidae	<i>Morethia taeniopleura</i>	fire-tailed skink	C		7/2
animals	reptiles	Scincidae	<i>Anomalopus brevicollis</i>	short-necked worm-skink	C		1
animals	reptiles	Scincidae	<i>Cryptoblepharus metallicus</i>	metallic snake-eyed skink	C		4/1
animals	reptiles	Scincidae	<i>Glaphyromorphus punctulatus</i>	fine-spotted mulch-skink	C		2/1
animals	reptiles	Scincidae	<i>Carlia pectoralis sensu lato</i>		C		22/6
animals	reptiles	Scincidae	<i>Cryptoblepharus virgatus sensu lato</i>		C		1
animals	reptiles	Scincidae	<i>Cryptoblepharus plagiocephalus sensu lato</i>		C		3/1
animals	reptiles	Scincidae	<i>Lerista fragilis</i>	eastern mulch slider	C		10
animals	reptiles	Scincidae	<i>Menetia greyii</i>	common dwarf skink	C		7/3

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	Scincidae	<i>Egernia rugosa</i>	yakka skink		V	V	1
animals	Scincidae	<i>Carlia rubigo</i>	orange-flanked rainbow skink		C	C	2/1
animals	Scincidae	<i>Eremiascincus fasciolatus</i>	narrow-banded sand swimmer		C	C	3/1
animals	Scincidae	<i>Carlia munda</i>	shaded-litter rainbow-skink		C	C	4/1
animals	Scincidae	<i>Carlia vivax</i>	tussock rainbow-skink		C	C	1
animals	Varanidae	<i>Varanus mertensi</i>	Mertens' water monitor		C	C	2/1
animals	Varanidae	<i>Varanus tristis</i>	black-tailed monitor		C	C	13
animals	Varanidae	<i>Varanus gouldii</i>	sand monitor		C	C	4
animals	Varanidae	<i>Varanus varius</i>	lace monitor		C	C	1
animals	Varanidae	<i>Varanus panoptes</i>	yellow-spotted monitor		C	C	5
animals	Indeterminate	<i>Indeterminata</i>	Unknown or Code Pending		C	C	1
plants	Cycadaceae	<i>Cycas cupida</i>			V	V	6/6
plants	Adiantaceae	<i>Cheilanthes sieberi subsp. sieberi</i>			C	C	3/3
plants	Adiantaceae	<i>Cheilanthes tenuifolia</i>	rock fern		C	C	1
plants	Adiantaceae	<i>Cheilanthes sieberi</i>			C	C	4
plants	Adiantaceae	<i>Cheilanthes distans</i>	bristly cloak fern		C	C	2/2
plants	Adiantaceae	<i>Cheilanthes brownii</i>			C	C	2/2
plants	Azollaceae	<i>Azolla pinnata</i>	ferry azolla		C	C	3/1
plants	Marsileaceae	<i>Marsilea hirsuta</i>	hairy nardoo		C	C	8/7
plants	Marsileaceae	<i>Marsilea drummondii</i>	common nardoo		C	C	1/1
plants	Parkeriaceae	<i>Ceratopteris thalictroides</i>			C	C	3/1
plants	Thelypteridaceae	<i>Cyclosorus interruptus</i>			C	C	3/1
plants	Acanthaceae	<i>Rostellularia adscendens</i>	pastel flower		C	C	6/4
plants	Acanthaceae	<i>Pseuderanthemum variabile</i>			C	C	4/4
plants	Acanthaceae	<i>Rostellularia adscendens var. clementii</i>			C	C	1/1
plants	Acanthaceae	<i>Rostellularia adscendens var. latifolia</i>			C	C	1/1
plants	Acanthaceae	<i>Rostellularia adscendens subsp. adscendens</i>			C	C	1/1
plants	Acanthaceae	<i>Dipteracanthus australasicus subsp. corynothecus</i>			C	C	4/4
plants	Acanthaceae	<i>Dipteracanthus australasicus subsp. australasicus</i>			C	C	7/7
plants	Acanthaceae	<i>Brunoniella australis</i>	blue trumpet		C	C	4/4
plants	Acanthaceae	<i>Nelsonia campestris</i>			C	C	2/2
plants	Acanthaceae	<i>Acanthaceae</i>			C	C	1
plants	Aizoaceae	<i>Trianthema triquetra</i>	red spinach		C	C	6/6
plants	Aizoaceae	<i>Zaleya galericulata subsp. galericulata</i>			C	C	2/2
plants	Aizoaceae	<i>Trianthema portulacastrum</i>	black pigweed		C	C	3/3
plants	Aizoaceae	<i>Trianthema sp. (Coorabulka R.W.Purdie 1404)</i>			C	C	2/2
plants	Amaranthaceae	<i>Ptilotus nobilis subsp. semilanatus</i>			C	C	6/6
plants	Amaranthaceae	<i>Gomphrena sp. (Doongmabulla E.J.Thompson+ GAL137)</i>	joyweed		C	C	1/1
plants	Amaranthaceae	<i>Alternanthera nodiflora</i>			C	C	6/5
plants	Amaranthaceae	<i>Amaranthus interruptus</i>			C	C	4/4
plants	Amaranthaceae	<i>Ptilotus polystachyus</i>			C	C	3/3
plants	Amaranthaceae	<i>Gomphrena</i>			C	C	1
plants	Amaranthaceae	<i>Amaranthus viridis</i>	green amaranth		C	C	2/2
plants	Amaranthaceae	<i>Amaranthus</i>			C	C	1/1
plants	Amaranthaceae	<i>Gomphrena lanata</i>			C	C	5/5
plants	Amaranthaceae	<i>Gomphrena humilis</i>			C	C	2/2

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	Amaranthaceae	<i>Nyssanthes erecta</i>			C		4/4
plants	Amaranthaceae	<i>Ptilotus obovatus</i>			C		1/1
plants	Amaranthaceae	<i>Achyranthes aspera</i>			C		1
plants	Amaranthaceae	<i>Alternanthera angustifolia</i>			C		3/2
plants	Amaranthaceae	<i>Alternanthera denticulata</i> var. <i>micrantha</i>			C		4/4
plants	Amaranthaceae	<i>Alternanthera nana</i>	hairy joyweed		C		2/2
plants	Amaranthaceae	<i>Alternanthera pungens</i>	khaki weed	Y			2/2
plants	Apiaceae	<i>Eryngium plantagineum</i>	long eryngium		C		3/2
plants	Apiaceae	<i>Eryngium fontanum</i>			E	E	6/4
plants	Apiaceae	<i>Centella asiatica</i>			C		2
plants	Apiaceae	<i>Platysace valida</i>			C		1/1
plants	Apocynaceae	<i>Marsdenia viridiflora</i> subsp. <i>viridiflora</i>			C		1/1
plants	Apocynaceae	<i>Wrightia pubescens</i> subsp. <i>penicillata</i>			C		1/1
plants	Apocynaceae	<i>Cynanchum viminale</i> subsp. <i>brunonianum</i>			C		1/1
plants	Apocynaceae	<i>Parsonsia eucalyptophylla</i>	gargaloo		C		3/3
plants	Apocynaceae	<i>Parsonsia lanceolata</i>	northern silkpod		C		8/6
plants	Apocynaceae	<i>Marsdenia pleiadenia</i>			C		1/1
plants	Apocynaceae	<i>Marsdenia microlepis</i>			C		1/1
plants	Apocynaceae	<i>Parsonsia straminea</i>	monkey rope		C		1/1
plants	Apocynaceae	<i>Alstonia constricta</i>	bitterbark		C		3/2
plants	Apocynaceae	<i>Secamone elliptica</i>			C		2/2
plants	Apocynaceae	<i>Carissa lanceolata</i>			C		6/3
plants	Apocynaceae	<i>Wrightia saligna</i>			C		1/1
plants	Apocynaceae	<i>Tylophora erecta</i>			C		1/1
plants	Apocynaceae	<i>Carissa ovata</i>	currantbush		C		16/2
plants	Apocynaceae	<i>Marsdenia</i>			C		1
plants	Apocynaceae	<i>Hydrocotyle dippleura</i>			V		3/2
plants	Araliaceae	<i>Astrotricha intermedia</i>			C		1/1
plants	Asteraceae	<i>Emilia sonchifolia</i> var. <i>sonchifolia</i>		Y			1/1
plants	Asteraceae	<i>Peripleura hispidula</i> var. <i>hispidula</i>			C		3/3
plants	Asteraceae	<i>Acmella grandiflora</i> var. <i>brachygllossa</i>			C		3/2
plants	Asteraceae	<i>Pterocaulon serrulatum</i> var. <i>serrulatum</i>			C		3/3
plants	Asteraceae	<i>Verbesina encelioides</i> var. <i>encelioides</i>		Y			1/1
plants	Asteraceae	<i>Centipeda</i>			C		1/1
plants	Asteraceae	Asteraceae			C		4
plants	Asteraceae	<i>Coronidium</i>			C		1/1
plants	Asteraceae	<i>Blumea tenella</i>			C		1/1
plants	Asteraceae	<i>Pluchea dentex</i>	bowl daisy		C		4/4
plants	Asteraceae	<i>Calotis cuneata</i>			C		2/2
plants	Asteraceae	<i>Blumea axillaris</i>			C		2/1
plants	Asteraceae	<i>Blumea saxatilis</i>			C		1/1
plants	Asteraceae	<i>Pluchea xanthina</i>			C		2/2
plants	Asteraceae	<i>Campylocarpha barbata</i>			C		3/3
plants	Asteraceae	<i>Eclipta prostrata</i>	white eclipta	Y			3/3
plants	Asteraceae	<i>Olearia xerophila</i>			C		1/1
plants	Asteraceae	<i>Peripleura scabra</i>			C		4/4

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	Asteraceae	<i>Sonchus oleraceus</i>	common sowthistle	Y			1/1
plants	Asteraceae	<i>Tridax procumbens</i>	tridax daisy	Y			2/2
plants	Asteraceae	<i>Blumea benthamiana</i>			C		1/1
plants	Asteraceae	<i>Calotis squamigera</i>			C		2/2
plants	Asteraceae	<i>Coronidium lanosum</i>			C		2/2
plants	Asteraceae	<i>Emilia sonchifolia</i>		Y			1
plants	Asteraceae	<i>Peripleura obovata</i>			C		2/2
plants	Asteraceae	<i>Minuria integerrima</i>	smooth minuria		C		1/1
plants	Asteraceae	<i>Rutidosia leucantha</i>			C		1/1
plants	Asteraceae	<i>Streptoglossa odora</i>			C		3/3
plants	Asteraceae	<i>Centipeda nidiformis</i>			C		1/1
plants	Asteraceae	<i>Pluchea baccharoides</i>	narrow-leaved plains bush		C		4/4
plants	Asteraceae	<i>Pluchea rubelliflora</i>			C		6/6
plants	Asteraceae	<i>Pterocaulon ciliosum</i>			C		1/1
plants	Asteraceae	<i>Pterocaulon redolens</i>			C		1/1
plants	Asteraceae	<i>Senecio depressicola</i>			C		1/1
plants	Asteraceae	<i>Sphaeranthus indicus</i>			C		7/7
plants	Asteraceae	<i>Vittadinia pustulata</i>			C		2/2
plants	Asteraceae	<i>Xanthium occidentale</i>		Y			3/3
plants	Asteraceae	<i>Calotis xanthosioidea</i>			C		3/3
plants	Asteraceae	<i>Cyanthillium cinereum</i>			C		1/1
plants	Asteraceae	<i>Sphaeromorphaea major</i>			NT		2/2
plants	Asteraceae	<i>Coronidium lanuginosum</i>			C		2/2
plants	Asteraceae	<i>Pterocaulon serrulatum</i>			C		2
plants	Asteraceae	<i>Acanthospermum hispidum</i>	star burr	Y			3/3
plants	Asteraceae	<i>Iotasperra australiense</i>			C		1/1
plants	Asteraceae	<i>Pterocaulon sphacelatum</i>	applebush		C		3/3
plants	Asteraceae	<i>Brachyscome chrysoglossa</i>			C		1/1
plants	Asteraceae	<i>Parthenium hysterophorus</i>	parthenium weed	Y			17/17
plants	Asteraceae	<i>Streptoglossa adscendens</i>	desert daisy		C		7/7
plants	Asteraceae	<i>Symphotrichum subulatum</i>		Y			4/2
plants	Asteraceae	<i>Chrysocephalum apiculatum</i>	yellow buttons		C		5/5
plants	Asteraceae	<i>Sphaeromorphaea australis</i>			C		3/2
plants	Asteraceae	<i>Sphaeromorphaea subintegra</i>			C		2/2
plants	Asteraceae	<i>Pluchea ferdinandi-muelleri</i>			C		1/1
plants	Asteraceae	<i>Apowollastonia spilanthoides</i>			C		3/3
plants	Asteraceae	<i>Centipeda minima subsp. minima</i>			C		3/3
plants	Asteraceae	<i>Peripleura hispidula var. setosa</i>			C		2/2
plants	Bignoniaceae	<i>Pandorea pandorana</i>	wonga vine		C		3/2
plants	Boraginaceae	<i>Heliotropium indicum</i>		Y			1/1
plants	Boraginaceae	<i>Trichodesma zeylanicum var. zeylanicum</i>			C		2/2
plants	Boraginaceae	<i>Heliotropium cunninghamii</i>			C		2/2
plants	Boraginaceae	<i>Heliotropium peninsulare</i>			C		1/1
plants	Boraginaceae	<i>Heliotropium ovalifolium</i>			C		2/2
plants	Boraginaceae	<i>Heliotropium geocharis</i>			C		1/1
plants	Boraginaceae	<i>Heliotropium consimile</i>			C		2/2

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	higher dicots	Boraginaceae					
plants	higher dicots	<i>Heliotropium moorei</i>			C		1/1
plants	higher dicots	Boraginaceae	weeping koda		C		2/2
plants	higher dicots	<i>Ehretia membranifolia</i>			C		1/1
plants	higher dicots	Brassicaceae			C		12/12
plants	higher dicots	<i>Rorippa dietrichiana</i>			C		4/4
plants	higher dicots	Byttneriaceae			C		3/3
plants	higher dicots	<i>Seringia collina</i>			C		1/1
plants	higher dicots	Byttneriaceae			C		1/1
plants	higher dicots	<i>Seringia nephrosperma</i>			C		8/8
plants	higher dicots	Byttneriaceae		Y			5
plants	higher dicots	<i>Seringia hookeriana</i>					5/1
plants	higher dicots	Melochia pyramidata					1
plants	higher dicots	Byttneriaceae		Y			2/2
plants	higher dicots	<i>Seringia corollata</i>			C		2/2
plants	higher dicots	Byttneriaceae		Y			2
plants	higher dicots	<i>Waltheria indica</i>			C		3/3
plants	higher dicots	Cactaceae	velvety tree pear		C		5/5
plants	higher dicots	Cactaceae		Y			5/5
plants	higher dicots	<i>Opuntia tomentosa</i>			C		1/1
plants	higher dicots	Cactaceae		Y			3/3
plants	higher dicots	<i>Harrisia martinii</i>			C		2/2
plants	higher dicots	Cactaceae			C		1/1
plants	higher dicots	<i>Opuntia</i>			C		1/1
plants	higher dicots	Caesalpinaceae			C		6/6
plants	higher dicots	<i>Senna artemisioides subsp. coriacea</i>			C		2/2
plants	higher dicots	Caesalpinaceae			C		2
plants	higher dicots	<i>Senna artemisioides subsp. sturtii</i>			C		3/3
plants	higher dicots	Caesalpinaceae			C		5/5
plants	higher dicots	<i>Chamaecrista absus var. absus</i>			C		5/5
plants	higher dicots	Caesalpinaceae			C		1/1
plants	higher dicots	<i>Petalostylis labicheoides</i>			C		1/1
plants	higher dicots	Caesalpinaceae			C		1/1
plants	higher dicots	<i>Chamaecrista longipes</i>			C		3/3
plants	higher dicots	Caesalpinaceae			C		2/2
plants	higher dicots	<i>Senna</i>			C		1/1
plants	higher dicots	Caesalpinaceae			C		1/1
plants	higher dicots	<i>Senna costata</i>			C		1/1
plants	higher dicots	Caesalpinaceae			C		1/1
plants	higher dicots	<i>Cassia brewsteri</i>			C		1/1
plants	higher dicots	Caesalpinaceae			C		1/1
plants	higher dicots	<i>Senna circinnata</i>			C		1/1
plants	higher dicots	Caesalpinaceae			C		1/1
plants	higher dicots	<i>Senna magnifolia</i>			C		1/1
plants	higher dicots	Caesalpinaceae		Y			1/1
plants	higher dicots	<i>Tamarindus indica</i>			C		3/3
plants	higher dicots	Caesalpinaceae			C		2/2
plants	higher dicots	<i>Labichea rupestris</i>			C		2/2
plants	higher dicots	Caesalpinaceae			C		1/1
plants	higher dicots	<i>Senna gaudichaudii</i>			C		1/1
plants	higher dicots	Caesalpinaceae		Y			1/1
plants	higher dicots	<i>Senna occidentalis</i>	coffee senna		C		5/2
plants	higher dicots	Caesalpinaceae			C		1
plants	higher dicots	<i>Senna planticola</i>	Queensland ebony		C		1
plants	higher dicots	Caesalpinaceae			C		13/3
plants	higher dicots	<i>Lysiphyllum hookeri</i>			C		3/3
plants	higher dicots	Caesalpinaceae			C		1/1
plants	higher dicots	<i>Senna artemisioides</i>			C		1/1
plants	higher dicots	Caesalpinaceae			C		5/5
plants	higher dicots	<i>Senna coronilloides</i>			C		4/2
plants	higher dicots	Caesalpinaceae			C		2/2
plants	higher dicots	<i>Chamaecrista symonii</i>			C		1/1
plants	higher dicots	Caesalpinaceae			C		2/2
plants	higher dicots	<i>Lysiphyllum carronii</i>			C		1/1
plants	higher dicots	Caesalpinaceae			C		1/1
plants	higher dicots	<i>Senna artemisioides subsp. filifolia</i>			C		5/5
plants	higher dicots	Caesalpinaceae			C		4/2
plants	higher dicots	<i>Chamaecrista concinna</i>			C		2/2
plants	higher dicots	Caesalpinaceae			C		1/1
plants	higher dicots	<i>Senna artemisioides subsp. oligophylla</i>			C		1/1
plants	higher dicots	Caesalpinaceae			C		5/5
plants	higher dicots	<i>Senna artemisioides subsp. zygophylla</i>			C		4/2
plants	higher dicots	Campanulaceae		Y			2/2
plants	higher dicots	<i>Isotoma sp. (Myross R.J.Fensham 3883)</i>			C		1/1
plants	higher dicots	Campanulaceae			C		2/2
plants	higher dicots	<i>Wahlenbergia tumidiflucta</i>			C		1/1
plants	higher dicots	Campanulaceae			C		2/2
plants	higher dicots	<i>Wahlenbergia graniticola</i>	granite bluebell		C		2/2
plants	higher dicots	Capparaceae			C		8/3
plants	higher dicots	<i>Capparis mitchellii</i>			C		11/2
plants	higher dicots	Capparaceae	broom bush		C		2/2
plants	higher dicots	<i>Apophyllum anomalum</i>			C		4/4
plants	higher dicots	Capparaceae	nipan		C		1/1
plants	higher dicots	<i>Capparis lasiantha</i>			C		1/1
plants	higher dicots	Capparaceae			C		1/1
plants	higher dicots	<i>Capparis canescens</i>			C		1/1
plants	higher dicots	Capparaceae			C		1/1
plants	higher dicots	<i>Capparis umbonata</i>			C		1/1
plants	higher dicots	Caryophyllaceae			C		1/1
plants	higher dicots	Caryophyllaceae			C		1/1
plants	higher dicots	<i>Polycarpaea corymbosa</i>			C		1/1
plants	higher dicots	Caryophyllaceae			C		1/1
plants	higher dicots	<i>Polycarpaea multicaulis</i>			C		1/1

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	Caryophyllaceae	<i>Polycarpaea spirostylis</i> subsp. <i>compacta</i>		C			2/2
plants	Caryophyllaceae	<i>Polycarpaea corymbosa</i> var. <i>minor</i>		C			2/1
plants	Caryophyllaceae	<i>Polycarpaea spirostylis</i>		C			3/3
plants	Casuarinaceae	<i>Casuarina cristata</i>	belah	C			1/1
plants	Celastraceae	<i>Denhamia cunninghamii</i>		C			3/3
plants	Celastraceae	<i>Denhamia oleaster</i>		C			2/1
plants	Celastraceae	<i>Denhamia</i> sp. (Mt Coolon D.Corr PA409)		C			1/1
plants	Chenopodiaceae	<i>Einadia nutans</i> subsp. <i>linifolia</i>		C			2/2
plants	Chenopodiaceae	<i>Enchylaena tomentosa</i> var. <i>glabra</i>		C			2/2
plants	Chenopodiaceae	<i>Atriplex lindleyi</i> subsp. <i>lindleyi</i>		C			2/2
plants	Chenopodiaceae	<i>Sclerolaena bicornis</i> var. <i>horrida</i>		C			6/6
plants	Chenopodiaceae	<i>Sclerolaena bicornis</i> var. <i>bicornis</i>		C			2/2
plants	Chenopodiaceae	<i>Sclerolaena muricata</i> var. <i>muricata</i>		C			2/2
plants	Chenopodiaceae	<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>		C			4/4
plants	Chenopodiaceae	<i>Dissocarpus biflorus</i> var. <i>cephalocarpus</i>		C			1/1
plants	Chenopodiaceae	<i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>		C			4/4
plants	Chenopodiaceae	<i>Dysphania glomulifera</i> subsp. <i>glomulifera</i>		C			3/3
plants	Chenopodiaceae	<i>Tecticornia pergranulata</i> subsp. <i>divaricata</i>		C			1/1
plants	Chenopodiaceae	<i>Dissocarpus</i> sp. (Doongmabulla E.J.Thompson+ GAL21)		C			4/4
plants	Chenopodiaceae	<i>Atriplex</i> sp. (Doongmabulla Homestead E.J.Thompson+ GAL20)		C			3/3
plants	Chenopodiaceae	<i>Maireana</i>		C			1
plants	Chenopodiaceae	<i>Sclerolaena</i>		C			1/1
plants	Chenopodiaceae	<i>Einadia hastata</i>		C			1/1
plants	Chenopodiaceae	<i>Maireana georgei</i>		C			1/1
plants	Chenopodiaceae	<i>Maireana villosa</i>		C			6/6
plants	Chenopodiaceae	<i>Atriplex lindleyi</i>		C			2/2
plants	Chenopodiaceae	<i>Atriplex muelleri</i>	lagoon saltbush	C			2/2
plants	Chenopodiaceae	<i>Eremophea spinosa</i>		C			1/1
plants	Chenopodiaceae	<i>Salsola australis</i>		C			4/3
plants	Chenopodiaceae	<i>Dysphania carinata</i>		C			1/1
plants	Chenopodiaceae	<i>Sclerolaena glabra</i>		C			4/4
plants	Chenopodiaceae	<i>Tecticornia indica</i>		C			1/1
plants	Chenopodiaceae	<i>Rhagodia spinescens</i>	thorny saltbush	C			2/2
plants	Chenopodiaceae	<i>Sclerolaena birchii</i>	galvanised burr	C			1/1
plants	Chenopodiaceae	<i>Enchylaena tomentosa</i>		C			1/1
plants	Chenopodiaceae	<i>Maireana microphylla</i>		C			5/1
plants	Chenopodiaceae	<i>Sclerolaena bicornis</i>		C			7/4
plants	Chenopodiaceae	<i>Sclerolaena muricata</i>		C			1/1
plants	Chenopodiaceae	<i>Sclerolaena ramulosa</i>		C			1/1
plants	Chenopodiaceae	<i>Chenopodium auricomum</i>		C			12/12
plants	Chenopodiaceae	<i>Dissocarpus paradoxus</i>	cannonball burr	C			4/4
plants	Chenopodiaceae	<i>Sclerolaena calcarata</i>	red burr	C			1/1
plants	Chenopodiaceae	<i>Sclerolaena convexula</i>		C			2/2
plants	Chenopodiaceae	<i>Sclerolaena diacantha</i>	grey copper burr	C			2/2
plants	Chenopodiaceae	<i>Sclerolaena tricuspis</i>	giant red burr	C			4/4
plants	Chenopodiaceae			C			5/5

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plants	Euphorbiaceae	<i>Acalypha eremorum</i>	soft acalypha		C		6/5
plants	Euphorbiaceae	<i>Euphorbia stevenii</i>	bottle tree spurge		C		3/3
plants	Euphorbiaceae	<i>Croton pheballoides</i>	narrow-leaved croton		C		6/5
plants	Euphorbiaceae	<i>Euphorbia coghlanii</i>			C		2/2
plants	Euphorbiaceae	<i>Euphorbia drummondii</i>			C		3/3
plants	Euphorbiaceae	<i>Euphorbia dallachyana</i>			C		4/4
plants	Euphorbiaceae	<i>Microstachys chamaelea</i>			C		2/2
plants	Euphorbiaceae	<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>			C		1/1
plants	Euphorbiaceae	<i>Euphorbia mitchelliana</i> var. <i>mitchelliana</i>		Y	C		2/2
plants	Euphorbiaceae	<i>Euphorbia hirta</i>			C		2/2
plants	Euphorbiaceae	<i>Beyeria viscosa</i>			C		1/1
plants	Euphorbiaceae	Euphorbiaceae			C		1
plants	Euphorbiaceae	<i>Euphorbia</i>			C		1
plants	Fabaceae	<i>Zornia dyctiocarpa</i>			C		1/1
plants	Fabaceae	<i>Aeschynomene indica</i>	budda pea		C		4/3
plants	Fabaceae	<i>Cajanus acutifolius</i>			C		3/3
plants	Fabaceae	<i>Desmodium filiforme</i>			C		3/3
plants	Fabaceae	<i>Galactia tenuiflora</i>			C		1/1
plants	Fabaceae	<i>Indigofera triflora</i>			C		3/3
plants	Fabaceae	<i>Leptosema chapmanii</i>			C		3/3
plants	Fabaceae	<i>Stylosanthes scabra</i>		Y	C		1/1
plants	Fabaceae	<i>Tephrosia barbatala</i>			C		2/2
plants	Fabaceae	<i>Crotalaria verrucosa</i>			C		2/2
plants	Fabaceae	<i>Indigofera ewartiana</i>			C		1/1
plants	Fabaceae	<i>Indigofera linifolia</i>			C		1/1
plants	Fabaceae	<i>Indigofera pratensis</i>			C		3/3
plants	Fabaceae	<i>Tephrosia leptoclada</i>			C		3/3
plants	Fabaceae	<i>Uraria lagopodioides</i>			C		3/3
plants	Fabaceae	<i>Desmodium macrocarpum</i>			C		2/2
plants	Fabaceae	<i>Jacksonia ramosissima</i>			C		1/1
plants	Fabaceae	<i>Swainsona campylantha</i>			C		14/11
plants	Fabaceae	<i>Tephrosia delestangii</i>			C		3/3
plants	Fabaceae	<i>Tephrosia flagellaris</i>			C		1/1
plants	Fabaceae	<i>Crotalaria medicaginea</i>	trefoil rattlepod		C		3/3
plants	Fabaceae	<i>Indigofera haplophylla</i>			C		1/1
plants	Fabaceae	<i>Indigofera leucotricha</i>			C		1/1
plants	Fabaceae	<i>Jacksonia rhadinoclona</i>	Miles dogwood		C		1
plants	Fabaceae	<i>Leptosema oxylobioides</i>			C		3/3
plants	Fabaceae	<i>Aeschynomene brevifolia</i>			C		6/6
plants	Fabaceae	<i>Crotalaria laburnifolia</i>		Y	C		2/2
plants	Fabaceae	<i>Desmodium campylocaulon</i>			C		1/1
plants	Fabaceae	<i>Indigastrum parviflorum</i>			C		7/7
plants	Fabaceae	<i>Tephrosia astragaloides</i>			C		1/1
plants	Fabaceae	<i>Desmodium rhytidophyllum</i>			C		1/1
plants	Fabaceae	<i>Indigofera queenslandica</i>			C		2/2
plants	Fabaceae	<i>Aphyllodium biarticulatum</i>			C		2/2
plants	Fabaceae				C		4/4
plants	Fabaceae				C		1

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plants	Fabaceae	<i>Gastrolobium grandiflorum</i>			C		3/3
plants	Fabaceae	<i>Macroptilium atropurpureum</i>	siratro	Y			1/1
plants	Fabaceae	<i>Vigna vexillata</i> var. <i>youngiana</i>			C		1/1
plants	Fabaceae	<i>Galactia tenuiflora</i> var. <i>lucida</i>			C		4/3
plants	Fabaceae	<i>Tephrosia filipes</i> forma <i>vestita</i>			C		2/2
plants	Fabaceae	<i>Zornia prostrata</i> var. <i>prostrata</i>			C		1/1
plants	Fabaceae	<i>Rhynchosia minima</i> var. <i>australis</i>			C		3/3
plants	Fabaceae	<i>Tephrosia filipes</i> subsp. <i>filipes</i>			C		4/4
plants	Fabaceae	<i>Sesbania cannabina</i> var. <i>cannabina</i>			C		1/1
plants	Fabaceae	<i>Vigna vexillata</i> var. <i>angustifolia</i>			C		2/1
plants	Fabaceae	<i>Zornia dycitocarpa</i> var. <i>filifolia</i>			C		2/2
plants	Fabaceae	<i>Zornia muriculata</i> subsp. <i>angustata</i>			C		3/3
plants	Fabaceae	<i>Tephrosia brachyodon</i> var. <i>longifolia</i>			C		1/1
plants	Fabaceae	<i>Crotalaria mitchellii</i> subsp. <i>mitchellii</i>			C		1/1
plants	Fabaceae	<i>Tephrosia</i> sp. (<i>Prairie N.B.Byrnes 3945</i>)			C		2/2
plants	Fabaceae	<i>Cajanus scarabaeoides</i> var. <i>scarabaeoides</i>			C		1/1
plants	Fabaceae	<i>Crotalaria dissitiflora</i> subsp. <i>dissitiflora</i>			C		4/4
plants	Fabaceae	<i>Glycine</i> sp. (<i>Laglan Station L.S.Smith 10302</i>)			C		1/1
plants	Fabaceae	<i>Tephrosia</i> sp. (<i>Pannikan Springs A.R.Bean+ 5612</i>)			C		5/5
plants	Fabaceae	<i>Crotalaria novae-hollandiae</i> subsp. <i>novae-hollandiae</i>			C		1/1
plants	Fabaceae	<i>Tephrosia</i> sp. (<i>Lake Buchanan E.J.Thompson+ BUC2128</i>)			C		1/1
plants	Fabaceae	<i>Tephrosia astragaloides</i> var. (<i>Belyando Crossing E.J.Thompson+ 139</i>)			C		8/8
plants	Fabaceae	<i>Vigna</i>			C		1/1
plants	Fabaceae	<i>Zornia</i>			C		2/1
plants	Fabaceae	<i>Glycine</i>			C		4/3
plants	Fabaceae	Fabaceae			C		1
plants	Fabaceae	<i>Galactia</i>			C		1/1
plants	Fabaceae	<i>Tephrosia</i>			C		4/2
plants	Fabaceae	<i>Crotalaria</i>			C		1
plants	Fabaceae	<i>Cullen tenax</i>	emu-foot		C		1/1
plants	Fabaceae	<i>Vigna luteola</i>	dalrymple vigna	Y			3/1
plants	Fabaceae	<i>Cullen cinereum</i>			C		1/1
plants	Fabaceae	<i>Glycine falcata</i>			C		3/3
plants	Fabaceae	<i>Zornia areolata</i>			C		3/3
plants	Fabaceae	<i>Bossiaea armitii</i>			C		1/1
plants	Fabaceae	<i>Hovea lanceolata</i>			C		1
plants	Fabaceae	<i>Hovea parvicalyx</i>			C		6/6
plants	Fabaceae	<i>Tephrosia juncea</i>			C		2/2
plants	Fabaceae	<i>Tephrosia supina</i>			C		1/1
plants	Fabaceae	<i>Rhynchosia minima</i>			C		1/1
plants	Fabaceae	<i>Swainsona affinis</i>			C		2/2
plants	Fabaceae	<i>Zornia adenophora</i>			C		3/3
plants	Fabaceae	<i>Zornia floribunda</i>			C		3/3
plants	Fabaceae	<i>Zornia muriculata</i>			C		3/3
plants	Fabaceae	<i>Cajanus marmoratus</i>			C		1/1

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plants	Fabaceae	<i>Desmodium muelleri</i>			C		2/2
plants	Fabaceae	<i>Glycine tomentella</i>	woolly glycine		C		6/6
plants	Fabaceae	<i>Indigofera colutea</i>	sticky indigo		C		3/3
plants	Fabaceae	<i>Indigofera linnaei</i>	Birdsville indigo		C		6/6
plants	Fabaceae	<i>Indigofera tryonii</i>			C		1/1
plants	Fabaceae	<i>Mirbelia viminialis</i>			C		8/8
plants	Fabaceae	<i>Sesbania cannabina</i>			C		2
plants	Gentianaceae	<i>Schenkia australis</i>			C		2/2
plants	Goodeniaceae	<i>Goodenia glabra</i>			C		1/1
plants	Goodeniaceae	<i>Goodenia expansa</i>			C		1/1
plants	Goodeniaceae	<i>Goodenia hirsuta</i>			C		1/1
plants	Goodeniaceae	<i>Dampiera adpressa</i>			C		1/1
plants	Goodeniaceae	<i>Goodenia bymesii</i>			C		2/2
plants	Goodeniaceae	<i>Goodenia rosulata</i>			C		4/4
plants	Goodeniaceae	<i>Goodenia viridula</i>			C		5/5
plants	Goodeniaceae	<i>Brunonia australis</i>	blue pincushion		C		1
plants	Goodeniaceae	<i>Goodenia armitiana</i>			C		2/2
plants	Goodeniaceae	<i>Goodenia splendida</i>			C		2/2
plants	Goodeniaceae	<i>Velleia macrocalyx</i>			C		1/1
plants	Goodeniaceae	<i>Velleia spathulata</i>	wild pansies		C		1/1
plants	Goodeniaceae	<i>Scaevola spinescens</i>	prickly fan flower		C		2/2
plants	Goodeniaceae	<i>Goodenia grandiflora</i>			C		1/1
plants	Goodeniaceae	<i>Goodenia fascicularis</i>			C		3/3
plants	Goodeniaceae	<i>Goodenia strangfordii</i>			C		2/2
plants	Goodeniaceae	<i>Goodenia</i>			C		1/1
plants	Haloragaceae	<i>Myriophyllum artesium</i>			E		6/3
plants	Haloragaceae	<i>Gonocarpus acanthocarpus</i>			C		1/1
plants	Haloragaceae	<i>Myriophyllum verrucosum</i>			C		1/1
plants	Lamiaceae	<i>Ocimum x africanum</i>	water milfoil	Y	C		4/4
plants	Lamiaceae	<i>Teucrium puberulum</i>			C		1/1
plants	Lamiaceae	<i>Prostanthera collina</i>			C		2/2
plants	Lamiaceae	<i>Basilicum polystachyon</i>			C		6/6
plants	Lamiaceae	<i>Teucrium integrifolium</i>			C		2/2
plants	Lamiaceae	<i>Plectranthus parviflorus</i>			C		1/1
plants	Lamiaceae	<i>Clerodendrum floribundum</i>			C		1/1
plants	Lamiaceae	<i>Prostanthera parvifolia</i>			C		8/6
plants	Lamiaceae	<i>Plectranthus intraterraneus</i>			C		1/1
plants	Lentibulariaceae	<i>Utricularia fenshamii</i>	fairy aprons		C		5/5
plants	Lentibulariaceae	<i>Utricularia dichotoma</i>	blue bladderwort		C		1
plants	Lentibulariaceae	<i>Utricularia caerulea</i>	golden bladderwort		C		6/3
plants	Lentibulariaceae	<i>Utricularia aurea</i>	floating bladderwort		C		1/1
plants	Lentibulariaceae	<i>Utricularia gibba</i>			C		3/2
plants	Loganiaceae	<i>Mitrasacme sp. (Warang M.B.Thomas 1571)</i>			C		1/1
plants	Loranthaceae	<i>Dendrophthoe glabrescens</i>			C		3/2
plants	Loranthaceae	<i>Amyema</i>			C		1
plants	Loranthaceae	<i>Amyema miquelii</i>			C		1/1

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plants	Loranthaceae	<i>Amyema quandang</i> var. <i>bancroftii</i>	broad-leaved grey mistletoe		C		4/3
plants	Loranthaceae	<i>Dendrophthoe homoplastica</i>			C		3/3
plants	Loranthaceae	<i>Amyema maidenii</i> subsp. <i>angustifolia</i>			C		1/1
plants	Loranthaceae	<i>Lystana subfalcata</i>			C		4/4
plants	Loranthaceae	<i>Amyema bifurcata</i>			C		1/1
plants	Lythraceae	<i>Rotala mexicana</i>	jerry-jerry		C		1/1
plants	Lythraceae	<i>Ammannia multiflora</i>			C		2/2
plants	Lythraceae	<i>Ammannia robertsii</i>			E		1/1
plants	Malvaceae	<i>Sida cordifolia</i>		Y			5/5
plants	Malvaceae	<i>Sida fibulifera</i>			C		6/6
plants	Malvaceae	<i>Sida goniocarpa</i>			C		1/1
plants	Malvaceae	<i>Sida trichopoda</i>			C		4/4
plants	Malvaceae	<i>Abutilon auritum</i>	Chinese lantern		C		2/2
plants	Malvaceae	<i>Hibiscus sturtii</i>			C		4/3
plants	Malvaceae	<i>Sida atherophora</i>			C		12/12
plants	Malvaceae	<i>Sida everistiana</i>			C		3/3
plants	Malvaceae	<i>Sida hackettiana</i>			C		2/2
plants	Malvaceae	<i>Hibiscus burtonii</i>			C		2/2
plants	Malvaceae	<i>Abutilon guineense</i>		Y			2/2
plants	Malvaceae	<i>Abutilon otocarpum</i>			C		4/4
plants	Malvaceae	<i>Abutilon oxycarpum</i>			C		1
plants	Malvaceae	<i>Gossypium australe</i>			C		9/9
plants	Malvaceae	<i>Herissantia crispa</i>			C		1/1
plants	Malvaceae	<i>Abutilon malvifolium</i>	bastard marshmallow		C		1/1
plants	Malvaceae	<i>Hibiscus leptocladus</i>			C		4/4
plants	Malvaceae	<i>Hibiscus meraukensis</i>	Merauke hibiscus		C		2/2
plants	Malvaceae	<i>Hibiscus verdcourtii</i>			C		1/1
plants	Malvaceae	<i>Abelmoschus ficulneus</i>	native rosella		C		2/2
plants	Malvaceae	<i>Abutilon leucopetalum</i>			C		2/2
plants	Malvaceae	<i>Malvastrum americanum</i>		Y			4
plants	Malvaceae	<i>Hibiscus krichauffianus</i>			C		6/6
plants	Malvaceae	<i>Sida aprica</i> var. <i>aprica</i>			C		8/8
plants	Malvaceae	<i>Hibiscus brachysiphonius</i>			C		3/3
plants	Malvaceae	<i>Sida aprica</i> var. <i>solanacea</i>			C		2/2
plants	Malvaceae	<i>Hibiscus sturtii</i> var. <i>sturtii</i>			C		1/1
plants	Malvaceae	<i>Sida rohlenae</i> subsp. <i>rohlenae</i>			C		1/1
plants	Malvaceae	<i>Abutilon fraseri</i> subsp. <i>fraseri</i>			C		10/10
plants	Malvaceae	<i>Abutilon oxycarpum</i> var. <i>incanum</i>			C		1/1
plants	Malvaceae	<i>Abutilon oxycarpum</i> var. <i>subsagittatum</i>			C		1/1
plants	Malvaceae	<i>Malvastrum americanum</i> var. <i>americanum</i>		Y			3/3
plants	Malvaceae	<i>Sida</i> sp. (Aramac E.J.Thompson+ JER192)			C		3/3
plants	Malvaceae	<i>Hibiscus</i> sp. (Emerald S.L.Everist 2124)			C		5/5
plants	Malvaceae	<i>Sida</i> sp. (Laglan Station L.S.Smith 10325)			C		1/1
plants	Malvaceae	<i>Sida</i> sp. (Musselbrook M.B.Thomas+ MRS437)			C		5/5
plants	Malvaceae	<i>Sida</i> sp. (Charters Towers E.J.Thompson+ CHA456)			C		2/2
plants	Malvaceae	<i>Malvastrum coromandelianum</i> subsp. <i>coromandelianum</i>		Y			2/2

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	Malvaceae	<i>Sida</i>			C		9
plants	Malvaceae	<i>Abutilon</i>			C		1
plants	Malvaceae	<i>Hibiscus</i>			C		1
plants	Malvaceae	Malvaceae			C		3
plants	Malvaceae	<i>Sida acuta</i>	spinyhead sida	Y			1/1
plants	Malvaceae	<i>Sida aprica</i>			C		1/1
plants	Malvaceae	<i>Sida laevis</i>			C		2/2
plants	Malvaceae	<i>Sida spinosa</i>	spiny sida	Y			2/2
plants	Malvaceae	<i>Sida macropoda</i>			C		1/1
plants	Malvaceae	<i>Sida pleiantha</i>			C		1/1
plants	Malvaceae	<i>Abutilon nobile</i>			C		1/1
plants	Malvaceae	<i>Sida brachypoda</i>			C		5/5
plants	Meliaceae	<i>Owenia acidula</i>	emu apple		C		2/1
plants	Menyanthaceae	<i>Nymphoides crenata</i>	wavy marshwort		C		4/4
plants	Menyanthaceae	<i>Nymphoides indica</i>	water snowflake		C		1/1
plants	Mimosaceae	<i>Acacia holosericea</i>			C		4/4
plants	Mimosaceae	<i>Acacia cambagei</i>	gidgee		C		8/4
plants	Mimosaceae	<i>Acacia faccata</i>			C		5/4
plants	Mimosaceae	<i>Acacia faucium</i>			C		1/1
plants	Mimosaceae	<i>Acacia armitii</i>			C		1/1
plants	Mimosaceae	<i>Acacia hemsleyi</i>			NT		1/1
plants	Mimosaceae	<i>Acacia oswaldii</i>			C		1/1
plants	Mimosaceae	<i>Acacia salicina</i>	miljee		C		2/2
plants	Mimosaceae	<i>Acacia shirleyi</i>	doolan		C		9/7
plants	Mimosaceae	<i>Acacia shirleyi</i>	lancewood		C		8/7
plants	Mimosaceae	<i>Acacia tephrina</i>			C		1/1
plants	Mimosaceae	<i>Acacia torulosa</i>			C		2/2
plants	Mimosaceae	<i>Acacia adsurgens</i>			C		1/1
plants	Mimosaceae	<i>Acacia fodinalis</i>			C		3/3
plants	Mimosaceae	<i>Acacia galioides</i>			C		10/10
plants	Mimosaceae	<i>Acacia gonoclada</i>			C		4/4
plants	Mimosaceae	<i>Acacia lazaridis</i>			C		11/11
plants	Mimosaceae	<i>Acacia ramiflora</i>			C		3/3
plants	Mimosaceae	<i>Acacia catenulata</i>	bendee		C		5/4
plants	Mimosaceae	<i>Acacia flavescens</i>	toothed wattle		C		1/1
plants	Mimosaceae	<i>Acacia hyaloneura</i>			C		9/9
plants	Mimosaceae	<i>Acacia ixiophylla</i>			C		2/2
plants	Mimosaceae	<i>Acacia melleodora</i>			C		8/8
plants	Mimosaceae	<i>Acacia orthocarpa</i>			C		2/2
plants	Mimosaceae	<i>Acacia platycarpa</i>			C		2/2
plants	Mimosaceae	<i>Acacia rhodoxylon</i>	ringy rosewood		C		3/3
plants	Mimosaceae	<i>Acacia tenuissima</i>			C		14/12
plants	Mimosaceae	<i>Acacia harpophylla</i>	brigalow		C		12/5
plants	Mimosaceae	<i>Acacia cowleana</i>			C		2/2
plants	Mimosaceae	<i>Acacia sparsiflora</i>			C		7/7
plants	Mimosaceae	<i>Acacia stenophylla</i>	belalie		C		5/3
plants	Mimosaceae	<i>Acacia stipuligera</i>			C		4/4

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	Mimosaceae	<i>Acacia dietrichiana</i>			C		3/2
plants	Mimosaceae	<i>Acacia leptostachya</i>	Townsville wattle		C		11/9
plants	Mimosaceae	<i>Acacia longispicata</i>			C		4/4
plants	Mimosaceae	<i>Acacia multisiliqua</i>			C		10/8
plants	Mimosaceae	<i>Acacia sericophylla</i>			C		7/7
plants	Mimosaceae	<i>Neptunia monosperma</i>			C		2/2
plants	Mimosaceae	<i>Vachellia bidwillii</i>			C		1/1
plants	Mimosaceae	<i>Acacia argyrodendron</i>			C		8/6
plants	Mimosaceae	<i>Acacia bancroftiorum</i>			C		1
plants	Mimosaceae	<i>Vachellia farnesiana</i>		Y			3/2
plants	Mimosaceae	<i>Neptunia dimorphantha</i>			C		2/2
plants	Mimosaceae	<i>Acacia colei var. colei</i>			C		2/2
plants	Mimosaceae	<i>Archidendropsis basalitica</i>	red lancewood		C		5/2
plants	Mimosaceae	<i>Acacia crassa subsp. crassa</i>			C		1/1
plants	Mimosaceae	<i>Acacia excelsa subsp. excelsa</i>			C		6/6
plants	Mimosaceae	<i>Acacia julifera subsp. julifera</i>			C		2/2
plants	Mimosaceae	<i>Neptunia gracilis forma gracilis</i>			C		5/3
plants	Mimosaceae	<i>Acacia victoriae subsp. victoriae</i>			C		1/1
plants	Mimosaceae	<i>Acacia julifera subsp. curvinervia</i>			C		3/3
plants	Mimosaceae	<i>Acacia sp. (Ronlow Park E.J.Thompson+ 61)</i>			C		2/2
plants	Mimosaceae	<i>Acacia</i>			C		6/1
plants	Mimosaceae	<i>Acacia decora</i>	pretty wattle		C		1/1
plants	Mimosaceae	<i>Acacia simsii</i>			C		1/1
plants	Molluginaceae	<i>Glinus oppositifolius</i>			C		4/4
plants	Molluginaceae	<i>Mollugo verticillata</i>		Y			1/1
plants	Molluginaceae	<i>Hypericis cerviana</i>			C		1/1
plants	Molluginaceae	<i>Glinus lotoides</i>	hairy carpet weed		C		3/3
plants	Moraceae	<i>Ficus opposita</i>			C		1/1
plants	Myrtaceae	<i>Corymbia lamprophylla</i>			C		14/9
plants	Myrtaceae	<i>Corymbia leichhardtii</i>	rustyjacket		C		7/7
plants	Myrtaceae	<i>Eucalyptus cambageana</i>	Dawson gum		C		9/7
plants	Myrtaceae	<i>Eucalyptus persistens</i>			C		24/23
plants	Myrtaceae	<i>Eucalyptus thozetiana</i>			C		8/7
plants	Myrtaceae	<i>Melaleuca fluviatilis</i>			C		3/2
plants	Myrtaceae	<i>Melaleuca leucadendra</i>	broad-leaved tea-tree		C		7/3
plants	Myrtaceae	<i>Melaleuca tamariscina</i>			C		6/5
plants	Myrtaceae	<i>Ochrosperma adpressum</i>			C		1/1
plants	Myrtaceae	<i>Corymbia erythrophloia</i>	variable-barked bloodwood		C		5/3
plants	Myrtaceae	<i>Eucalyptus xanthoclada</i>	yellow-branched ironbark		C		4/4
plants	Myrtaceae	<i>Melaleuca linariifolia</i>	snow-in summer		C		1
plants	Myrtaceae	<i>Thryptomene parviflora</i>			C		3/3
plants	Myrtaceae	<i>Eucalyptus melanophloia</i>			C		3
plants	Myrtaceae	<i>Leptospermum lamellatum</i>			C		1/1
plants	Myrtaceae	<i>Lithomyrtus microphylla</i>			C		5/5
plants	Myrtaceae	<i>Melaleuca trichostachya</i>			C		4/4
plants	Myrtaceae	<i>Eucalyptus camaldulensis</i>			C		4/1

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	Myrtaceae	<i>Eucalyptus drepanophylla</i>		C			24/24
plants	Myrtaceae	<i>Corymbia blakei</i> subsp. <i>blakei</i>		C			1/1
plants	Myrtaceae	<i>Corymbia brachycarpa</i> x <i>C.plena</i>		C			1/1
plants	Myrtaceae	<i>Eucalyptus brownii</i> - <i>E.populnea</i>		C			1/1
plants	Myrtaceae	<i>Eucalyptus melanophloia</i> - <i>E.whitei</i>		C			2/2
plants	Myrtaceae	<i>Eucalyptus melanophloia</i> x <i>E.whitei</i>		C			1/1
plants	Myrtaceae	<i>Corymbia setosa</i> subsp. <i>pedicellaris</i>		C			6/6
plants	Myrtaceae	<i>Eucalyptus camaldulensis</i> subsp. <i>acuta</i>		C			7/7
plants	Myrtaceae	<i>Eucalyptus socialis</i> subsp. <i>eucentrica</i>		C			4/4
plants	Myrtaceae	<i>Eucalyptus melanophloia</i> subsp. <i>melanophloia</i>		C			12/12
plants	Myrtaceae	<i>Corymbia aparrerinja</i> - <i>C.dallachiana</i> (<i>Benth.</i>)		C			1/1
plants	Myrtaceae	<i>Eucalyptus</i> sp. (<i>Mt Hope Homestead E.J.Thompson+ BUC175</i>)		C			4/4
plants	Myrtaceae	<i>Corymbia plena</i>		C			2/2
plants	Myrtaceae	<i>Corymbia setosa</i>		C			3
plants	Myrtaceae	<i>Corymbia dimorpha</i>		C			1/1
plants	Myrtaceae	<i>Eucalyptus crebra</i>	narrow-leaved red ironbark	C			7/5
plants	Myrtaceae	<i>Eucalyptus whitei</i>	White's ironbark	C			5/4
plants	Myrtaceae	<i>Melaleuca nervosa</i>		C			5/2
plants	Myrtaceae	<i>Calytrix microcoma</i>		C			4/4
plants	Myrtaceae	<i>Eucalyptus brownii</i>	Reid River box	C			13/7
plants	Myrtaceae	<i>Eucalyptus exserta</i>	Queensland peppermint	C			1/1
plants	Myrtaceae	<i>Eucalyptus similis</i>	Queensland yellowjacket	C			3/2
plants	Myrtaceae	<i>Melaleuca uncinata</i>		C			1/1
plants	Myrtaceae	<i>Corymbia terminalis</i>		C			2/2
plants	Myrtaceae	<i>Eucalyptus coolabah</i>	coolabah	C			8/3
plants	Myrtaceae	<i>Eucalyptus populnea</i>	poplar box	C			5/2
plants	Myrtaceae	<i>Corymbia brachycarpa</i>		C			1/1
plants	Myrtaceae	<i>Corymbia dallachiana</i>		C			8/1
plants	Myrtaceae	<i>Corymbia tessellaris</i>	Moreton Bay ash	C			2
plants	Myrtaceae	<i>Melaleuca chisholmii</i>		C			2/2
plants	Myrtaceae	<i>Melaleuca pallescens</i>		C			4/4
plants	Myrtaceae	<i>Micromyrtus gracilis</i>		C			1/1
plants	Myrtaceae	<i>Corymbia clarksoniana</i>		C			10/9
plants	Nyctaginaceae	<i>Boerhavia pubescens</i>		C			1/1
plants	Nyctaginaceae	<i>Boerhavia</i> sp. (<i>St George A.Hill AQ399299</i>)		C			1/1
plants	Oleaceae	<i>Ximenea americana</i>		C			2/2
plants	Oleaceae	<i>Jasminum didymum</i>		C			4
plants	Oleaceae	<i>Jasminum didymum</i> subsp. <i>racemosum</i>		C			2/2
plants	Oleaceae	<i>Notelaea microcarpa</i>		C			2/2
plants	Oleaceae	<i>Ludwigia octovalvis</i>	willow primrose	C			6/3
plants	Onagraceae	<i>Ludwigia peploides</i> subsp. <i>montevidensis</i>		C			3/1
plants	Onagraceae	<i>Buchnera linearis</i>		C			4/4
plants	Orobanchaceae	<i>Buchnera ramosissima</i>		C			2/2
plants	Orobanchaceae	<i>Oxalis corniculata</i>		C	Y		1/1
plants	Oxalidaceae	<i>Oxalis chinoides</i>		C			1/1

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	Passifloraceae	<i>Passiflora foetida</i>		Y			1/1
plants	Passifloraceae	<i>Passiflora aurantia</i> var. <i>aurantia</i>			C		1/1
plants	Pedaliaceae	<i>Josephinia eugeniae</i>	josephinia burr		C		1/1
plants	Pentapetaceae	<i>Melhania oblongifolia</i>			C		3/3
plants	Pentapetaceae	<i>Melhania ovata</i>			C		2/2
plants	Phyllanthaceae	<i>Phyllanthus maderaspatensis</i> var. <i>maderaspatensis</i>			C		2/2
plants	Phyllanthaceae	<i>Phyllanthus</i> sp. (Pentland R.J.Cumming 9742)			C		5/5
plants	Phyllanthaceae	<i>Phyllanthus</i> sp. (Myra Vale J.J.Bruhl+ 1810)			C		1/1
plants	Phyllanthaceae	<i>Sauropus elachophyllus</i> var. <i>elachophyllus</i>			C		1/1
plants	Phyllanthaceae	<i>Phyllanthus maderaspatensis</i>			C		4/4
plants	Phyllanthaceae	<i>Synostemon rhytidospermus</i>			C		2/2
plants	Phyllanthaceae	<i>Phyllanthus carpentariae</i>			C		3/3
plants	Phyllanthaceae	<i>Phyllanthus fuernrohrii</i>			C		2/1
plants	Phyllanthaceae	<i>Poranthera microphylla</i>	small poranthera		C		2/2
plants	Phyllanthaceae	<i>Phyllanthus hebecarpus</i>			C		5/5
plants	Phyllanthaceae	<i>Phyllanthus lacerosus</i>			C		1/1
plants	Phyllanthaceae	<i>Phyllanthus virgatus</i>			C		10/10
plants	Phyllanthaceae	<i>Phyllanthus colinus</i>			C		5/5
plants	Phyllanthaceae	<i>Breynia oblongifolia</i>			C		4/3
plants	Phyllanthaceae	<i>Phyllanthus</i>			C		5/3
plants	Phyllanthaceae	<i>Flueggea leucopyrus</i>	quinine tree		C		10/8
plants	Picrodendraceae	<i>Petalostigma pubescens</i>			C		4
plants	Picrodendraceae	<i>Petalostigma banksii</i>			C		4/4
plants	Pittosporaceae	<i>Bursaria incana</i>			C		4/4
plants	Pittosporaceae	<i>Pittosporum spinescens</i>			C		9/4
plants	Pittosporaceae	<i>Pittosporum angustifolium</i>			C		1/1
plants	Plantaginaceae	<i>Stemodia pubescens</i>			C		1/1
plants	Plantaginaceae	<i>Scoparia dulcis</i>	scoparia	Y	C		3/3
plants	Plantaginaceae	<i>Stemodia glabella</i>			C		3/3
plants	Plumbaginaceae	<i>Plumbago zeylanica</i>	native plumbago		C		2/2
plants	Polygalaceae	<i>Polygala difficilis</i>			C		1/1
plants	Polygalaceae	<i>Polygala longifolia</i>			C		1/1
plants	Polygalaceae	<i>Comesperma pallidum</i>			C		4/4
plants	Polygalaceae	<i>Polygala triflora</i>			C		4/4
plants	Polygonaceae	<i>Muehlenbeckia</i>			C		3/3
plants	Polygonaceae	<i>Duma florulenta</i>			C		1
plants	Polygonaceae	<i>Polygonum plebeium</i>	small knotweed		C		2/2
plants	Polygonaceae	<i>Persicaria decipiens</i>	slender knotweed		C		1/1
plants	Polygonaceae	<i>Persicaria lapathifolia</i>	pale knotweed		C		3/1
plants	Polygonaceae	<i>Fallopia convolvulus</i>	black bindweed	Y	C		1/1
plants	Polygonaceae	<i>Persicaria attenuata</i>			C		1/1
plants	Portulacaceae	<i>Portulaca pilosa</i>		Y	C		3/2
plants	Portulacaceae	<i>Calandrinia ptychosperma</i>			C		1/1
plants	Portulacaceae	<i>Calandrinia pickeringii</i>			C		2/2
plants	Portulacaceae	<i>Portulaca oleracea</i>	pigweed	Y	C		1/1
plants	Proteaceae	<i>Hakea</i>			C		8/2
plants	Proteaceae				C		2

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	Proteaceae	<i>Grevillea</i>			C		2
plants	Proteaceae	<i>Hakea lorea</i>			C		3
plants	Proteaceae	<i>Grevillea decora</i>			C		1/1
plants	Proteaceae	<i>Grevillea glauca</i>	bushy's clothes peg		C		1
plants	Proteaceae	<i>Grevillea striata</i>	beefwood		C		6/2
plants	Proteaceae	<i>Persoonia falcata</i>			C		1
plants	Proteaceae	<i>Grevillea hilliana</i>			C		2
plants	Proteaceae	<i>Grevillea sessilis</i>			C		1/1
plants	Proteaceae	<i>Grevillea parallela</i>			C		3/2
plants	Proteaceae	<i>Grevillea pteridifolia</i>	golden parrot tree		C		1/1
plants	Proteaceae	<i>Grevillea decora subsp. decora</i>			C		9/9
plants	Rhamnaceae	<i>Alphitonia excelsa</i>	soap tree		C		7/5
plants	Rhamnaceae	<i>Ventilago viminalis</i>	supplejack		C		7/3
plants	Rubiaceae	<i>Oldenlandia galioides</i>			C		1/1
plants	Rubiaceae	<i>Spermacoce brachystema</i>			C		9/9
plants	Rubiaceae	<i>Coelospermum reticulatum</i>			C		2/1
plants	Rubiaceae	<i>Oldenlandia coerulescens</i>			C		2/2
plants	Rubiaceae	<i>Psychrax saligna forma saligna</i>			C		1/1
plants	Rubiaceae	<i>Psychrax attenuata forma megalantha</i>			C		1/1
plants	Rubiaceae	<i>Everistia vacciniifolia forma crassa</i>			C		1/1
plants	Rubiaceae	<i>Oldenlandia corymbosa var. corymbosa</i>		Y	C		2/2
plants	Rubiaceae	<i>Spermacoce sp. (Dislyn A.R.Bean 14098)</i>			C		1/1
plants	Rubiaceae	<i>Synaptantha tillaeacea var. tillaeacea</i>			C		2/2
plants	Rubiaceae	<i>Oldenlandia mitrasacmoides subsp. nigricans</i>			C		1/1
plants	Rubiaceae	<i>Oldenlandia mitrasacmoides subsp. mitrasacmoides</i>			C		2/2
plants	Rubiaceae	<i>Oldenlandia mitrasacmoides subsp. mitrasacmoides</i>			C		1/1
plants	Rubiaceae	<i>Oldenlandia mitrasacmoides subsp. trachymenoides</i>			C		2/2
plants	Rubiaceae	<i>Psychrax attenuata</i>			C		5/5
plants	Rubiaceae	<i>Psychrax johnsonii</i>			C		2
plants	Rubiaceae	<i>Larsenaikia ochreatea</i>			C		3/1
plants	Rubiaceae	<i>Psychrax forsteri</i>			C		2/2
plants	Rubiaceae	<i>Dentella repens</i>	dentella		C		1/1
plants	Rutaceae	<i>Flindersia dissosperma</i>			C		1/1
plants	Rutaceae	<i>Phebalium nottii</i>	pink phebalium		C		5/5
plants	Rutaceae	<i>Citrus glauca</i>			C		1/1
plants	Rutaceae	<i>Geijera salicifolia</i>	brush wilga		C		3/2
plants	Rutaceae	<i>Micromelum minutum</i>	clusterberry		C		8/6
plants	Rutaceae	<i>Geijera parviflora</i>	wilga		C		1/1
plants	Rutaceae	<i>Anthobolus leptomerioioides</i>			C		9/4
plants	Santalaceae	<i>Santalum lanceolatum</i>			C		1/1
plants	Santalaceae	<i>Exocarpos latifolius</i>			C		5/4
plants	Santalaceae	<i>Exocarpos sparteus</i>	slender cherry		C		1/1
plants	Sapindaceae	<i>Cardiospermum halicacabum var. halicacabum</i>		Y	C		1/1
plants	Sapindaceae	<i>Dodonaea lanceolata var. subsessilifolia</i>			C		2/2
plants	Sapindaceae	<i>Alectryon oleifolius subsp. elongatus</i>			C		6/6
plants	Sapindaceae	<i>Dodonaea viscosa subsp. spatulata</i>			C		3/3
plants	Sapindaceae	<i>Alectryon diversifolius</i>	scrub boonaree		C		3/3
plants	Sapindaceae				C		3/1

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	higher dicots	Sapindaceae	<i>Dodonaea stenophylla</i>		C		6/5
plants	higher dicots	Sapindaceae	<i>Dodonaea tenuifolia</i>		C		1/1
plants	higher dicots	Sapindaceae	<i>Dodonaea dodecandra</i>		C		6/6
plants	higher dicots	Sapindaceae	<i>Atalaya hemiglauca</i>		C		9/3
plants	higher dicots	Sapindaceae	<i>Dodonaea viscosa</i>		C		1
plants	higher dicots	Scrophulariaceae	<i>Eremophila maculata subsp. maculata</i>		C		3/3
plants	higher dicots	Scrophulariaceae	<i>Eremophila debilis</i>		C		1
plants	higher dicots	Scrophulariaceae	<i>Eremophila deserti</i>		C		9/7
plants	higher dicots	Scrophulariaceae	<i>Limosella australis</i>		C		1/1
plants	higher dicots	Scrophulariaceae	<i>Myoporum acuminatum</i>		C		13/9
plants	higher dicots	Scrophulariaceae	<i>Eremophila polyclada</i>		C		7/6
plants	higher dicots	Scrophulariaceae	<i>Eremophila latrobei subsp. glabra</i>		C		5/5
plants	higher dicots	Scrophulariaceae	<i>Eremophila bignoniiflora</i>		C		3/3
plants	higher dicots	Scrophulariaceae	<i>Eremophila mitchellii</i>		C		19/5
plants	higher dicots	Scrophulariaceae	<i>Eremophila longifolia</i>		C		4/4
plants	higher dicots	Scrophulariaceae	<i>Eremophila latrobei subsp. latrobei</i>		C		1/1
plants	higher dicots	Solanaceae	<i>Solanum esuriale</i>		C		3/3
plants	higher dicots	Solanaceae	<i>Solanum</i>		C		1
plants	higher dicots	Solanaceae	<i>Nicotiana megalosiphon subsp. megalosiphon</i>		C		2/2
plants	higher dicots	Solanaceae	<i>Solanum parvifolium subsp. parvifolium</i>		C		1/1
plants	higher dicots	Solanaceae	<i>Nicotiana megalosiphon</i>		C		1/1
plants	higher dicots	Solanaceae	<i>Solanum crebrispinum</i>		C		4/4
plants	higher dicots	Solanaceae	<i>Solanum cleistogamum</i>		C		2/2
plants	higher dicots	Solanaceae	<i>Solanum adenophorum</i>		C		1/1
plants	higher dicots	Solanaceae	<i>Solanum nodiflorum</i>	Y	E		1/1
plants	higher dicots	Solanaceae	<i>Solanum ellipticum</i>		C		5/5
plants	higher dicots	Solanaceae	<i>Solanum galbinum</i>		C		3/3
plants	higher dicots	Solanaceae	<i>Nicotiana forsteri</i>		C		1/1
plants	higher dicots	Sparmanniaceae	<i>Corchorus sidoides subsp. vermicularis</i>		C		3/3
plants	higher dicots	Sparmanniaceae	<i>Corchorus trifocularis</i>		C		2/2
plants	higher dicots	Sparmanniaceae	<i>Corchorus tomentellus</i>		C		1/1
plants	higher dicots	Sparmanniaceae	<i>Triumfetta pentandra</i>	Y	C		2/2
plants	higher dicots	Sparmanniaceae	<i>Grewia retusifolia</i>		C		2/2
plants	higher dicots	Sparmanniaceae	<i>Corchorus pumilio</i>		C		2/2
plants	higher dicots	Sparmanniaceae	<i>Corchorus</i>		C		1
plants	higher dicots	Sparmanniaceae	<i>Grewia latifolia</i>		C		7/2
plants	higher dicots	Stackhousiaceae	<i>Stackhousia intermedia</i>		C		4/4
plants	higher dicots	Styliaceae	<i>Styidium eglanulosum</i>		C		1/1
plants	higher dicots	Styliaceae	<i>Styidium velleioides</i>		C		3/1
plants	higher dicots	Styliaceae	<i>Styidium eriorhizum</i>		C		2/2
plants	higher dicots	Thymelaeaceae	<i>Pimelea haematostachya</i>		C		1/1
plants	higher dicots	Thymelaeaceae	<i>Pimelea sanguinea</i>		C		1/1
plants	higher dicots	Ulmaceae	<i>Trema tomentosa var. aspera</i>		C		1/1
plants	higher dicots	Verbenaceae	<i>Stachytarpheta jamaicensis</i>	Y	C		1/1
plants	higher dicots	Verbenaceae	<i>Verbena macrostachya</i>		C		1/1
plants	higher dicots	Violaceae	<i>Hybanthus monopetalus</i>		C		2

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	Violaceae	<i>Afrohybanthus enneaspermus</i>			C		6/6
plants	Violaceae	<i>Afrohybanthus stellarioides</i>			C		2/2
plants	Viscaceae	<i>Viscum articulatum</i>	flat mistletoe		C		1/1
plants	Vitaceae	<i>Cayratia clematidea</i>	slender grape		C		1/1
plants	Vitaceae	<i>Clematicissus opaca</i>			C		1
plants	Zygophyllaceae	<i>Tribulopsis</i>			C		1/1
plants	Zygophyllaceae	<i>Tribulopsis angustifolia</i>			C		1/1
plants	Zygophyllaceae	<i>Zygophyllum apiculatum</i>	gall weed		C		1/1
plants	Zygophyllaceae	<i>Tribulus micrococcus</i>	yellow vine		C		1/1
plants	Ricciaceae	<i>Riccia</i>			C		1/1
plants	Aristolochiaceae	<i>Aristolochia</i>			C		1
plants	Lauraceae	<i>Cassytha filiformis</i>	dodder laurel		C		1/1
plants	Lauraceae	<i>Cassytha pubescens</i>	downy devil's twine		C		2
plants	Linderniaceae	<i>Lindernia</i>			C		1/1
plants	Menispermaceae	<i>Tinospora smilacina</i>	snakevine		C		2
plants	Nymphaeaceae	<i>Nymphaea gigantea</i>			C		5/3
plants	Papaveraceae	<i>Argemone ochroleuca subsp. ochroleuca</i>	Mexican poppy	Y	C		1/1
plants	Phrymaceae	<i>Mimulus repens</i>	creeping monkey flower		C		1/1
plants	Phrymaceae	<i>Peplidium</i>			C		1/1
plants	Phrymaceae	<i>Peplidium foecundum</i>			C		3/2
plants	Alismataceae	<i>Caldesia oligococca</i>			C		1/1
plants	Amaryllidaceae	<i>Crinum flaccidum</i>	Murray lily		C		3/1
plants	Amaryllidaceae	<i>Calostemma luteum</i>			C		3/1
plants	Aponogetonaceae	<i>Aponogeton queenslandicus</i>			C		1/1
plants	Araceae	<i>Lemna aequinoctialis</i>	common duckweed		C		1
plants	Araceae	<i>Livistona lanuginosa</i>			V	V	2/2
plants	Araceae	<i>Phoenix dactylifera</i>		Y			1/1
plants	Asphodelaceae	<i>Bulbine bulbosa</i>	golden lily		C		3/3
plants	Colchicaceae	<i>Iphigenia indica</i>			C		1/1
plants	Commelinaceae	<i>Commelina lanceolata</i>			C		1/1
plants	Commelinaceae	<i>Murdannia graminea</i>	murdannia		C		3/3
plants	Commelinaceae	<i>Commelina ensifolia</i>	scurvy grass		C		2/2
plants	Commelinaceae	<i>Commelina</i>			C		1/1
plants	Commelinaceae	<i>Cyanotis axillaris</i>			C		1/1
plants	Cyperaceae	<i>Cyperus betchei subsp. betchei</i>			C		8/8
plants	Cyperaceae	<i>Schoenoplectiella dissachantha</i>			C		4/4
plants	Cyperaceae	<i>Schoenoplectus tabernaemontani</i>			C		3/2
plants	Cyperaceae	<i>Cyperus gunnii subsp. novae-hollandiae</i>			C		1/1
plants	Cyperaceae	<i>Schoenoplectiella lateriflora var. lateriflora</i>			C		1/1
plants	Cyperaceae	<i>Fimbristylis sp. (Elizabeth Springs)</i>			V		2/2
plants	Cyperaceae	<i>R.J.Fensham 3743</i>					
plants	Cyperaceae	<i>Scleria</i>			C		1
plants	Cyperaceae	<i>Cyperus iria</i>			C		5/5
plants	Cyperaceae	<i>Cyperus bifax</i>	western nutgrass		C		9/9
plants	Cyperaceae	<i>Cyperus fulvus</i>			C		4/4
plants	Cyperaceae	<i>Cyperus haspan</i>			C		2

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	Cyperaceae	<i>Cyperus conicus</i>			C		3/3
plants	Cyperaceae	<i>Cyperus gilesii</i>			C		3/3
plants	Cyperaceae	<i>Cyperus dactyloides</i>			C		8/8
plants	Cyperaceae	<i>Cyperus laevigatus</i>			C		5/2
plants	Cyperaceae	<i>Cyperus pulchellus</i>			C		1/1
plants	Cyperaceae	<i>Cyperus squarrosus</i>	bearded flatsedge		C		3/3
plants	Cyperaceae	<i>Eleocharis pallens</i>	pale spikerush		C		5/5
plants	Cyperaceae	<i>Scleria sphacelata</i>			C		1/1
plants	Cyperaceae	<i>Bulbostylis barbata</i>			C		2/2
plants	Cyperaceae	<i>Cyperus</i>			C		1
plants	Cyperaceae	<i>Schoenus kennyi</i>			C		1/1
plants	Cyperaceae	<i>Scleria brownii</i>			C		2/2
plants	Cyperaceae	<i>Cyperus flavidus</i>			C		4/2
plants	Cyperaceae	<i>Cyperus gracilis</i>			C		4/1
plants	Cyperaceae	<i>Cyperus procerus</i>			C		1/1
plants	Cyperaceae	<i>Cyperus rotundus</i>	nutgrass	Y			3
plants	Cyperaceae	<i>Eleocharis plana</i>	ribbed spikerush		C		4/3
plants	Cyperaceae	<i>Fuirena ciliaris</i>			C		2/1
plants	Cyperaceae	<i>Baumea rubiginosa</i>			C		7/3
plants	Cyperaceae	<i>Cyperus carinatus</i>	soft twigrush		C		1/1
plants	Cyperaceae	<i>Cyperus castaneus</i>			C		1/1
plants	Cyperaceae	<i>Cyperus concinnus</i>			C		4/4
plants	Cyperaceae	<i>Cyperus difformis</i>			C		10/6
plants	Cyperaceae	<i>Cyperus exaltatus</i>	rice sedge		C		4/2
plants	Cyperaceae	<i>Cyperus javanicus</i>	tall flatsedge		C		1/1
plants	Cyperaceae	<i>Cyperus trinervis</i>			C		1/1
plants	Cyperaceae	<i>Fimbristylis rara</i>			C		3/3
plants	Cyperaceae	<i>Fuirena umbellata</i>			C		4/1
plants	Cyperaceae	<i>Schoenus falcatus</i>			C		3/1
plants	Cyperaceae	<i>Cyperus isabellinus</i>			C		1/1
plants	Cyperaceae	<i>Fimbristylis blakei</i>			C		2/2
plants	Cyperaceae	<i>Fimbristylis nutans</i>			C		3/1
plants	Cyperaceae	<i>Cyperus orgadophilus</i>			C		1/1
plants	Cyperaceae	<i>Cyperus polystachyos</i>		Y			6
plants	Cyperaceae	<i>Cyperus victoriensis</i>			C		5/3
plants	Cyperaceae	<i>Cyperus alterniflorus</i>			C		3/3
plants	Cyperaceae	<i>Cyperus macrostachyos</i>			C		1/1
plants	Cyperaceae	<i>Eleocharis equisetina</i>			C		7/4
plants	Cyperaceae	<i>Eleocharis sphacelata</i>	tall spikerush		C		1/1
plants	Cyperaceae	<i>Cyperus sanguinolentus</i>			C		10/3
plants	Cyperaceae	<i>Fimbristylis dichotoma</i>	common fringe-rush		C		17/10
plants	Cyperaceae	<i>Fimbristylis macrantha</i>			C		2/2
plants	Cyperaceae	<i>Fimbristylis neilsonii</i>			C		1/1
plants	Cyperaceae	<i>Eleocharis atropurpurea</i>			C		1/1
plants	Cyperaceae	<i>Fimbristylis aestivalis</i>			C		1/1
plants	Cyperaceae	<i>Fimbristylis complanata</i>			C		1/1

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plants	Cyperaceae	<i>Fimbristylis ferruginea</i>			C		5/3
plants	Cyperaceae	<i>Fimbristylis littoralis</i>			C		4/3
plants	Cyperaceae	<i>Fimbristylis microcarya</i>			C		2/2
plants	Cyperaceae	<i>Fimbristylis sieberiana</i>			C		1/1
plants	Cyperaceae	<i>Fimbristylis depauperata</i>			C		1/1
plants	Cyperaceae	<i>Fimbristylis squarrosa</i>			C		2/2
plants	Cyperaceae	<i>Fimbristylis subaristata</i>			C		1/1
plants	Cyperaceae	<i>Schoenoplectiella erecta</i>		Y			1/1
plants	Cyperaceae	<i>Schoenoplectiella laevis</i>			C		1/1
plants	Cyperaceae	<i>Eleocharis philippinensis</i>			C		1/1
plants	Cyperaceae	<i>Eleocharis cylindrostachys</i>			C		2/2
plants	Cyperaceae	<i>Schoenoplectiella mucronata</i>			C		1
plants	Cyperaceae	<i>Cyperus haspan subsp. haspan</i>			C		2
plants	Cyperaceae	<i>Eriocaulon carsonii subsp. orientale</i>			C	E	2/2
plants	Eriocaulaceae	<i>Eriocaulon carsonii</i>			E	E	4/4
plants	Eriocaulaceae	<i>Dianella longifolia var. stupata</i>			E	E	3
plants	Hemerocallidaceae	<i>Dianella longifolia var. longifolia</i>			C		4/3
plants	Hemerocallidaceae	<i>Dianella longifolia var. longifolia</i>			C		1/1
plants	Hemerocallidaceae	<i>Dianella rara</i>			C		1/1
plants	Hypoxidaceae	<i>Hypoxis arillacea</i>			C		2/2
plants	Johnsoniaceae	<i>Tricoryne</i>			C		1
plants	Johnsoniaceae	<i>Caesia parviflora var. vittata</i>	yellow autumn lily		C		1/1
plants	Johnsoniaceae	<i>Tricoryne elatior</i>			C		3/3
plants	Johnsoniaceae	<i>Caesia chlorantha</i>			C		1/1
plants	Juncaceae	<i>Juncus polyanthemus</i>			C		8/4
plants	Juncaceae	<i>Juncus usitatus</i>			C		1/1
plants	Juncaginaceae	<i>Triglochin nana</i>			C		1/1
plants	Juncaginaceae	<i>Cynogeton multifructus</i>			C		1/1
plants	Laxmanniaceae	<i>Laxmannia gracilis</i>	slender wire lily		C		1/1
plants	Laxmanniaceae	<i>Lomandra longifolia</i>			C		2/2
plants	Laxmanniaceae	<i>Lomandra leucocephala subsp. leucocephala</i>			C		3/3
plants	Laxmanniaceae	<i>Lomandra multiflora subsp. multiflora</i>			C		1/1
plants	Laxmanniaceae	<i>Thysanotus tuberosus subsp. tuberosus</i>			C		1/1
plants	Laxmanniaceae	<i>Thysanotus chinensis</i>			C		1/1
plants	Orchidaceae	<i>Spiranthes sinensis</i>	austral ladies tresses		C		1
plants	Orchidaceae	<i>Cymbidium canaliculatum</i>			C		4/1
plants	Orchidaceae	<i>Spiranthes australis</i>			C		1/1
plants	Philetiaceae	<i>Petermannia</i>			C		1
plants	Philydraceae	<i>Philydrum lanuginosum</i>	frogsmouth		C		3
plants	Poaceae	<i>Astrela elymoides</i>	hoop mitchell grass		C		7/5
plants	Poaceae	<i>Astrela squarrosa</i>	bull mitchell grass		C		2/2
plants	Poaceae	<i>Cenchrus echinatus</i>	Mossman River grass	Y			2/2
plants	Poaceae	<i>Chloris ventricosa</i>	tall chloris		C		3/3
plants	Poaceae	<i>Chrysopogon fallax</i>			C		13/4
plants	Poaceae	<i>Digitaria bicornis</i>			C		4/4
plants	Poaceae	<i>Digitaria ciliaris</i>	summer grass	Y			3/3
plants	Poaceae	<i>Elymus</i>					1

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	Poaceae	<i>Chloris</i>			C		5
plants	Poaceae	<i>Panicum</i>			C		5
plants	Poaceae	Poaceae			C		4
plants	Poaceae	<i>Triodia</i>			C		12
plants	Poaceae	<i>Aristida</i>			C		19
plants	Poaceae	<i>Eriachne</i>			C		3
plants	Poaceae	<i>Urochloa</i>			C		1
plants	Poaceae	<i>Digitaria</i>			C		3
plants	Poaceae	<i>Eriochloa</i>			C		2
plants	Poaceae	<i>Enneapogon</i>			C		4/1
plants	Poaceae	<i>Eragrostis</i>			C		6
plants	Poaceae	<i>Leptochloa</i>			C		2
plants	Poaceae	<i>Sporobolus</i>			C		2
plants	Poaceae	<i>Hyparrhenia</i>			C		1
plants	Poaceae	<i>Paspalidium</i>			C		5
plants	Poaceae	<i>Perotis rara</i>	comet grass		C		8/4
plants	Poaceae	<i>Thyridolepis</i>			C		1/1
plants	Poaceae	<i>Eulalia aurea</i>		Y	C		5/5
plants	Poaceae	<i>Chloris gayana</i>	silky browntop	Y			1
plants	Poaceae	<i>Melinis repens</i>	rhodes grass				5/5
plants	Poaceae	<i>Panicum simile</i>	red natal grass		C		2/1
plants	Poaceae	<i>Aristida hygrometrica</i>			C		3/3
plants	Poaceae	<i>Cenchrus purpurascens</i>			C		4/3
plants	Poaceae	<i>Cymbopogon bombycinus</i>			C		14/7
plants	Poaceae	<i>Digitaria breviglumis</i>	silky oilgrass		C		4/4
plants	Poaceae	<i>Elytrophorus spicatus</i>			C		5/5
plants	Poaceae	<i>Eragrostiella bifaria</i>			C		1
plants	Poaceae	<i>Eragrostis filicaulis</i>			C		2/2
plants	Poaceae	<i>Sarga plumosum</i>			C		2/2
plants	Poaceae	<i>Chloris inflata</i>	purpletop chloris	Y			7/7
plants	Poaceae	<i>Chloris virgata</i>	feathertop rhodes grass	Y	C		1/1
plants	Poaceae	<i>Diplachne fusca</i>		Y			6
plants	Poaceae	<i>Eleusine indica</i>	crowsfoot grass		C		1/1
plants	Poaceae	<i>Eriachne obtusa</i>			C		3/2
plants	Poaceae	<i>Isachne globosa</i>	swamp millet		C		4/3
plants	Poaceae	<i>Panicum effusum</i>			C		8/4
plants	Poaceae	<i>Setima nervosum</i>			C		1/1
plants	Poaceae	<i>Setaria surgens</i>			C		2/2
plants	Poaceae	<i>Sorghum bicolor</i>	forage sorghum	Y			1/1
plants	Poaceae	<i>Themeda arguens</i>			C		1/1
plants	Poaceae	<i>Triodia pungens</i>		Y	C		11/11
plants	Poaceae	<i>Urochloa mutica</i>			C		1/1
plants	Poaceae	<i>Aristida exserta</i>			C		2/2
plants	Poaceae	<i>Aristida ingrata</i>			C		2/2
plants	Poaceae	<i>Chloris truncata</i>			C		1
plants	Poaceae	<i>Cynodon dactylon</i>		Y			3

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plants	Poaceae	<i>Digitaria minima</i>			C		3/3
plants	Poaceae	<i>Digitaria orbata</i>			C		1/1
plants	Poaceae	<i>Dinebra ligulata</i>			C		2/2
plants	Poaceae	<i>Eriachne ciliata</i>			C		2/2
plants	Poaceae	<i>Eriochloa crebra</i>	spring grass		C		2/2
plants	Poaceae	<i>Hyparrhenia rufa</i>		Y			1
plants	Poaceae	<i>Leersia hexandra</i>	swamp rice grass		C		5/2
plants	Poaceae	<i>Themeda avenacea</i>			C		1/1
plants	Poaceae	<i>Themeda triandra</i>	kangaroo grass		C		9/5
plants	Poaceae	<i>Triraphis mollis</i>	purple plumegrass		C		1/1
plants	Poaceae	<i>Urochloa foliosa</i>			C		2/2
plants	Poaceae	<i>Urochloa reptans</i>			C		2/2
plants	Poaceae	<i>Acrachne racemosa</i>			C		2/2
plants	Poaceae	<i>Aristida calycina</i>			C		2/2
plants	Poaceae	<i>Aristida muricata</i>			C		1
plants	Poaceae	<i>Aristida pruinosa</i>			C		4/4
plants	Poaceae	<i>Astrelia lappacea</i>	curly mitchell grass		C		5/5
plants	Poaceae	<i>Cenchrus ciliaris</i>		Y			24/9
plants	Poaceae	<i>Chloris pectinata</i>	comb chloris		C		6/6
plants	Poaceae	<i>Digitaria brownii</i>			C		10/10
plants	Poaceae	<i>Digitaria diffusa</i>			C		1/1
plants	Poaceae	<i>Enneapogon virens</i>			C		5/5
plants	Poaceae	<i>Entolasia stricta</i>	wiry panic		C		1
plants	Poaceae	<i>Eragrostis exigua</i>			C		1/1
plants	Poaceae	<i>Eragrostis pilosa</i>	soft lovegrass	Y			1/1
plants	Poaceae	<i>Eriochloa procer</i>	slender cupgrass		C		3/3
plants	Poaceae	<i>Mnesithea formosa</i>			C		1/1
plants	Poaceae	<i>Panicum coloratum</i>		Y			1/1
plants	Poaceae	<i>Panicum laevinode</i>	pepper grass		C		3/3
plants	Poaceae	<i>Paspalidium tarum</i>			C		4/3
plants	Poaceae	<i>Sporobolus caroli</i>	fairy grass		C		9/8
plants	Poaceae	<i>Sporobolus creber</i>			C		1/1
plants	Poaceae	<i>Theellungia advena</i>	coolibah grass		C		2/2
plants	Poaceae	<i>Triodia bitextura</i>			C		2/2
plants	Poaceae	<i>Triodia longiceps</i>	giant grey spinifex		C		4/4
plants	Poaceae	<i>Urochloa piligera</i>			C		7/7
plants	Poaceae	<i>Aristida latifolia</i>	feathertop wiregrass		C		3/3
plants	Poaceae	<i>Aristida leptopoda</i>	white speargrass		C		1/1
plants	Poaceae	<i>Aristida personata</i>			C		3/3
plants	Poaceae	<i>Digitaria diminuta</i>			C		1/1
plants	Poaceae	<i>Echinochloa colona</i>	awnless barnyard grass	Y			3/2
plants	Poaceae	<i>Eragrostis sororia</i>			C		9/7
plants	Poaceae	<i>Eriachne aristidea</i>			C		1/1
plants	Poaceae	<i>Eriachne benthamii</i>			C		1/1
plants	Poaceae	<i>Eriachne mucronata</i>		Y			8/2
plants	Poaceae	<i>Ischaemum australe</i>			C		2

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plants	Poaceae	<i>Panicum bombycinum</i>			C		1/1
plants	Poaceae	<i>Paspalum dilatatum</i>	paspalum	Y			5/2
plants	Poaceae	<i>Paspalum distichum</i>	water couch		C		4/1
plants	Poaceae	<i>Paspalum vaginatum</i>	saltwater couch		C		2/1
plants	Poaceae	<i>Sacciolepis indica</i>	Indian cupscale grass		C		7/2
plants	Poaceae	<i>Sporobolus pamelae</i>			E		6/2
plants	Poaceae	<i>Triodia mitchellii</i>	buck spinifex		C		4/4
plants	Poaceae	<i>Amphipogon sericeus</i>			C		3/3
plants	Poaceae	<i>Aristida sciuroides</i>			C		1/1
plants	Poaceae	<i>Brachyachne tenella</i>			C		5/5
plants	Poaceae	<i>Chrysopogon filipes</i>			C		4/4
plants	Poaceae	<i>Cymbopogon ambiguus</i>	lemon grass		C		1/1
plants	Poaceae	<i>Cymbopogon obtectus</i>			C		3/3
plants	Poaceae	<i>Cymbopogon procerus</i>			C		1/1
plants	Poaceae	<i>Digitaria ramularis</i>			C		4/4
plants	Poaceae	<i>Enneapogon gracilis</i>	slender nineawn		C		2/1
plants	Poaceae	<i>Enteropogon ramosus</i>			C		13/13
plants	Poaceae	<i>Eragrostis cumingii</i>			C		2/2
plants	Poaceae	<i>Eragrostis elongata</i>		Y	C		8/7
plants	Poaceae	<i>Eragrostis speciosa</i>			C		4/4
plants	Poaceae	<i>Eriochloa meyeriana</i>			C		4/4
plants	Poaceae	<i>Imperata cylindrica</i>	blady grass	Y	C		1/1
plants	Poaceae	<i>Leptochloa digitata</i>			C		1
plants	Poaceae	<i>Oxychloris scariosa</i>	winged chloris		C		2/2
plants	Poaceae	<i>Panicum larcornianum</i>			C		7/7
plants	Poaceae	<i>Paspalidium distans</i>	shotgrass		C		4/4
plants	Poaceae	<i>Paspalidium gracile</i>	slender panic		C		3/3
plants	Poaceae	<i>Tragus australianus</i>	small burr grass		C		8/8
plants	Poaceae	<i>Bothriochloa pertusa</i>		Y	C		2/1
plants	Poaceae	<i>Cymbopogon refractus</i>	barbed-wire grass		C		3/3
plants	Poaceae	<i>Dichanthium fecundum</i>	curly bluegrass		C		4/3
plants	Poaceae	<i>Digitaria longiflora</i>			C		4/4
plants	Poaceae	<i>Digitaria parviflora</i>	marsh millet		C		2/2
plants	Poaceae	<i>Echinochloa inundata</i>			C		2
plants	Poaceae	<i>Enneapogon truncatus</i>			C		1/1
plants	Poaceae	<i>Eragrostis lacunaria</i>	purple lovegrass		C		1/1
plants	Poaceae	<i>Eragrostis schultzei</i>			C		11/10
plants	Poaceae	<i>Eragrostis setifolia</i>			C		1/1
plants	Poaceae	<i>Eragrostis tenellula</i>	delicate lovegrass		C		2/2
plants	Poaceae	<i>Iseilema macratherum</i>			C		5/5
plants	Poaceae	<i>Phragmites australis</i>	common reed		C		3/3
plants	Poaceae	<i>Sorghum arundinaceum</i>	Rhodesian Sudan grass	Y	C		2
plants	Poaceae	<i>Sporobolus contiguus</i>			C		1/1
plants	Poaceae	<i>Sporobolus scabridus</i>			C		13/13
plants	Poaceae	<i>Tripogon loliformis</i>	five minute grass		C		8/6
plants	Poaceae	<i>Urochloa praetervis</i>			C		2/2

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	Poaceae	<i>Whiteochloa airoides</i>			C		1/1
plants	Poaceae	<i>Alloteropsis cimicina</i>			C		9/9
plants	Poaceae	<i>Aristida biglandulosa</i>			C		1/1
plants	Poaceae	<i>Aristida helicophylla</i>			C		1/1
plants	Poaceae	<i>Eragrostis leptocarpa</i>	drooping lovegrass		C		1/1
plants	Poaceae	<i>Eragrostis parviflora</i>	weeping lovegrass		C		7/6
plants	Poaceae	<i>Heteropogon contortus</i>	black speargrass		C		11/7
plants	Poaceae	<i>Iseilema membranaceum</i>	small flinders grass		C		5/5
plants	Poaceae	<i>Iseilema vaginiflorum</i>	red flinders grass		C		3/3
plants	Poaceae	<i>Schizachyrium fragile</i>	firegrass		C		2/2
plants	Poaceae	<i>Setaria oplismenoides</i>			C		1/1
plants	Poaceae	<i>Sporobolus disjunctus</i>			C		3/3
plants	Poaceae	<i>Sporobolus mitchellii</i>	rat's tail couch		C		6/6
plants	Poaceae	<i>Sporobolus virginicus</i>	sand couch		C		5/3
plants	Poaceae	<i>Alloteropsis semialata</i>	cockatoo grass		C		3/3
plants	Poaceae	<i>Aristida caput-medusae</i>			C		5/5
plants	Poaceae	<i>Arundinella nepalensis</i>	reedgrass		C		2/2
plants	Poaceae	<i>Bothriochloa ewartiana</i>	desert bluegrass		C		19/13
plants	Poaceae	<i>Brachyachne convergens</i>	common native couch		C		7/7
plants	Poaceae	<i>Cleistochloa subjuncea</i>			C		3/3
plants	Poaceae	<i>Echinochloa crus-galli</i>	barnyard grass	Y			4/1
plants	Poaceae	<i>Echinochloa turneriana</i>	channel millet		C		1/1
plants	Poaceae	<i>Enneapogon lindleyanus</i>			C		13/10
plants	Poaceae	<i>Enneapogon polyphyllus</i>	leafy nineawn		C		7/7
plants	Poaceae	<i>Enteropogon acicularis</i>	curly windmill grass		C		7/6
plants	Poaceae	<i>Enteropogon unispiceus</i>			C		2/1
plants	Poaceae	<i>Eragrostis pergracilis</i>			C		1/1
plants	Poaceae	<i>Eragrostis trichophora</i>		Y			1/1
plants	Poaceae	<i>Paspalidium disjunctum</i>			C		2/2
plants	Poaceae	<i>Ischaemum australe var. villosum</i>			C		1/1
plants	Poaceae	<i>Aristida benthamii var. benthamii</i>			C		2/2
plants	Poaceae	<i>Aristida holathera var. holathera</i>			C		7/7
plants	Poaceae	<i>Echinochloa polystachya cv. Amity</i>			C		1/1
plants	Poaceae	<i>Chloris divaricata var. divaricata</i>		Y			7/5
plants	Poaceae	<i>Hymenachne amplexicaulis cv. Olive</i>	slender chloris	Y			3/3
plants	Poaceae	<i>Amphipogon caricinus var. caricinus</i>			C		1/1
plants	Poaceae	<i>Aristida benthamii var. spinulifera</i>			C		1/1
plants	Poaceae	<i>Bothriochloa bladhii subsp. bladhii</i>			C		3/3
plants	Poaceae	<i>Megathyrsus maximus var. pubigulumis</i>		Y			3/3
plants	Poaceae	<i>Dichanthium sericeum subsp. sericeum</i>			C		10/10
plants	Poaceae	<i>Urochloa holosericea subsp. velutina</i>			C		1/1
plants	Poaceae	<i>Bothriochloa decipiens var. decipiens</i>			C		2/2
plants	Poaceae	<i>Panicum decompositum var. decompositum</i>			C		4/4
plants	Poaceae	<i>Aristida jerichoensis var. jerichoensis</i>			C		8/7
plants	Poaceae	<i>Urochloa holosericea subsp. holosericea</i>			C		3/3
plants	Poaceae	<i>Chloris sp. (Edgbaston R.J.Fensham 5694)</i>			E		5/5

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	Poaceae	<i>Aristida jerichoensis</i> var. <i>subspinulifera</i>			C		4/4
plants	Poaceae	<i>Bothriochloa decipiens</i> var. <i>cloncurrrensensis</i>			C		4/4
plants	Poaceae	<i>Calyptochloa gracillima</i> subsp. <i>gracillima</i>			C		2/2
plants	Poaceae	<i>Eriachne</i> sp. (<i>Dugald River B.K.Simon+ 3007</i>)			C		3/2
plants	Poaceae	<i>Digitaria divaricatissima</i> var. <i>divaricatissima</i>			C		1/1
plants	Poaceae	<i>Eragrostis</i> sp. (<i>Lakefield NP J.R.Clarkson+ 7010</i>)			C		1/1
plants	Poaceae	<i>Eriachne mucronata</i> forma (<i>Alpha C.E.Hubbard 7882</i>)			C		3/3
plants	Poaceae	<i>Eriachne mucronata</i> forma (<i>Burnham R.W.Purdie 1370</i>)			C		2/2
plants	Poaceae	<i>Paspalidium globoideum</i>	sago grass		C		1/1
plants	Poaceae	<i>Paspalidium jubiflorum</i>	warrego grass		C		3/3
plants	Poaceae	<i>Thyridolepis xerophila</i>		Y	C		5/5
plants	Poaceae	<i>Urochloa mosambicensis</i>	sabi grass	Y			5/5
plants	Poaceae	<i>Urochloa subquadrifera</i>					1/1
plants	Poaceae	<i>Ancistrachne uncinulata</i>	hooky grass		C		5/5
plants	Poaceae	<i>Dactyloctenium radulans</i>	button grass		C		9/5
plants	Poaceae	<i>Digitaria hystrichoides</i>	umbrella grass		C		1/1
plants	Poaceae	<i>Eragrostis leptostachya</i>			C		1/1
plants	Poaceae	<i>Eragrostis megalosperma</i>			C		1/1
plants	Poaceae	<i>Eragrostis spartinooides</i>			C		1/1
plants	Poaceae	<i>Eriochloa australiensis</i>			C		1/1
plants	Poaceae	<i>Paspalidium caespitosum</i>	brigalow grass		C		12/12
plants	Poaceae	<i>Paspalidium constrictum</i>			C		2/2
plants	Poaceae	<i>Pseudoraphis spinescens</i>	spiny mudgrass		C		6/6
plants	Poaceae	<i>Sporobolus actinocladius</i>	katoora grass		C		4/3
plants	Poaceae	<i>Sporobolus partimpatens</i>			C		3/3
plants	Poaceae	<i>Enneapogon robustissimus</i>			C		8/8
plants	Poaceae	<i>Eragrostis confertiflora</i>			C		1/1
plants	Poaceae	<i>Hymenachne amplexicaulis</i>	hymenachne	Y	C		1
plants	Poaceae	<i>Paspalidium albobillosum</i>			C		2/2
plants	Poaceae	<i>Paspalidium scabrifolium</i>			C		1/1
plants	Poaceae	<i>Sporobolus australasicus</i>			C		5/5
plants	Poaceae	<i>Thaumastochloa pubescens</i>			C		3/3
plants	Poaceae	<i>Walwhalleya subxerophila</i>			C		3/3
plants	Poaceae	<i>Bothriochloa erianthoides</i>			C		1/1
plants	Poaceae	<i>Diplachne fusca</i> var. <i>fusca</i>	satintop grass		C		1/1
plants	Poaceae	<i>Eriochloa pseudoacrotricha</i>			C		9/9
plants	Poaceae	<i>Sporobolus coromandelitanus</i>		Y	C		12/12
plants	Poaceae	<i>Calyptochloa cylindrosperma</i>			C		1/1
plants	Poaceae	<i>Hyparrhenia rufa</i> subsp. <i>rufa</i>		Y	C		4/4
plants	Poaceae	<i>Urochloa gilesii</i> var. <i>gilesii</i>			C		3/3
plants	Poaceae	<i>Cynodon dactylon</i> var. <i>dactylon</i>		Y	C		1/1
plants	Poaceae	<i>Aristida calycina</i> var. <i>calycina</i>			C		5/5
plants	Poaceae	<i>Aristida calycina</i> var. <i>praealta</i>			C		11/11
plants	Poaceae	<i>Dinebra decipiens</i> var. <i>asthenes</i>			C		1/1
plants	Poaceae	<i>Dinebra decipiens</i> var. <i>decipiens</i>			C		3/3
plants	Poaceae	<i>Ischaemum australe</i> var. <i>australe</i>			C		8/8
plants	Poaceae				C		1/1

Kingdom Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	monocots	<i>Pontederiaceae</i>					
plants	monocots	<i>Potamogeton tricarlinatus</i>	floating pondweed		C		4/4
plants	monocots	<i>Typha domingensis</i>			C		3/2
plants	monocots	<i>Typha orientalis</i>	broad-leaved cumbungi		C		1/1
plants	monocots	<i>Xanthorrhoea johnsonii</i>			C		3
protists	green algae	<i>Chlorophyceae</i>			C		1/1
		<i>Chlorella</i>			C		1

CODES

- I - Y indicates that the taxon is introduced to Queensland and has naturalised.
 - Q - Indicates the Queensland conservation status of each taxon under the *Nature Conservation Act 1992*. The codes are Extinct in the Wild (PE), Endangered (E), Vulnerable (V), Near Threatened (NT), Least Concern (C) or Not Protected ().
 - A - Indicates the Australian conservation status of each taxon under the *Environment Protection and Biodiversity Conservation Act 1999*. The values of EPBC are Conservation Dependent (CD), Critically Endangered (CE), Endangered (E), Extinct (EX), Extinct in the Wild (XW) and Vulnerable (V).
- Records – The first number indicates the total number of records of the taxon for the record option selected (i.e. All, Confirmed or Specimens). This number is output as 99999 if it equals or exceeds this value. The second number located after the / indicates the number of specimen records for the taxon. This number is output as 999 if it equals or exceeds this value.

Appendix E – Disclaimer and Limitations

This report has been prepared by CDM Smith Australia Pty Ltd (CDM Smith) for the sole benefit of Adani Infrastructure Pty Ltd for the sole purpose of identifying and reviewing the potential environmental impacts of the proposed North Galilee Water Scheme upon Matters of National Environmental Significance.

This report should not be used or relied upon for any other purpose without CDM Smith's prior written consent. CDM Smith, nor any officer or employee of CDM Smith, accepts no responsibility or liability in any way whatsoever for the use or reliance of this report for any purpose other than that for which it has been prepared.

Except with CDM Smith's prior written consent, this report may not be:

- (a) Released to any other party, whether in whole or in part (other than to Adani Infrastructure Pty Ltd's officers, employees and advisers);
- (b) Used or relied upon by any other party; or
- (c) Filed with any Governmental agency or other person or quoted or referred to in any public document.

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- (a) Has relied upon and presumed the accuracy of this information;
- (b) Has not verified the accuracy or reliability of this information (other than as expressly stated in this report);
- (c) Has not made any independent investigations or enquiries in respect of those matters of which it has no actual knowledge at the time of giving this report to Adani Infrastructure Pty Ltd; and
- (d) Makes no warranty or guarantee, expressed or implied, as to the accuracy or reliability of this information.

In recognition of the limited use to be made by Adani Infrastructure Pty Ltd of this report, Adani Infrastructure Pty Ltd agrees that, to the maximum extent permitted by law, CDM Smith (including its officer and employee) shall not be liable for any losses, claims, costs, expenses, damages (whether in statute, in contract or tort for negligence or otherwise) suffered or incurred by Adani Infrastructure Pty Ltd or any third party as a result of or in connection with the information, findings, opinions, estimates, recommendations and conclusions provided in the course of this report.

If further information becomes available, or additional assumptions need to be made, CDM Smith reserves its right to amend this report.

Referrals Gateway Process Checklist

FOI 180914
Document 4

EPBC No.	2018 / 8191	Date Received	18 / 4 / 2018
Project Name	North Galilee Water Scheme, 160km NW of, Clermont, Qld		
Assessment Section & Officer/s	s22	Valid Referral Entered	7 / 6 / 2018
	s22	Day 1 Date	8 / 6 / 2018
	s22	Public Comments Due	25 / 6 / 2018
	(Qld North Ass.)	State Minister comments	22 / 6 / 2018
		Comm Minister comments	25 / 6 / 2018
		Decision Due Date	6 / 7 / 2018

Pre-Checks															
✓	Checked validity of referral (signed with particulars, maps, description, attachments, all criteria complete etc.)														
✓	All attachments provided and electronic files established (approx 5MB or less)														
✓	Checked coordinates and saved to SPIRE file (if applicable)														
✓	Address checked against Wylie for possible Strategic Approval (if applicable)														
N/A	For WA proposals check Perth Peel mapping if within area advise Assess area & email DPC (Doc101) Rockingham LGA – Email customer@rockingham.wa.gov.au														
✓	ERT Coordinate Search for Defence/other invitation to comment within 10km DEFENCE NO DEFENCE If DEFENCE, please list site/s and note these sites in the email to Defence:														
✓	Correct template used Online <input checked="" type="checkbox"/> Template <input type="checkbox"/>														
✓	Address checked in EIAS to meet cost recovery requirements (i.e. VIC not Victoria or Vic)														
✓	ACN/ABN checked for validity (for template referrals)														
✓	Checked if proposal to be undertaken by State entity – (National Heritage impacts) – see legal advice														
✓	Checked if <u>related to another action</u> or part of a larger action – If yes please list EPBC number/s 2010/5736														
Invite for Comment State Minister:															
	ACT		NSW		NT		QLD		SA		TAS		VIC		WA
✓						✓									
Commonwealth Ministers – (for invitation to comment): <i>Indigenous, Agriculture, Infrastructure, Industry, Resources, Mtn Aust.</i>															
Establish administrative records															
✓	Record created in EIAS (for template referrals)														
✓	Check referral comments (10 business days) and decision deadline (20 business days) dates in EIAS are correct														
✓	Referral posted on website														
✓	Customer ID:			Invoice no:			Receipt no:								
	52642			18031377			14074011								
Invite comments (Email)															
✓	Director and contact person of Assessment Section Notified by email														
✓	Referring Party														
✓	Proponent														
✓	State														
✓	Commonwealth														
N/A	Perth Peel email only or GBRMPA (including zip file of docs) if required														
Transfer to Assessment Section															
✓	EIAS and Referrals Tracking Sheet updated, checklist and letters photocopied and scanned and added to RG folder and hard copy documents forwarded to Assessment Section														

Signature of RG Officer s22 Date 8/6/18
 Please ensure that all requirements are completed prior to sending through to the next stage in the process



Mr Hamish Manzi
Head of Environment & Sustainability
Adani Infrastructure Pty Ltd
GPO Box 2569
BRISBANE QLD 4001

Dear Mr Manzi

Thank you for your email of 7 August 2018, providing additional information to inform the referral decision for the North Galilee Water Scheme Project (EPBC 2018/8191).

The additional information is currently being reviewed. I note Adani's view that the additional information is *strictly confidential and commercial in confidence* and, as such, is exempt from disclosure under the *Freedom of Information Act 1982* (FOI Act).

In particular, I note that some of the information provided is already publicly available as part of the referral documentation. Therefore, I request that you specify the relevant sections of the additional information that you consider meet the requirements for an exemption from release under the FOI Act and explain why you consider the information to be confidential.

Under Part IV of the FOI Act, a document is only exempt from release if it is an exempt document for the purposes of that Part. The inclusion by Adani of a statement that the correspondence is strictly confidential and commercial in confidence information, does not in our view, mean the documents necessarily meet the criteria required for exemption from release under the FOI Act.

In the event that a request under the FOI Act is received seeking access to these documents, the Department will determine whether any or all of the documents are exempt or conditionally exempt consistent with its obligations under that Act, including obligations to consult.

Yours sincerely

James Barker
Assistant Secretary
Assessments and Governance Branch

13 August 2018

27 August 2018

James Barker
Assistant Secretary
Assessments and Governance Branch
Department of the Environment and Energy
GPO Box 787
CANBERRA ACT 2601

Dear Mr Barker,

I refer to correspondence received on 13 August 2018 regarding the North Galilee Water Scheme Project (EPBC 2018/8191) and the provision of additional information. I note that the Department of the Environment and Energy (Department) seeks further clarification on what information provided is considered to be strictly confidential and commercial in confidence and is exempt from disclosure under the *Freedom of Information Act 1982* (FOI Act).

Adani Infrastructure Pty Ltd (Adani) supplied the additional information to the Department on 7 August 2018 and kindly requested confidentiality of all data through this process. Adani notes that if information is publicly available through other processes (i.e. State government jurisdiction), then this is a matter for those agencies to determine through the relevant process. Adani specifically requests that the Department does not publish such information in the absence of an FOI Act request.

Adani is willing and able to assist if and when an FOI request is received to provide further clarity on the data and how it satisfies the criteria and is considered exempt from release under the FOI Act.

Please feel free to call me on s47F [REDACTED] should you wish to discuss this further.

Yours sincerely,



Hamish Manzi
Head of Environment & Sustainability

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

2018/8191 North Galilee Water Scheme, central Queensland

Report created: 06/09/18 13:00:16

[Summary](#)

[Details](#)

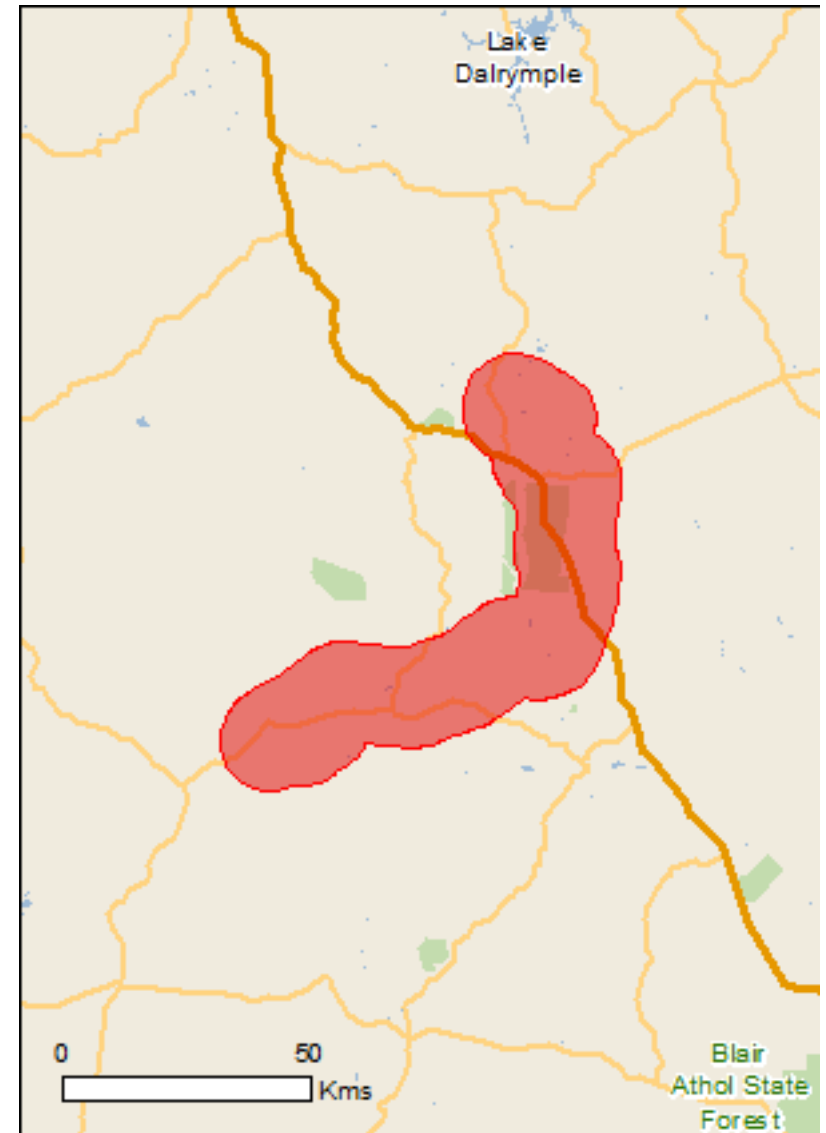
[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

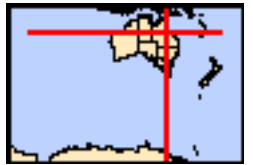
[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)



This map may contain data which are
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Summary

Matters of National Environment Significance

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Significance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Threatened Ecological Communities:	1
Threatened Species:	17
Migratory Species:	9

Other Matters Protected by the EPBC Act

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	15
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	1
Regional Forest Agreements:	None
Invasive Species:	22
Nationally Important Wetlands:	None
EPBC Act Referrals:	11
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Threatened Ecological Communities [\[Resource Information \]](#)

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Name	Status	Type of Presence
Brigalow (Acacia harpophylla dominant and co-dominant)	Endangered	Community known to occur within area

Threatened Species [\[Resource Information \]](#)

Name	Status	Type of Presence
------	--------	------------------

BIRDS

Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
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Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
--	------------	--

Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat known to occur within area
--	------------	---

Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area
--	------------	--

Neochmia ruficauda ruficauda Star Finch (eastern), Star Finch (southern) [26027]	Endangered	Species or species habitat likely to occur within area
---	------------	--

Poephila cincta cincta Southern Black-throated Finch [64447]	Endangered	Species or species habitat known to occur within area
---	------------	---

Rostratula australis Australian Painted-snipe, Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
--	------------	--

Tyto novaehollandiae kimberli Masked Owl (northern) [26048]	Vulnerable	Species or species habitat may occur within area
--	------------	--

MAMMALS

Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat may occur within area
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Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat may occur within area
--	------------	--

Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat may occur within area
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PLANTS

Dichanthium queenslandicum King Blue-grass [5481]	Endangered	Species or species habitat may occur within area
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Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
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Name	Status	Type of Presence
Livistona lanuginosa Waxy Cabbage Palm [64581]	Vulnerable	Species or species habitat likely to occur within area

REPTILES

Denisonia maculata Ornamental Snake [1193]	Vulnerable	Species or species habitat likely to occur within area
Egernia rugosa Yakka Skink [1420]	Vulnerable	Species or species habitat likely to occur within area
Furina dunmalli Dunmall's Snake [59254]	Vulnerable	Species or species habitat may occur within area

Migratory Species [\[Resource Information \]](#)

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area

Migratory Terrestrial Species

Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area

Migratory Wetlands Species

Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species [\[Resource Information \]](#)

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur

Name	Threatened	Type of Presence
Ardea alba Great Egret, White Egret [59541]		within area Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Nairana	QLD

Invasive Species [[Resource Information](#)]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit,

Name	Status	Type of Presence
Birds		
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area

Frogs

Name	Status	Type of Presence
Rhinella marina Cane Toad [83218]		Species or species habitat known to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Equus caballus Horse [5]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Acacia nilotica subsp. indica Prickly Acacia [6196]		Species or species habitat may occur within area
Cryptostegia grandiflora Rubber Vine, Rubbervine, India Rubber Vine, India Rubbervine, Palay Rubbervine, Purple Allamanda [18913]		Species or species habitat likely to occur within area
Hymenachne amplexicaulis Hymenachne, Olive Hymenachne, Water Stargrass, West Indian Grass, West Indian Marsh Grass [31754]		Species or species habitat likely to occur within area
Jatropha gossypifolia Cotton-leaved Physic-Nut, Bellyache Bush, Cotton-leaf Physic Nut, Cotton-leaf Jatropha, Black Physic Nut [7507]		Species or species habitat likely to occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Parkinsonia aculeata Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean [12301]		Species or species habitat likely to occur within area
Parthenium hysterophorus Parthenium Weed, Bitter Weed, Carrot Grass, False Ragweed [19566]		Species or species habitat likely to occur within area
Prosopis spp. Mesquite, Algaroba [68407]		Species or species habitat likely to occur within area
Vachellia nilotica Prickly Acacia, Blackthorn, Prickly Mimosa, Black Piquant, Babul [84351]		Species or species habitat likely to occur within area

EPBC Act Referrals

[[Resource Information](#)]

Further details about the referral or advice - including its current status if still active - are available in its PINK report; click on the title.

Referral

Title	Reference	Referral Outcome	Assessment Status
Galilee Coal Project including development of coal mine, 495km railway, port and	2008/4366	ACU	Clearly Unacceptable-Completed
Alpha Coal Project - Mine and Rail Development	2008/4648	CA	Approval Decision Made-POST-APPROVAL/COMPLIANCE
Carmichael Coal Mine and Rail Project	2010/5736	CA	Approval Decision Made-Post-Approval
Central Queensland Integrated Rail Project	2012/6322	CA	Guidelines Finalised-Guidelines
Galilee Infrastructure Corridor Project	2012/6489	CA	Guidelines Finalised-Guidelines
North Galilee Basin Rail Project, Qld	2013/6885	CA	Approval Decision Made-Post-Approval
Cooper to Abbot Point liquid natural gas (LNG) facility, Capling Project, QLD	2014/7175	CA	S89 - Awaiting Information-Case Decision
Moray Power Project, central Queensland	2014/7401	NCA-PM	Referral Decision Made-POST-APPROVAL/COMPLIANCE
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	NCA	Referral Decision Made-Close
Alpha North Coal Mine Project, Galilee Basin Qld	2018/8189	CA	Assessment Method Determined-Assessment Approach
North Galilee Water Scheme, 160km northwest of Clermont, Qld	2018/8191	RD	Awaiting Delegate Decision-Case Decision

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under 'type of presence'. For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environment and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [-Forestry Corporation of NSW](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

COMMONWEALTH ENVIRONMENTAL WATER OFFICE
EPBC ACT REFERRAL ADVICE FROM WETLANDS SECTION

FOI 180914
Document 9

REFERRAL: EPBC 2018/8191

DATE DUE: 29 JUNE 2018

NORTH GALILEE WATER SCHEME, QLD

Brief Description of Proposal

The proposed action involves the construction and operation of the North Galilee Water Scheme (NGWS) to supply water for the Carmichael Coal Mine and possible future resource extraction projects in the north Galilee Basin. The proposed action is in two stages and involves:

- **Stage A** - The expansion of Belyando Junction Dam (2.2 GL to 10 GL capacity) and associated infrastructure including an intake channel and pump and 49 km of buried pipeline;
- **Stage B** – A buried pipeline approximately 61 km long. There will be a series of smaller offtake pipelines that will provide water to associated infrastructure for the Carmichael Coal Mine including a proposed airport and accommodation village for mine workers.

Adani has received a flood harvesting licence under the Water Act 2000 (as granted by the Queensland Government) which allows for the extraction of up to 12.5 GL of water per year from river flows above 2,592 megalitres per day. The NGWS Project allows that licence to be effectively used and water delivered to the Carmichael Coal Mine. This extraction is from the Strategic Reserve of unallocated water in Sub-catchment E of the Burdekin Basin.

Issues Checklist

How far is the proposal from a Ramsar site?

The proposed action is located 370 km from the Shoalwater and Corio Bay Ramsar site and 244 km from the Bowling Green Bay Ramsar site. The proposed action is not located within the catchment of either Ramsar site.

Shoalwater and Corio Bays Area Ramsar site

The Shoalwater and Corio Bays Area Ramsar site is located on the Central Queensland Coast. The site is made up of two discontinuous areas, Shoalwater Bay section and Corio Bay section. The area contains a wide diversity of landscape types including undulating lowlands and hills, riverine plains, swamps, estuarine inlets, old beach ridges, dunes, sand beaches flanked by coastal cliffs, and intertidal sand and mudflats. The wetland types on the site include freshwater lagoons, swamps and streams, leading into marine, estuarine and intertidal wetlands.

The site is located in a zone where the temperate climate merges into tropical and sub-tropical climates. The climatic gradient, diversity of geomorphology and good condition of the site has resulted in a rich diversity of species. The site supports about 791 plant species and sub-species, 445 fish species, 22 frog species, 66 reptiles species, 226 birds species, 24 mammal species and 23 bat species.

The Shoalwater Bay area has been gazetted as a Defence Practice Area under the Defence Act 1903, and is used primarily for defence activities. Corio Bay is part of Queensland's Byfield National Park used primarily for conservation and recreation activities. The area is part of the traditional lands of the Darumbal people. The dune fields contain archaeological sites including shell middens, scatters of stone tools and dinner camp sites.

The Shoalwater and Corio Bays Area (Shoalwater Bay Training Area, in part - Corio Bay) Ramsar site meets six of the nine criteria:

Criterion 1: The Shoalwater and Corio Bays Area Ramsar site is in the North-east Coast Australian Drainage Division. It contains the largest area in central east Queensland of representative coastal, subcoastal and aquatic landscapes and ecosystems in a relatively undisturbed state. The area represents one of a very few large estuarine systems that retains a relatively undisturbed catchment.

Criterion 2: The Shoalwater and Corio Bays Area Ramsar site supports populations of the threatened Green Turtle, Flatback Turtle and Hawksbill Turtle and the endangered Loggerhead Turtle. The site also supports the *Environment Protection and Biodiversity Conservation Act 1999* listed Dugong.

Criterion 3: The Shoalwater and Corio Bays Area contain a high diversity of freshwater, marine and estuarine fish species, with 445 species recorded. Eighteen species of mangroves occur in the area. There are at least 10 species of seagrass present, with seagrass beds extending to depths of 20m due to water clarity. The site is of special value as habitat for endemic fish species. The mangrove, tidal mudflats and saltflats are important habitats for local and migratory shorebirds, including 26 species protected under international migratory bird conservation agreements.

Criterion 4: This Ramsar site provides nesting sites for turtles and critical feeding areas for turtles and Dugongs. It also provides breeding sites for the Beach Stone-Curlew.

Criterion 5: The Shoalwater and Corio Bays Area Ramsar site supports over 20,000 waterbirds in summer.

Criterion 6: Six species of migratory shorebirds have been recorded in the Shoalwater and Corio Bays Area Ramsar site at numbers exceeding 1% of their population in the East Asian Australasian Flyway, including the Eastern Curlew, Whimbrel and Great Knot.

Bowling Green Bay

The Bowling Green Bay Ramsar site is located 21 km north-east of Ayr, Queensland. The site plays a major role in protection of this area from erosion by cyclones. A diverse complex of coastal wetland systems occur at the site including inter-tidal seagrass beds, mangrove woodlands and saline saltpan communities on the coast, and brackish to freshwater wetlands inland. Extensive areas of forest and woodland, and some closed forest, occur on the mountainous areas and the coastal dune system.

The site has unusually low rainfall for the region, with most rain falling in summer. The heavy storm rains of the summer wet season provide fresh water into the site, reducing the salinities of the shallow inshore marine areas, the surface soils of the salt pans and the mangrove areas. The Houghton River and many creeks feed into the wetland system. Groundwater is stored in two main aquifers that recharge from direct infiltration over the delta from rainfall, river flow and flood.

Of the 224 birds known to occur in the site, almost half are known to breed within it. The site is an important habitat for about fifty percent of the migratory species listed on international conservation agreements. The intertidal and subtidal seagrass beds provide feeding habitat for the nationally threatened Green Turtle and the internationally threatened Dugong. Barramundi breed in the freshwater swamps of the site. Saltwater Crocodiles also inhabit the site.

The Bowling Green Bay Ramsar site meets six of the nine criteria:

Criterion 1: The Bowling Green Bay Ramsar site is in the North-east Coast Australian Drainage Division. It is a representative of many coastal and seasonal wetlands in the area, but it is particularly significant for its diversity and extent of wetland types.

Criterion 2: The Bowling Green Bay Ramsar site provides feeding grounds for the nationally vulnerable Green Turtle. The site also supports Dugong, listed on the International Union for Conservation of Nature Red List of threatened species as vulnerable. Saltwater Crocodiles also inhabit the site.

Criterion 3: Bowling Green Bay is particularly important for the abundance and diversity of bird species. The site regularly supports substantial numbers of all Australian waterbird groups, including post breeding populations of Brolgas and Magpie Geese.

Criterion 4: This Ramsar site is of special significance as breeding and feeding habitat for Brolgas and Magpie Geese.

Criterion 5: The Bowling Green Bay Ramsar site seasonally supports in excess of 20,000 waterbirds.

Criterion 6: The Bowling Green Bay Ramsar site is likely to seasonally support 1% of the total population of the Brolgas.

Is there a real chance or possibility that the proposed action will result in:

Issue	Y	N
areas of the wetland being destroyed or substantially modified?		X
a substantial and measurable change in the hydrological regime of the wetland?		X
a substantial and measurable change in the physico-chemical status of the wetland?		X
the habitat or lifecycle of native species dependent upon the wetland being seriously affected?		X
an invasive species that is harmful to the ecological character of the wetland being established or encouraging the spread of existing invasive species?		X

Issues to note

Potential impacts

Areas of the wetland being destroyed or substantially modified

The proposed action is located over 370 km from the Shoalwater and Corio Bay Ramsar site and 244 km from the Bowling Green Bay Ramsar site. The proposed action is not located within the same catchment of either Ramsar site. Therefore it is unlikely areas of the wetland will be destroyed or substantially modified.

A substantial and measurable change in the hydrological regime of the wetland

Shoalwater and Corio Bays are located in a region that experiences the highest tidal range on the eastern Australian coastal margin. Freshwater flows into the Ramsar site are highly variable in response to rainfall patterns. Most freshwater creeks in the Shoalwater Bay and Broome Head sections of the site are ephemeral. Sandy Creek and Water Park Creek maintain high levels of base flow throughout the year due to flow from Dismal Swamp and groundwater input from associated sand dunes. Freshwater inflow into the Corio Bay area is thought to be present through most years.

The movement of groundwater through the landscape is a critical process that sustains the wetlands of the Ramsar site. The groundwater resources of the Ramsar site are characterised by a mixture of fractured rock and primary porosity aquifers with flows that closely follow topography within the Shoalwater, Water Park Creek and Fitzroy River catchments.

Bowling Green Bay Ramsar site has unusually low rainfall for the region, with most rain falling in summer. The heavy storm rains of the summer wet season provide fresh water into the site, reducing the salinities of the shallow inshore marine areas, the surface soils of the saltpans and the mangrove areas. The Haughton River and many creeks feed into the wetland system. Since the catchment extends well into the hinterland of Bowling Green Bay, the Haughton River runs for 5-6 months of the year. During periods of extreme flooding it overflows northward directly into the Cromarty-Cleveland complex of swamps and floods out

into Cleveland Bay. Similarly, seasonal floodwaters from the Burdekin river overflow northward to discharge into Bowling Green Bay.

Groundwater is stored in two main aquifers that recharge from direct infiltration over the delta from rainfall, river flow and flood

The proposed action is located primarily within the Belyando Basin and partly within the Suttor Basin and extraction under the approved water licence will occur on the Suttor River, below the confluence with the Belyando River. This is in a separate catchment to both Ramsar sites. Therefore it is unlikely there will be a substantial and measurable change in the hydrological regime as a result of the proposed action.

A substantial and measurable change in the physico-chemical status of the wetland

Given the separation distance from the proposed action to both Ramsar wetlands, it is unlikely there will be a substantial and measurable change in the physico-chemical status of the wetland.

The habitat or lifecycle of native species dependent on the wetland being seriously affected

Shoalwater and Corio Bay Ramsar site provides habitat such as extensive sea grass, intertidal flats and mangroves, which are important for a number of wetland-dependent species including fish, dugongs and turtles. In particular, the Ramsar site provides feeding and roosting habitat for migratory birds along the East Asian-Australasian Flyway and is listed as a Flyway network site. Key shorebird species include grey-tailed tattler, bar-tailed godwit, eastern curlew, whimbrel, terek sandpiper and Australian pied oystercatcher.

The site has unusually low rainfall for the region, with most rain falling in summer. The heavy storms during the summer wet season provide fresh water into the site, reducing the salinities of the shallow inshore marine areas, the surface soils of the saltpans and the mangrove areas. The Haughton River and many creeks feed into the wetland system. Groundwater is stored in two main aquifers that recharge from direct infiltration over the delta from rainfall, river flow and flood.

Bowling Green Bay provides important habitat for about fifty percent of the migratory species listed on international conservation agreements. The intertidal and subtidal seagrass beds provide feeding habitat for the nationally threatened Green Turtle and the internationally threatened Dugong.

Given the separation distance between the proposed action and both Ramsar site, the proposed action is unlikely to adversely affect habitat that is critical for a native species dependent on both Ramsar wetlands.

An invasive species that is harmful to the ecological character of the wetland being established or encouraging of existing invasive species

Given the separation distance between the proposed action and Ramsar site it is unlikely the proposed action will further encourage the establishment of an invasive species that is harmful to the ecological character of the Shoalwater and Corio Bay Ramsar site and Bowling Green Bay Ramsar site.

Conclusion

On the basis of the available information, it is unlikely the proposed action will have an adverse impact on the ecological character of the Shoalwater and Corio Bay Ramsar site and the Bowling Green Bay Ramsar site.

Advice prepared by: s22 [redacted]

EACD Referral Officer: s22 [redacted]

Cleared by: s22 [redacted] Director: Wetlands Section

Signature:..... s22 [redacted]

Date: 2 July 2018.

Cleared by: Mark Taylor, Assistant Secretary: Wetlands, Policy and Northern Basin Branch

Signature: [handwritten signature]

Date: 3 July 2018

Attachments:

Attachment 1: Location of proposed action

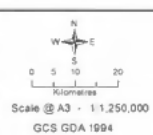
Attachment 2: Location of Ramsar sites

Sources:

RIS
Referral Documentation



Rev	Details	Date		
1	Details	22/01/15		
	DESIGNED	CHECKED		
	DRAWN	MD	CHECKED	MW
	APPROVED	MW	DATE	24/07/15



DISCLAIMER
 CDM Smith has endeavoured to ensure accuracy and completeness of the data. CDM Smith assumes no legal liability or responsibility for any decisions or actions resulting from the information contained within this map.

DATA SOURCE
 Adani Mining, 2015,
 QLD Government Open Data Source

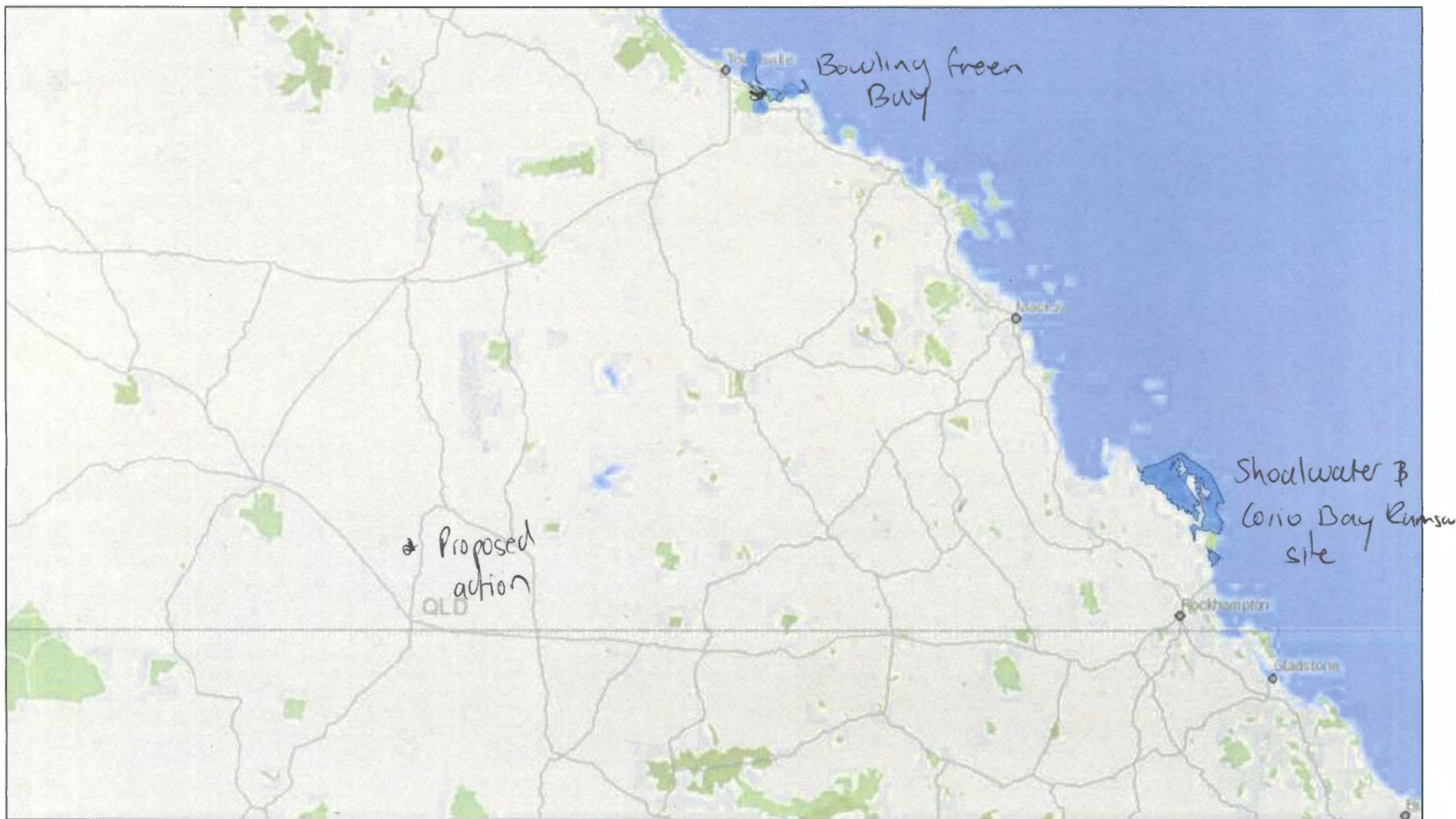
DESIGNER
CDM Smith
 cdmsmith.com

CLIENT
adani

FIGURE 1
Project Area Location

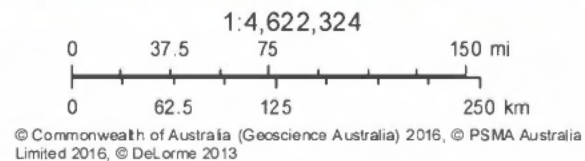
Proposed action and Ramsar sites

For Official Use Only



June 29, 2018

 Water - Ramsar Wetlands



**OFFICE OF WATER SCIENCE ADVICE
ADANI, NORTH GALILEE WATER SUPPLY SCHEME, QLD**

Requesting section	Queensland Assessments North	Requesting officer	§22
Date of request	21 June 2018		
EPBC reference	EPBC 2018-8191	OWS reference	OWS 2018-033
Project assessment stage	Referral		
OWS contact officer	§22		
Cleared by	§22 Director / Senior Principal Research Scientist Technical Analysis Team	Date of Advice	31 August 2018

The OWS provides technical advice for internal Departmental decision making and briefing purposes only. OWS advice should not be forwarded directly to external parties in the format provided. Please contact the OWS before providing the advice directly to an external source. The OWS does not speak for, and our response has not been endorsed by, the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development.

This document, prepared at the request of the Environmental Standards Division outlines the Office of Water Science's (OWS) technical advice on the Adani North Galilee Water Supply Scheme project.

Adani Infrastructure (Pty Ltd) proposes to construct and operate the North Galilee Water Scheme (NGWS) to provide a water supply under a commercial agreement to the operators of the Carmichael Coal Project and, potentially in the future, other resource-extraction projects in the northern Galilee Basin.

The proposal will harvest a portion of the flood waters from the Suttor River and pump it via a pipeline to a water storage dam for use in resource-extraction projects in the northern Galilee Basin.

The Queensland Government has already issued Adani a water licence to extract up to 12.5 gigalitres (GLs) of surface water a year. This is in addition to a groundwater licence to dewater the mine.

The proposal by Adani to establish water harvesting infrastructure in the Burdekin catchment, including a dam and a pipeline, was referenced in Adani's EIS for the Carmichael project in 2013. The current project referral is a change to the approved Carmichael project. It relates only to the proposed surface water supply requirements harvested from flood-waters from a

location on the Suttor River and Belyando River anabranch approximately 70 km downstream of the surface water extraction point in the approved action.

The referral confirms the presence of four EPBC Act listed threatened species - ornamental snake, squatter pigeon, koala and the black-throated finch - occurring in the project area and surrounds (CDM Smith, 2018). Brigalow, also EPBC Act listed, has been identified from desktop and field surveys to be present within and surrounding the project area. This Threatened Ecological Community (TEC) also provides suitable habitat for the ornamental snake. In addition, desk top mapping indicates this TEC to be present downstream of the intake location. Changes to the flow regime with the Suttor River, have the potential to impact riparian vegetation that may also be habitat for threatened species.

Question 1: Is the proposed harvesting of water from the Suttor River, as proposed in the referral, likely to impact the downstream environment of the river or groundwater dependent ecosystems?

1. The proponent relies on the assessment of potential impacts that was undertaken as a component of EPBC 2010/5736 Carmichael Coal Mine and Rail Project (CCMRP) that was assessed and approved in 2015. The approved 2015 project had a proposed surface water extraction point on the Belyando River, approximately 70 km upstream of the extraction point for this proposal. The volume of water proposed to be extracted remains the same (12.5 GL/yr).
2. The potential impacts from the proposed project are likely to be similar in nature to those detailed through the assessment of the CCMRP. However, the extent of those impacts (particularly relating to the pipeline) are likely to be more widespread. A number of matters remain unresolved regarding the proponent's water extraction licence and the operation of the extraction facility.
3. The OWS considers there is still uncertainty regards the potential impacts to Waxy Cabbage Palm (*Livistona lanuginosa*) – EPBC Act listed vulnerable, and the threatened ecological community Brigalow (dominant and co dominant) – EPBC Act listed endangered. These species are listed as potentially occurring downstream of the proposed extraction point.

Water related impacts

4. A summary of the changes to flows in the Suttor River that would be caused by the proposed project are provided in **Attachment 2**.
5. Water related impacts associated with the extraction of water would occur further downstream of where originally proposed (e.g. under the CCMRP). Therefore, the proposal would have less of an impact on the Belyando River upstream of the extraction point compared to the previously proposed CCMRP. Given the project is proposed at a location with a higher volume of annual flow, the overall effect of the proposed extraction on the river system is likely to be less pronounced. Further, the implementation of a 2,952 ML/day pass trigger and maximum extraction rate of 830 ML/day under the State water licence means that the maximum proportion of river flows that can be extracted by the proponent is 32 per cent, which is less than previously proposed.
6. The mean annual volume set aside under the water licence from the State's *Water Plan (Burdekin Basin) 2007* is 10,800 ML (10.8 GL) over the life of the project. The water is

licenced to be extracted under the strategic reserve which has a total of 335 GL per year. Therefore, to adhere to an average of 10.8 GL, in some years the proponent will not be able to extract their full 12.5 GL allocation.

7. The OWS notes the following uncertainties that have not been addressed by the proponent:
 - a. The Queensland Government is in the process of updating the Water Plan (Burdekin Basin)¹. It is unclear how this will affect the proponent's water extraction licence (if at all). It is noted by the Queensland Government that a range of amendments will be made to existing licences.
 - b. The proponent has not provided details of the cumulative impacts to the downstream environment. A table is provided with eight existing licences on the Suttor River (Appendix D, p 1 of the Water Licence Application), however it is unclear whether additional licences exist between the proposed extraction point and Dalrymple Lake. Assessments of changes to flow in the Suttor River should be undertaken with reference to all existing water users in this area. This is particularly important to determine the potential for impacts to threatened species that are potentially dependent on flows in the Suttor River.
 - c. Potential impacts to MNES dependent on water from the Suttor River would be most likely to occur when flows are close to the operational volume set by the pass trigger (2,592 ML/day). At this flow volume the proponent can extract 830 ML daily, which is approximately 32 per cent of flow in the river (assuming a constant flow rate for the day). By adding the cumulative extraction rates of other licenced users, the extraction volume increases to 1,271 ML/day, meaning that approximately 49 per cent of flows can be extracted, of which Adani's licence makes up 53.2 per cent of the extractive use. During dry years, droughts or under a potentially reduced rainfall regime (given the 60 year length of the approved action) this volume of extraction would reduce the volume and extent of water available for any downstream MNES and other users. As noted below, the presence of MNES downstream of the proposed project has not been determined.

Threatened species and communities

8. The proponent relies on assessments undertaken to support the EIS (e.g. GHD 2012). These assessments did not undertake field surveys to identify the presence of threatened species and/or communities within the environment downstream of the surface water extraction point proposed under the CCMRP, nor did they assess potential ecological impacts to the Suttor River downstream of the extraction point for that proposal. Site specific assessments of impacts to MNES downstream of the proposed new extraction point have not been provided to support the referral.
9. The department's mapping indicates potential large areas of Brigalow to be present downstream, along the riparian zone of the Suttor River. Further, the Waxy Cabbage Palm and Bluegrass (*Dichanthium setosum*), both EPBC Act vulnerable, may inhabit the downstream length of the Belyando River and Suttor Rivers between Dalrymple Lake and

¹ Department of Natural Resources, Mines and Energy, 2018. <https://www.dnrme.qld.gov.au/land-water/initiatives/burdekin-basin-consultation>

the proposed surface water extraction point. The presence or absence of these threatened ecosystems and species has not been assessed in the referral.

- a. Brigalow is commonly found associated with gilgai or inland wetland depressions. These water features are likely to provide habitat for the Ornamental Snake (*Denisonia maculata*) – EPBC Act vulnerable. The proposed project is within the likely range of the Ornamental Snake. A reduction in the regularity and duration of flooding would have the potential to reduce how often Ornamental Snake habitat is inundated. This would in turn impact on the habitat for Ornamental Snake food species such as frogs, the snake's primary food source.
- b. Field surveys and assessments to determine the presence or absence of the Ornamental Snake (within the proposed dam area, pipeline route and downstream of the extraction point) have not been provided.

Question 2: • Is the harvesting of water from the Suttor River likely to have a similar impact to the harvesting of water from the Belyando River as was proposed in the Carmichael assessment (EPBC 2010/5736)?

10. The location of the proposed water harvesting infrastructure for the North Galilee Water Supply Scheme is located approximately 70 km downstream of the water supply infrastructure that was approved through the original Carmichael assessment (See **Attachment 1**). The proposed site is approximately 2 km downstream of the confluence between the Belyando and Suttor Rivers. Water will be extracted from both the Suttor River and from an anabranch of the Belyando River
11. From a water flow perspective, the potential impacts of the proposed project would be similar and even less pronounced than compared to the impacts of the proposal to extract directly from the Belyando River upstream.
12. While the proposed change means that the water extraction infrastructure is located at a point of higher average annual flows, it is difficult to determine if the impacts to MNES would be similar. Vegetation MNES (and any species that it provides habitat for) downstream of the previous location and the proposed location will have adapted to rely on the water quantity and quality conditions specific to these different habitats. Any change to these conditions has the potential to impact the health or lifecycle of any downstream populations of MNES.

Question 3: Does the erosion and sediment control plan adequately mitigate impacts to MNES?

13. The primary impact to MNES is likely to be due to clearing, there is little that can be done to mitigate this direct impact.
14. The erosion and sediment control plan (SECP) does not adequately mitigate the potential impact of traversing waterways and the risk of erosion from waterway crossings. Appendix C of the SECP identifies the waterways to be crossed, however little detail on the measures to prevent erosion or the infrastructure to be used to cross the watercourses has been provided. Further, the table at Appendix C shows that the erosion potential for every watercourse to be crossed has not been assessed. Further detailed mitigation options for preventing erosion during a range of flow and weather conditions should be

provided for each watercourse crossing. This should be undertaken with reference to a geomorphology and stream flow assessment at each crossing location.

15. Other matters, such as sedimentation reduction along the proposed pipeline excavation and access tracks are adequately described and likely to be mitigated using the SECP.

[Water Assessment Information Portal \(WAIP\)](#): for more information on water-related environmental impacts, please see the WAIP (accessible on the intranet via Home ⇒ Themes ⇒ Water ⇒ Water Assessment Information Portal).

References

EIS, AEIS and SEIS, Accessed from Queensland Department of State Development, Manufacturing, Infrastructure and Planning.

<http://www.statedevelopment.qld.gov.au/assessments-and-approvals/carmichael-coal-environmental-impact-statement.html>

Including GHD 2012. Mine Terrestrial Ecology Report – Appendix N1

Queensland Department of Natural Resources, Mines and Energy, 2018.

<https://www.dnrme.qld.gov.au/land-water/initiatives/burdekin-basin-consultation>

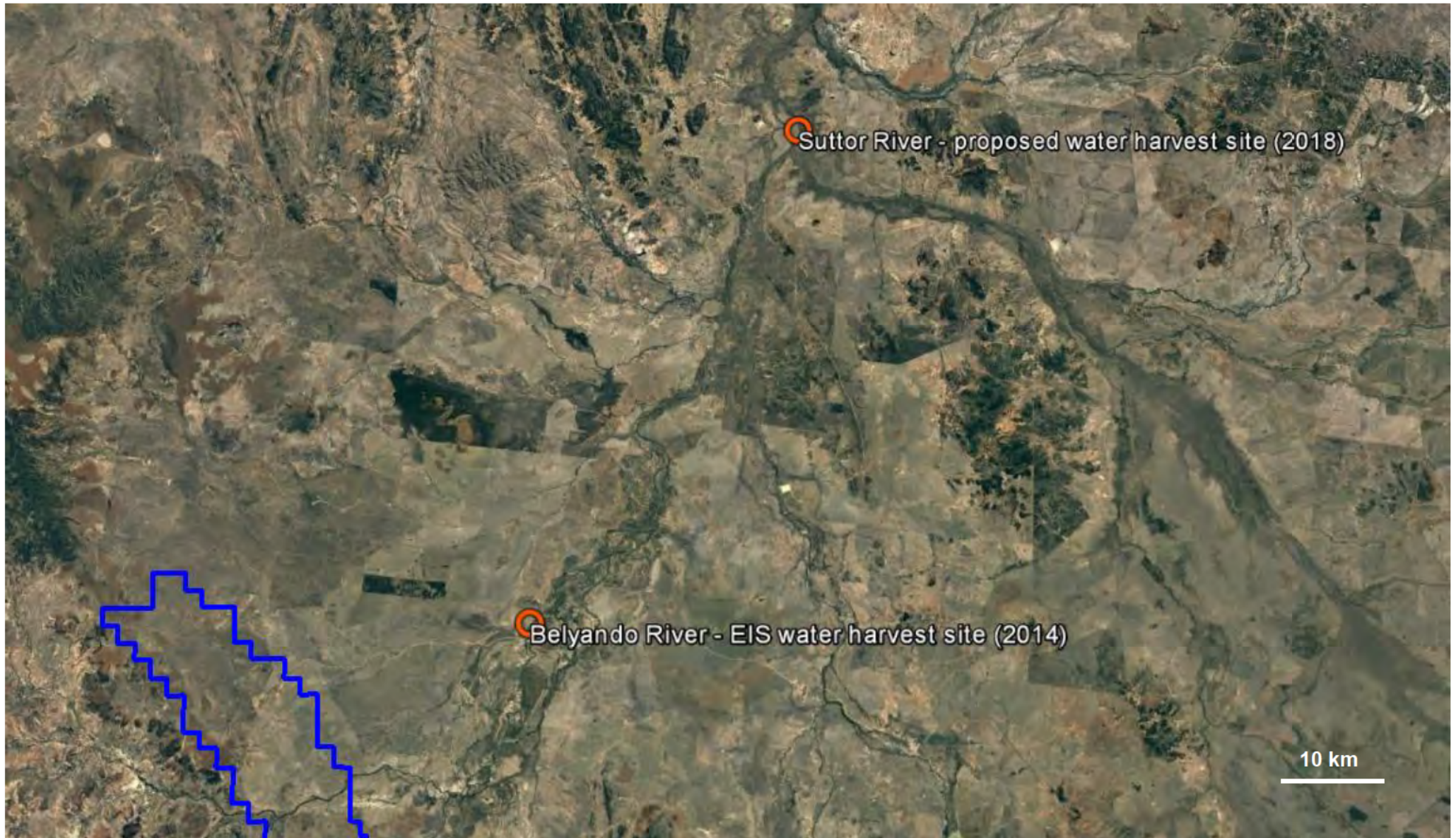
Other documentation reviewed

Referral and attachments

CDM Smith 2018. Attachments Supporting EPBC Act Referral.

Additional Information provided on 7 August 2018 to ESD. Provided to OWS on 15 August 2018.

Adani Infrastructure Pty Ltd 2018. EPBC 2018/8191 – Request for additional information for the North Galilee Water Scheme, Galilee Basin, Queensland.



QLD DNRME WMDB - Production SQL

HYFLOW V180 Output 26/04/2018

Time Weighted Stream Discharge Duration Curve.
Stream Discharge in Cumecs, Instantaneous Values. Interval 1 Days

Site 120303A Suttor_R St Anns 22/08/1967..18/07/2017

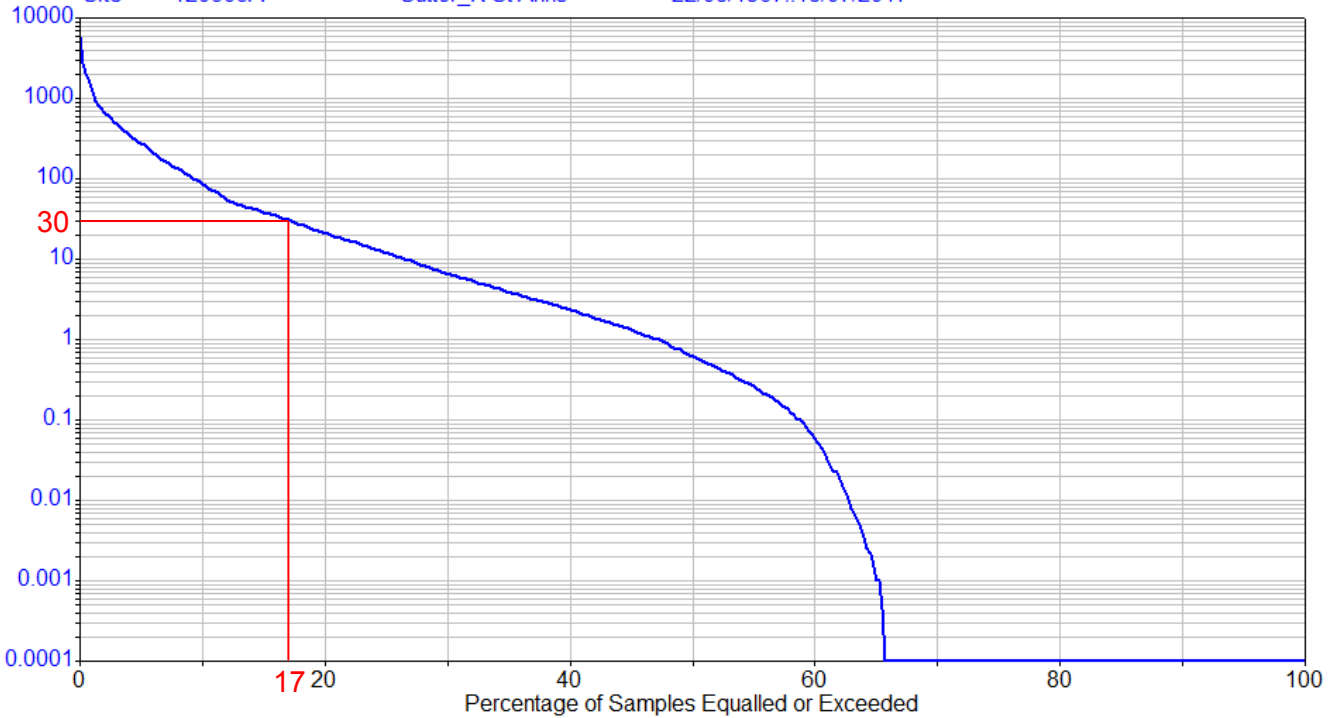


Figure 1: Discharge curve for Suttor River at St Anns Gauge (120303A) – Source: <https://water-monitoring.information.qld.gov.au/> (120303A Suttor River a St Anns)

The proponent has a 2,592 ML/day pass trigger (Figure 1). This means that they can only extract surface water when flows in the Suttor River exceed this volume. The discharge curve for stream gauge 120303A (Suttor River St Anns) is measured in Cumecs (cubic metres per second). A flow volume of 2,592 ML/day is equivalent to approximately 30 Cumecs. Adani can therefore, on average, extract their proposed volume of water approximately 17 per cent of the time while the river flows.

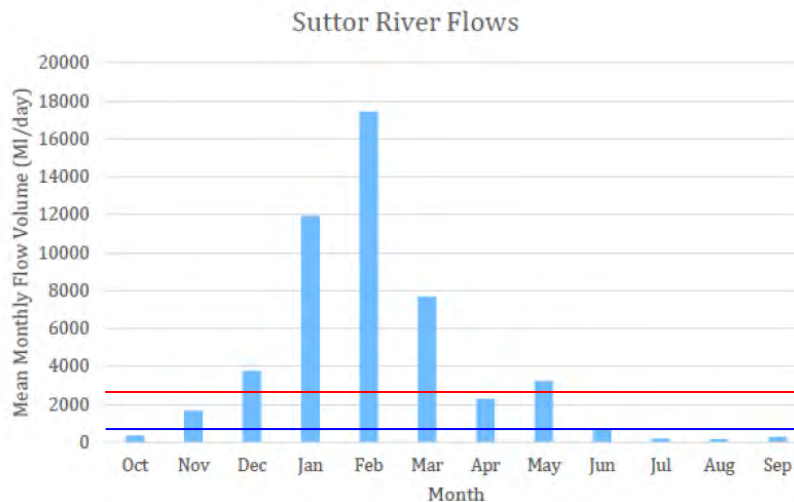


Figure 2: Mean daily flow each month, Suttor River (Source Adani, Response to request for further information, p. 7.

The 2,592 ML/day pass trigger is indicated by the red line (Figure 2). Individual flow events in the river may exceed the pass trigger for short periods of time, however the above graph shows that on average the proponent will only be able to extract water from the Suttor River for 5 months of the year. In the months where average flows are marginally higher than the pass trigger, potential impacts to downstream reaches of the river will be greater as a higher proportion of the total water will be extracted.

The dark blue line shows the proponent's water licence daily extraction allowance of 830 ML. During average flow conditions there will be four months of the year where average daily flows do not add up to the proponent's total daily extraction limit. Given a maximum daily allowance of 830 ML and a pass trigger of 2,592 ML/day), the maximum amount of water that can be extracted at the minimum flow volume (set by the pass trigger) within the river is approximately 32.02 per cent. This leaves approximately 1,762 ML of water to flow down the river. This is therefore the greatest possible impact that this proposed project can have on percentage of river flows. At maximum extraction of 11,600 litres per second it would take approximately 12.4 days to extract 12.5 GL. The effect of this extraction is presented below, against the mean total flow per month at the St Anns Gauge. It is important to note that, if this level of extraction occurred the proponent would no longer be able to extract water for the rest of that year because their 12.5 GL entitlement would already be reached.

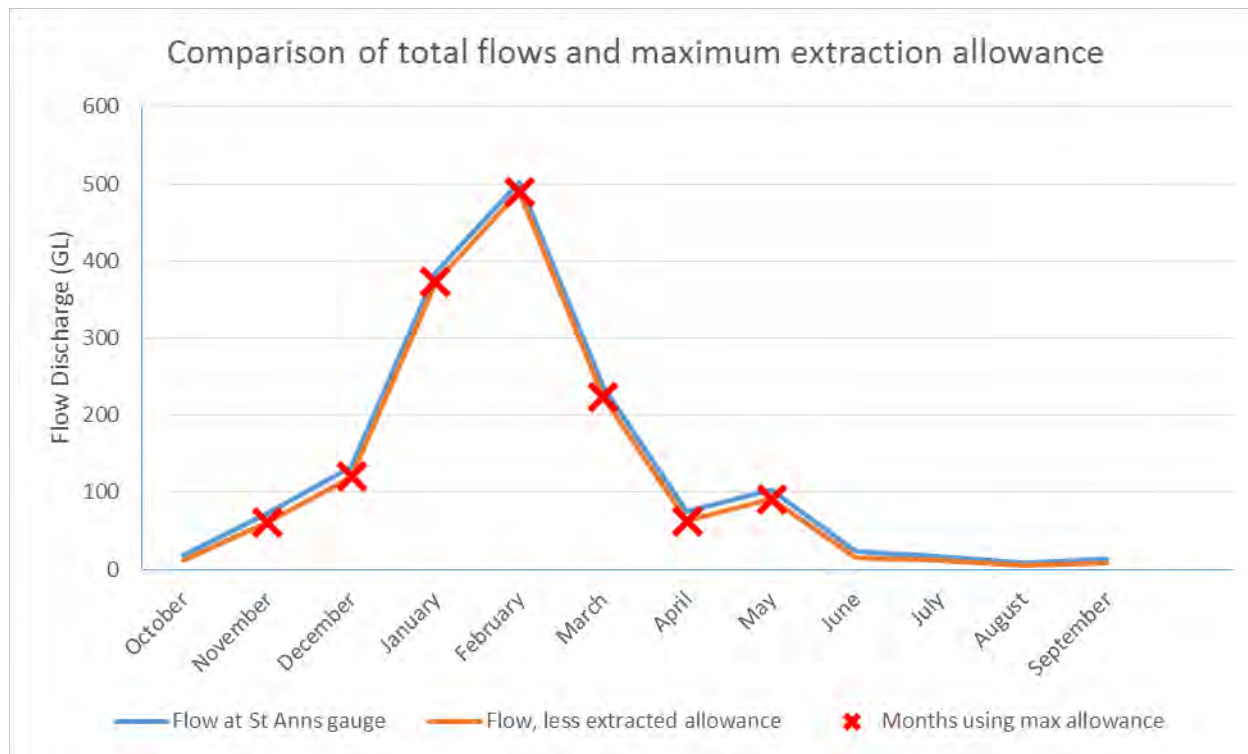


Figure 3: A comparison of mean monthly flows and the difference in mean monthly flows if the maximum allowed extraction were taken for that month. The crosses indicate that between November and May, in an average month, 12.5 GL would be available for extraction. October and June to September do not have sufficient flows on average to allow extraction of 12.5 GL to be extracted.

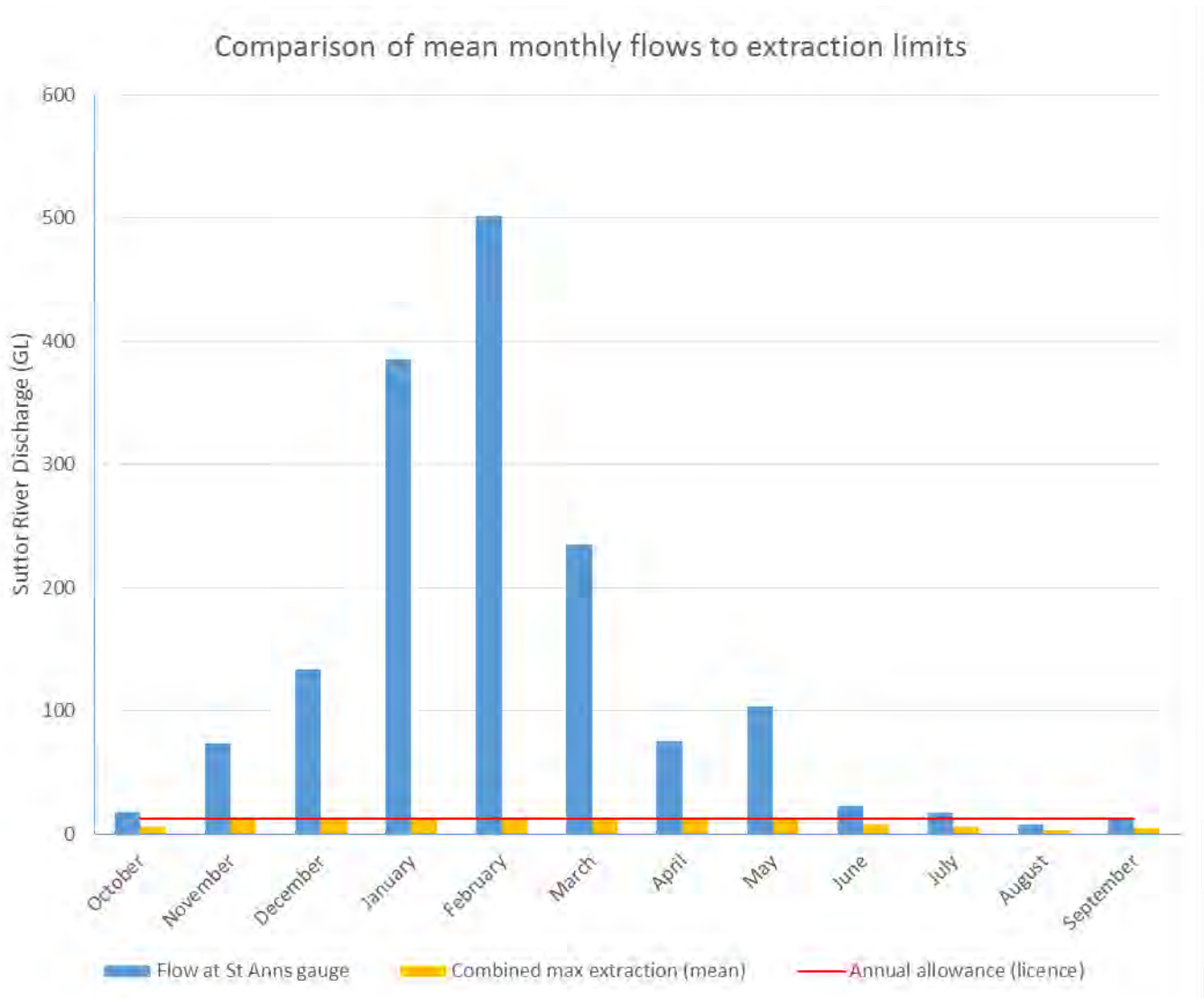


Figure 4: Comparison of mean monthly flows and maximum potential extraction. Shows the maximum available extraction as a proportion of mean total monthly flow through the St Anns gauge on Suttor River. Combined max extraction shows that even in months where total flows are greater than the volume set by the annual allowed extraction, the per cent of flow available to take does not necessarily reach the annual total.

The mean annual total flows within the Burdekin Basin, which includes the Belyando River System (and Suttor River), of 1,850 GL is measured well downstream. The extraction volume of 12.5 GL is slightly greater proportion of the flows near the extraction point. Mean annual flow at the St Anns (120303A) gauge is 1,493 GL. Adani's annual extraction licence allows extraction of 0.83 per cent of the mean total flow through the St Anns gauge.

It is generally not appropriate to consider annual average flows when assessing potential impacts to water courses, particularly where the water course has a clear seasonal flow regime (as is the case in the Belyando and Suttor Rivers). The below graph (Figure 5) presents a dry year with low flows through the St Anns Gauge. During this year, flows were above the Adani pass trigger for 883 hours (36.8 days), which is approximately 10 per cent of the year. At the allowed maximum extraction volume of 830 ML/day this year still has more than double the amount of flow over the pass trigger available for Adani to extract their allocated 12.5 GL (e.g. 36.8 days X 830 ML/day = 30.544 GL). During this period, Adani would have been able to extract their full 12.5 GL annual extraction during the December/January and June flow events. Maximum extraction (for Adani) during the March flow events would be 6.76 GL over a period of 6 days and 18 hours. Maximum extraction (for Adani) during the short (20 hours) flow event at the end of January would be 0.83 GL. These extraction volumes are based on the 11,600 L/sec rate and do not incorporate the cumulative effects of other

water extractors. The impact of this extraction on MNES would be most pronounced on the receding limb of the flow curve or at the extremities of the Suttor River or Belyando River anabranch.

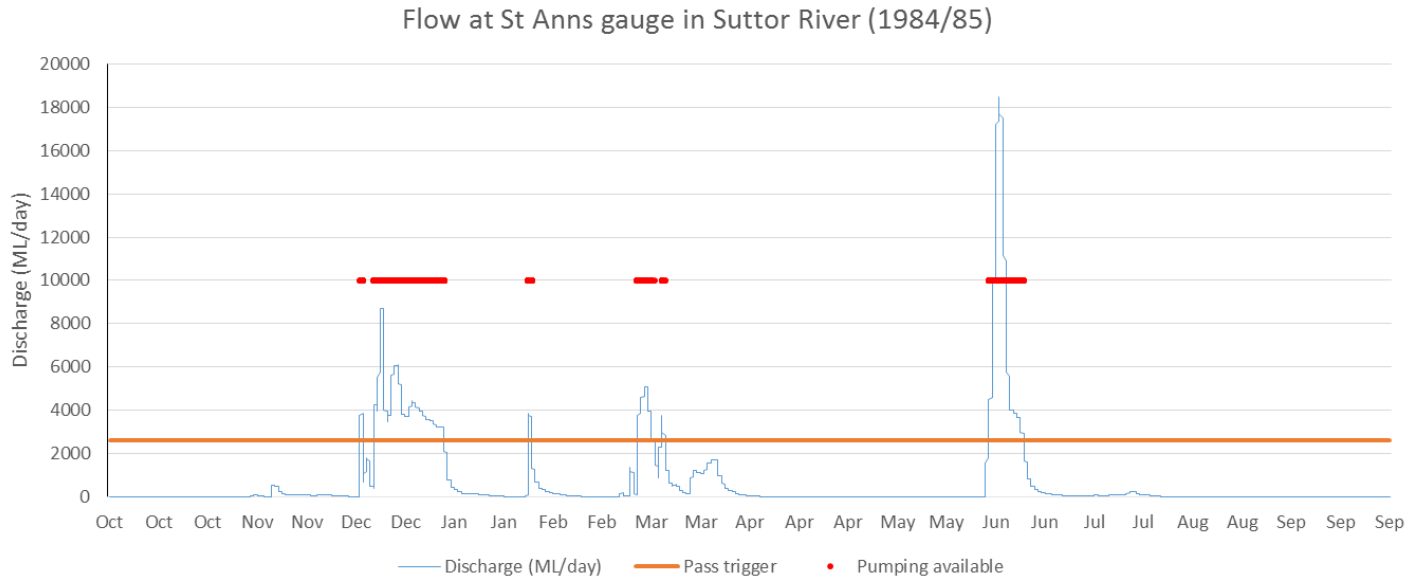


Figure 5: Measured flow in the Suttor River at St Anns Gauge (120303A) for the period 1 October 1984 to 30 September 1985 (these months used for consistency with other graphs provided by the proponent). Red lines indicate periods where flows in the river were above the pass trigger volume (2592 ML/day) and therefore pumping would be permitted under the extraction licence.

PROTECTED SPECIES AND COMMUNITIES BRANCH
MIGRATORY SPECIES SECTION EPBC ACT REFERRAL ADVICE

Referral: EPBC 2018/8191 – North Galilee Water Scheme (Qld)

Issues to note and potential impacts

Although listed migratory birds may use habitats in the area (i.e., forest/farmland habitat, seasonally ephemeral wetlands, permanent wetlands or the air space above the site), the project is unlikely to cause adverse impacts to an 'ecologically significant proportion' of the population of any listed species. Adverse impacts are considered unlikely.

The downstream impacts on potential important habitat for threatened and migratory shorebirds (i.e. Burdekin Delta) would be difficult to confirm due to the presence of the Burdekin Dam and other hydrological impacts between the proposed action and the wetland site.

Conclusion

On the basis of the available information, the proposed action is unlikely to result in adverse impacts to listed migratory species.

Prepared by: s22 [redacted]

Cleared by: s22 [redacted] Director, Migratory Species Section

Date: 12/09/2018

2018/8191 North Galilee Water Scheme, central Queensland
Attachment D: Public submissions

Name
2018-8191 MC18-009443 Adani Galilee Basin proposal s47F .msg
2018-8191 MC18-009445 Adani Galilee Basin proposal s47F .msg
2018-8191 Referral-Submission s47F .msg
2018-8191 Referral-Submission-CCBR.msg
2018-8191 Referral-Submission-CCCAG.docx
2018-8191 Referral-Submission s47F .docx
2018-8191 Referral-Submission-ECOCeQ.pdf
2018-8191 Referral-Submission-FAOC.docx
2018-8191 Referral-Submission-FfCA.pdf
2018-8191 Referral-Submission-Greenpeace Australia Pacific.pdf
2018-8191 Referral-Submission-Greenpeace-Legal Opinion-Water Trigger EDO NSW.pdf
2018-8191 Referral-Submission-Greenpeace-Legal Opinion-Water Trigger.msg
2018-8191 Referral-Submission-LTGA.pdf
2018-8191 Referral-Submission-LTGA-20180830.pdf
2018-8191 Referral-Submission-MC18-010369-response.docx
2018-8191 Referral-Submission-MC18-010514.msg
2018-8191 Referral-Submission-MCG.docx
2018-8191 Referral-Submission-PTBA.pdf
2018-8191 Referral-Submission-SAGG.docx
2018-8191 Referral-Submission-SAT.pdf
2018-8191 Referral-Submission-SCAAN.msg
2018-8191 Referral-Submission s47F pdf
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2018-8191-Referral-Submission-350.org-Email-20180625.pdf
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2018-8191-Referral-Submission-NQCC-Att.pdf
2018-8191-Referral-Submission-NQCC-Email.pdf
2018-8191-Referral-SUBmission-RAW-Att-20180625.pdf
2018-8191-Referral-SUBmission-RAW-Email-20180625.pdf

s22

From: s47F [redacted]@gmail.com>
Sent: Friday, 15 June 2018 5:22 AM
To: yourenvminister
Subject: MC18-009443 Adani Galilee Basin proposal - ESD

Categories: For Info

Contact your Minister request notification

Contact your Minister for the Environment and Energy webform submitted on 15/06/2018, 5:22

PDR Id: null

Minister name: Josh Frydenberg

Title: Ms

First name: s47F

Last name: s47F

Email: s47F [redacted]@gmail.com

Organisation:

Address: s47F [redacted]

Phone:

Subject: Suttor River water for the Adani mine

Comments: Dear Mr Frydenburg, Letting the Adani mine use water from the Suttor River is astounding and unconscionable. In the midst of a drought, how can you even contemplate this? What is your long game? Where is our country headed? Please can you put a stop to this terribly risky project. Yours sincerely, s47F [redacted]

Attachments: 0 file(s) attached.

s22

From: s47F [redacted]@bigpond.net.au>
Sent: Friday, 15 June 2018 1:58 AM
To: yourenvminister
Subject: MC18-009445 Adani Galilee Basin proposal - ESD

Categories: For Info

Contact your Minister request notification

Contact your Minister for the Environment and Energy webform submitted on 15/06/2018, 1:58

PDR Id: null

Minister name: Josh Frydenberg

Title: Mr & Mrs

First name: s47F [redacted]

Last name: s47F [redacted]

Email: s47F@bigpond.net.au

Organisation:

Address: s47F [redacted]

Phone:

Subject: Leave Galilee Basin low quality coal in the ground

Comments: Don't build the Adani mine. Show some leadership. By now you will have seen science that if emissions continue, by 2070 one third of the Antarctic ice sheet will be melted and Port Phillip Bay will be lapping doorsteps up as far as Hawthorn. A colleague has just returned from working in far western Qld. He says it's desert. You know how much water Adani will take from underground and what's left of rivers. Show some guts and brains for God's sake. Attributed to a Chief in Africa.. Words to effect not exact 'We do not bequeath the land to our descendants, we have had it loaned to us by them.' Your great grandchildren are watching.. s47F [redacted]

Attachments: 0 file(s) attached.

s22

From: s47F <campaigns@good.do>
Sent: Thursday, 21 June 2018 3:50 PM
To: EPBC Referrals
Subject: Submission on Adani North Galilee Water Scheme - my own thoughts and the general submission...

Dear Minister Josh Frydenberg,

Please accept this as a submission on the Adani North Galilee Water Scheme, reference number 2018/8191.

I have a series of questions about this:

how can it be considered without a full environmental impact study?

My mother's family come from Charter's Towers – her Dad was shearer. My father and his first wife ran sheep out near Julia Creek during the appalling drought of the 1930s. We are seeing so many farming families desperate now in Queensland with yet another drought.

I find it appalling that our very precious water resources are being handed over to Adani without proper study. This – described below – is crazy and the future possibility that other mines would call on this riverine supply makes proper study absolutely essential.

Old farmers are struggling with drought already. Don't diminish their potential water supplies like this. They should be your first priority, minister. Already existing businesses and communities – not something that is still pie in the sky.

Adani wants to extract 12.5 billion litres of water from the Suttor River and send it through a new, 110km pipeline to the Carmichael coal mine.

In its referral, Adani claims that the scheme is not captured by the federal water trigger and would not have a significant impact on threatened species, which means it would not require a full environmental impact assessment.

Adani also wants its water infrastructure to supply other proposed Galilee Basin coal mines in the future. This could triple the amount of water taken – all without proper scrutiny or public consultation.

If you approve this, it will be yet another special deal for Adani that hangs Queensland farmers, local communities and the environment out to dry, at a time when most of the surrounding region of Central Queensland is in drought.

In the past, other pipelines for mining projects in Central Queensland that are only 1/16th the length of the Adani pipeline have been required to conduct proper environmental impact assessments.

Therefore, we call on you to recognise the water scheme as a controlled action under the Environment Protection and Biodiversity Conservation Act 1999 because of its likely impacts on water resources, threatened species and the Great Barrier Reef World Heritage area.

You must require that Adani conduct a full environmental impact assessment of the scheme and that it is thoroughly reviewed by scientists on the Independent Expert Scientific Committee.

Yours sincerely, s47F Annerley, Queensland, 4103, Australia

_____ This email was sent by s47F [REDACTED] via Do Gooder, a website that allows people to contact you regarding issues they consider important. In accordance with web protocol FC 3834 we have set the FROM field of this email to our generic no-reply address at campaigns@good.do, however s47F [REDACTED] provided an email address (s47F [REDACTED]@gmail.com) which we included in the REPLY-TO field.

Please reply to s47F [REDACTED]@gmail.com.

To learn more about Do Gooder visit www.dogooder.co To learn more about web protocol FC 3834 visit: www.rfc-base.org/rfc-3834.html

From: Climate-Change Balmain-Rozelle <ccbalroz@gmail.com>
Sent: Monday, 25 June 2018 9:44 AM
To: EPBC Referrals
Subject: Comments on: Referral EPBC # 2018/8191 Referral Title: North Galilee Water Scheme Project

Please accept this submission on behalf of Climate Change Balmain-Rozelle to the EPBC referral for the North Galilee Water Scheme (NGWS) proposed by Adani Infrastructure Pty Ltd (2018/8191) (Adani).
Referral EPBC # 2018/8191
Referral Title: North Galilee Water Scheme Project

Climate Change Balmain-Rozelle (CCBR) is a community group from Sydney's Inner West working towards a world which relies less and less on fossil fuels, and more and more on clean renewable energy, reducing carbon emissions and heading off the damaging effects of global warming. It has 1000 supporters, and our members regularly review, research and make submissions to government enquiries.

We recommend that you declare the Scheme as a controlled action under s67 of Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) because it will have, or is likely to have an impact on matters of national environmental significance.

The "North Galilee Water Scheme Project" proposes to expand the existing 2.2 billion litre Belyando Junction Dam to 10 billion litres. Adani Infrastructure proposes to extract 12.5 gigalitres per annum from the Suttor River and Burdekin Basin.

As noted in the referral, the proposal includes a 110 km water pipeline to transport this water "...to the operators of the Carmichael Coal Project...". The dam and pipeline are clearly intended for use in the proposed large Carmichael coal mine, and this proposal is clearly an action that involves "large coal mining development" as defined under s 24D of the EPBC Act.

We believe this will have a significant impact on water resources.

The EPBC Act states that it will protect "a water resource in relation to coal seam gas development and large coal mining development". The "water trigger" allows impacts to be "comprehensively assessed at a national level". We believe this means the EPBC should act to protect this water resource. At the very least, approval of this project should be conditional on the outcome of a comprehensive assessment that is evaluated at a national level. Licenses granted by State and local government authorities need not stand in the way of nationally significant environmental protection.

Disturbing 1,234 hectares of land, increasing the dam's capacity by 7.8 billion litres and removing 12.5 gigalitres of water a year through the pipeline, has potential negative impacts on the Suttor River, local wetlands and all landscapes crossed by the pipeline. The referral states that the pipeline will run through wetland areas protected by State legislation. We also believe this disturbance of land and loss of river water is likely to affect threatened wildlife species and ecological communities in the area. According to the Queensland Government's Wetlands database, threatened species in the area include the Bridled Nailtail Wallaby, Koala, Greater Glider, Northern Quoll, Black-throated Finch, Squatter Pigeon, Common Death Adder, and Estuarine Crocodile.

The impact of disposing of 2.5 gigalitres of water per year, after use in the coal mine should also potentially be assessed thoroughly at a national level. If large volumes of run-off containing silt and other pollutants reach the ocean, there could be impacts on the Great Barrier Reef Marine Park area. This is another resource protected by the EPBC.

We also question the veracity of two statements made in Adani's referral:

"The Proponent has not been the subject of any environmental legal proceedings that have resulted in fines or prosecution "

"Both Adani Infrastructure and the Australian parent companies not been subject to any proceedings under a Commonwealth, State or Territory law."

This is not entirely factual. In August 2017 Adani were fined \$12,000 for a stormwater breach at the Abbott Point coal terminal in Queensland. This is being appealed, but the fact remains that a legal proceeding against the Adani Group resulted in a fine. We note that it has been alleged that Adani altered a consultant's report submitted as part of the appeal.

The Adani Group's environmental credentials are concerning, due to many fines issued for international legal breaches. The Chief Executive of Adani Australia was in a senior position at a mining company found criminally liable for poisoning a river in Zambia. In India, Adani were fined \$4.8m for illegally clearing mangroves at Mundra and at Hajira, destroying the livelihoods of fishermen. In Mumbai, the Adani Group delayed for five years before cleaning up after a coal ship sank. In view of their history, we feel there is a strong risk that the Adani Group will not exercise due environmental care in the delivery of this project.

We hope you will act to safeguard these matters of national environmental significance. A comprehensive assessment would be appropriate before considering approval of this proposal. We believe the assessment should be made at a national level.

Yours sincerely,

s47F

Vice-President

s47F

Climate Change Balmain-Rozelle

www.climatechangebr.org

P.O Box 890 Rozelle 2039



c/- PO Box 6737
Coffs Harbour Plaza
NSW 2450

23 June 2018

Referrals Gateway
Environment Assessment Branch
Department of the Environment
GPO Box 787
Canberra ACT 2601
By email: epbc.referrals@environment.gov.au

Proposed Action: North Galilee Water Scheme (NGWS) Project
Reference Number: 2018/8191

Submission from: Coffs Coast Climate Action Group

Contact: s47F [REDACTED]

This submission is on behalf of Coffs Coast Climate Action Group to the EPBC referral for the North Galilee Water Scheme (**NGWS**) proposed by Adani Infrastructure Pty Ltd (2018/8191) (**Adani**).

The Coffs Coast Climate Action Group (CCCAG) is an energetic and diverse community of local residents working as a collective to promote climate change awareness and action at the regional level and input into policy development at all levels of government. We formed in late 2013, and have an active membership and supporter base of over 1000 people.

Summary

We recommend that you declare the NGWS as a controlled action under s 67 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) because it will have, or is likely to have an impact on matters of national environmental significance (**MNES**).

Adani claims in their referral documents that the NGWS project is not a controlled action. Contrary to that conclusion, it is clear that:

1. The NGWS project must be assessed under the water trigger because:
 - a. the NGWS project is designed solely to facilitate extraction of coal from the Carmichael coal mine. Therefore, it is an action that involves “large coal mining development” as defined under s 24D of the EPBC Act; and
 - b. there is a real chance or possibility that it will have a significant impact on water resources in the Belyando Suttor sub-catchment.
2. The NGWS is also likely to have a significant impact on a number of threatened species and communities, including the Black Throated Finch, Ornamental Snake and the Koala.
3. Projects affecting the same threatened species with a far smaller footprint have been declared as controlled actions in the past by the Department of Environment and Energy.
4. The potential impact of the Suttor River water take and the associated infrastructure on the Great Barrier Reef World Heritage Area has not been considered by the proponent.

Recommendations

We recommend that you:

1. Declare the NGWS project a controlled action with controlling provisions of:
 - Listed threatened species and communities
 - A water resource in relation to coal seam gas development and large coal mining development
 - World Heritage properties
 - Great Barrier Reef Marine Park
2. Require the full extent and impacts of the project on MNES to be properly assessed under the EPBC Act via a full Environmental Impact Statement.
3. Obtain expert advice on the water impacts of the project from the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (**IESC**).
4. Require the proponent to fully disclose the environmental compliance record of all associated companies both here and overseas in order for the public to properly understand the compliance history of the Adani group.
5. Recognise that the action is part of a larger action proposing to take far greater volumes of surface water than identified in the referral, by:
 - Exercising your discretion under s74A of the EPBC Act to reject the referral, or
 - Utilising your powers under s76 (2) of the EPBC Act to require Adani to provide further information about the full extent of impacts to surface water, including the proposal to supply other coal mines from the NGWS and other existing water permits held by Adani for construction purposes in the catchment.

Project Summary

The NGWS project is located approximately 160km north-west of Clermont in Central Queensland.

In times of flood, Adani plan to harvest water from the Suttor River downstream of its confluence with the Belyando River. The water will then be stored in a nearby upgraded dam then piped to the mine.

The project consists of:

- flood water harvesting infrastructure on the Suttor River
- a 10 GL (billion litre) dam (the upgrade of a 2GL dam is proposed)
- pumping facilities and a 4km pipe linking the harvester to the dam
- a 110km pipeline with pumping stations connecting the dam to the proposed Carmichael coal mine.

Adani provide a total disturbance footprint for the NGWS of 508.98 hectares. Adani estimate that construction of the NGWS will run from January 2019 to March 2020.

Adani holds a water licence entitling it to take 12.5 billion litres a year from the Suttor River at the location of the proposed water harvester.¹ This was obtained from the Queensland Government in March 2017 with the water being allocated from a State strategic reserve.

Water Resources

Section 24D of the EPBC Act provides as follows:

“(1) A constitutional corporation, the Commonwealth or a Commonwealth agency must not take an action if:

(a) the action involves:

- (i) coal seam gas development; or*
- (ii) large coal mining development; and*

(b) the action:

- (i) has or will have a significant impact on a water resource; or*
- (ii) is likely to have a significant impact on a water resource.”*

The term “large coal mining development” is defined in section 528 as:

“any coal mining activity that has, or is likely to have, a significant impact on water resources (including any impacts of associated salt production and/or salinity):

- (a) in its own right; or*
- (b) when considered with other developments, whether past, present or reasonably foreseeable developments”.*

In their referral, Adani state that the NGWS project does not constitute large coal mining development for the purposes of the EPBCA, and therefore that it is not a controlled action for that provision. In an attachment to the referral, Adani state that ‘*Activities relevant to the water trigger are those that form part of the process of extracting coal and not merely be associated with it*’.

However, the NGWS most certainly does constitute coal mining activity for the purposes of the EPBC Act and as such, it should be considered a controlling provision for the action. We set out below the evidence as to why the NGWS is large coal mining development for the purposes of s 24D of the EPBC Act.

The Suttor River water take and infrastructure has not been assessed previously

In the original Environmental Impact Statement (EIS) documents for the Carmichael Coal Mine, Adani stated that the expected average water demand of the Carmichael mine would be in the order of 12 billion litres (12GL) per annum. This represents the additional water that

¹ Water Act 2000, Water Licence Reference 617268, Expiry 30/06/2077, issued to Adani Infrastructure Pty Ltd

the project would require on top of that resulting from operational activities such as pit dewatering and on-site rainwater management.

In the original EIS (2012), Adani claimed that this additional water would be sourced from on-site sources and from bores to be drilled along nearby creeks. By the time of the SEIS (late 2013), Adani had modified its plans to include a flood harvesting scheme near to the mine site on the Belyando River with a capacity equal to the mine's total additional water needs.²

It was only after the SEIS that Adani moved towards supplying the needs of the mine from flood harvesting of the Suttor River. So, neither the proposed take of water from the Suttor River, nor the associated infrastructure, was considered or assessed under the original EIS for the project.

The NGWS has been formally recognised as part of the Adani Combined Project

The NGWS has been explicitly recognised as being part of the Adani Combined Project by the Queensland Government. In October 2016, the Queensland Minister for State Development, Planning and Infrastructure declared the Adani Combined Project to be both 'critical infrastructure' and a 'prescribed project' under the *State Development and Public Works Organisation Act 1971* (Qld). The NGWS was listed as comprising a key component of that project.

The volume of water take is likely to constitute a significant impact

The take from the Suttor River of up to 12.5GL per year for the NGWS project is likely to constitute a significant impact on water resources because it amounts to more than 50% of the total strategic reserve for the relevant sub-catchment under the Queensland *Water Plan (Burdekin Basin) 2007*.

Water take and infrastructure does constitute a 'coal mining activity'

The term 'coal mining activity' in the definition of 'large coal mining development' includes activities such as water extraction that form part of a large scale development for the mining of coal. The term is not restricted to 'coal mining' only, as appears to have been concluded by Adani.

When the 'water trigger' was introduced by way of the *Environmental Protection and Biodiversity Conservation Amendment Act 2013* (Cth), the then Minister for Sustainability, Environment, Water, Population and Communities in his second reading speech referred, amongst other things, to the "irreversible depletion.....of our surface and groundwater resources".

The relevant *Bills Digest*, which was laid before Parliament before the Bill was enacted, considered the impacts of large scale coal mining on water resources. These included the use of water 'for processing and dust suppression and other mining activities' as a necessity of coal production. In considering a particular coal mine, the *Digest* describes operational water use of 21GL per year from surface and sub-surface sources as 'an appreciable amount' compared to a total annual extraction of around 550GL.

² Carmichael Coal Mine and Rail Project SEIS (Nov 2013), Updated Mine Project Description, Appendix B, P. 96-97

Therefore, it is clear that the correct statutory construction of the EPBC Act is that the extraction of water for use in dust suppression and processing does constitute a coal mining activity, especially when read in the context of the objects of the legislation. Indeed, the reference to the water supply required to operate the mine in the original EIS for the Carmichael coal mine supports that conclusion – it is an integral part of the coal mining activity and without it, the mine cannot operate.

We note that the relevant [Significant Impact Guidelines 1.3](#) (Coal Seam Gas and Large Coal Mining Developments - impacts on water resources) are quoted by Adani as supporting their argument that water extraction and infrastructure does not constitute a coal mining activity. We note that the non-statutory guidelines do not supplant the law. Most notably, the guideline is not a relevant consideration for the Minister in deciding whether the NGWS project is a controlled action and which provisions are controlling provisions under s 75(1) EPBC Act.

The Guidelines state that extraction of CSG or coal must form part of the activity and not merely be associated with it, and specify that “*where referred along with new or modified extraction of CSG or coal, the following activities will form part of the extractive process: water supply for use in the extraction of CSG or coal.....However, these activities will not independently be CSG or coal mining development where there is no new or modified extraction of CSG or coal*”.

However, the NGWS is part of the activity of the Carmichael coal mine and the mine cannot operate without it. The need to supply the water was identified in the original coal mine proposal, and therefore it undoubtedly forms part of the activity and is not ‘merely associated with it’. This conclusion is supported by the fact that the NGWS has been formally identified as part of the Adani Combined Project by the Queensland Government.

The NGWS proposes to provide water to other mines currently under EPBC consideration

Adani notes that the NGWS could be used to supply water to other proposed coal mines in the surrounding area, but does not specify what volume of water will be supplied or how this will relate to 12.5GL they have earmarked as being needed for the Carmichael Coal Mine. It is notable that the water licence provided by the Queensland Government to Adani for the Sutor River take authorises take only for ‘*water supply for the Carmichael Coal Mine and Rail Project*’.

The company names the China Stone Coal Project as one of the mines it could supply. The Environmental Impact Statement for the China Stone Project states that the mine will need to source a significant portion of its water supply from off-site, especially in dry years. The project proponent, Macmines Austasia, plans to secure an external supply of up to 12.5 billion litres of water per annum.³ In its recent EPBC referral for the Alpha North Project, Waratah Coal notes that it too is planning to source water “through the NGWS being developed by Adani”.⁴

³ Page 13-25, Surface Water, Section 13, Draft Environmental Impact Statement, Project China Stone

⁴ Waratah Coal (2018) Alpha North Project, Initial Advice Statement, section 3.3.7 Water Supply, page 3-30

On the basis of this information we consider that this NGWS proposal is actually part of a much larger action. In addition to the additional water take mooted in the NGWS referral for other mines, Adani has already obtained water permits for additional water take that is not mentioned in the referral. Water Permit 617345 allows the take of 250ML from the Belyando River for mine construction and Water Permit 614017 allow the take of 8050ML from Mistake Creek for mine construction⁵.

We believe that referring the NGWS without providing full details of the entire water take is contrary to the objects of the EPBC Act because it will allow the proponent to avoid a full impact assessment of the proposed action on MNES. **We request that you exercise your discretion under s 74A EPBC Act to reject the referral or request Adani to provide further information about the extent of impacts to surface water resources that are likely to result from supplying additional billions of litres of fresh water to mines in the area under s 76(2) EPBC Act.**

Threatened Species

Threatened species surveys inadequate

Threatened species surveys conducted for the project by Adani are inadequate. They appear to have conducted only 6 days of site inspections – one three day period in December 2016 and one three day period in May 2015. This is vastly inadequate both in duration and in seasonality, particularly for a project that has a 500ha disturbance and proposes over 110km of pipeline installation.

There is very little information provided as to the nature or intensity of the surveys that were conducted. However, in Attachment D of the referral Adani refer to site assessments involving apparently visual ‘*assessment of fauna habitat values*’. In other parts of the referral, Adani make some reference to surveys for the Koala, Ornamental Snake and Black Throated Finch, but it is not clear if this is simply the ‘site assessments’ referred to in Attachment D. There is no information provided on what survey techniques were used for each species and where they were applied.

In light of the information that is available, it would seem that there were no systematic surveys for flora and fauna, and it seems unlikely that there were any extensive targeted surveys for relevant species using appropriate survey techniques.

Impacts on important habitat for threatened species by Adani’s own admission

The DoEE protected matters tool identifies one Listed Threatened Ecological Community and 13 Listed Threatened Species as being MNES that are likely to occur within the impact area of the NGWS project. The Matters of NES include:

- Brigalow (*Acacia harpophylla* dominant and codominant) (Endangered);
- Red Goshawk (Vulnerable);
- Squatter Pigeon (southern) (Vulnerable);

⁵ It is unclear whether this permit has been renewed since its initial expiry in January 2018.

- Painted Honeyeater (Vulnerable);
- Squatter Pigeon (southern) (Vulnerable);
- Painted Honeyeater (Vulnerable);
- Star Finch (eastern), Star Finch (southern) (Endangered);
- Southern Black-throated Finch (Endangered);
- Australian Painted Snipe (Endangered);
- Masked Owl (northern) (Vulnerable);
- Northern Quoll (Endangered);
- Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) (Vulnerable);
- Waxy Cabbage Palm (Vulnerable);
- Yakka Skink (Vulnerable);
- Ornamental Snake (Vulnerable);
- Curlew Sandpiper (Critically Endangered).

The weaknesses of the surveys described above are particularly inadequate in light of Adani's own analysis that there is important or critical habitat present for at least 3 species – Ornamental Snake, Black-throated Finch and Koala.

Adani admit that there is 137.43 hectares of habitat suitable for the Ornamental Snake within the footprint of the project, including important habitat for the species, and that the habitat '*is almost certain to be used for foraging and breeding given the species occurs there*'. However, despite that evidence which clearly triggers the requirements for significant impact contained in the relevant Significant Impact Guidelines, they claim that there will not be a significant impact.

Similarly, Adani themselves acknowledge that there is important habitat for the Black-throated Finch and the Koala within the project footprint, but again claim that there will not be a significant impact. We contend that the conclusions reached by Adani for these two species is also inconsistent with Significant Impact Guidelines.

In relation to the Black Throated Finch, we note that Stage B of the pipeline crosses potential Black-Throated Finch Habitat in a number of locations before heading north at Mistake Creek.⁶ Construction of the pipeline will require clearing of a corridor prior to construction. The proposed route of the NGWS may require clearing of Black Throated Finch habitat which will have a significant impact on the species as set out in the criteria in the EPBC Significant Impact Guidelines for critically endangered and endangered species.⁷

Furthermore, despite identifying a number of additional species that have the potential to occur, including the Yakka Skink, Red Goshawk, Australian Painted Snipe and Painted Honeyeater, Adani go no further in genuinely assessing likelihood or habitat for the species. This is manifestly inadequate for a project of this size and impact.

⁶ Based on Adani's own studies see: 'Carmichael Coal Mine and Rail Project' Volume 1, Section 11 Matters of MNES, Figure 11-4 Sheets 1-2.

⁷ Department of the Environment, 'Matters of National Environmental Significance: Significant Impact Guidelines 1.1 *Environment Protection and Biodiversity Conservation Act 1999* (Cth) 9.

Far smaller, similar projects have been declared controlled actions in the past

A comparison with previous similar development proposals in Central Queensland indicates that far smaller projects have been declared as controlled actions by the Department of Environment and Energy for likely impacts on exactly the same species which are at issue with the NGWS.

The Olive Downs Project Water Pipeline (EPBC 2017/7868) is, just like the NGWS, water supply infrastructure to supply a coal mine. The Olive Downs pipeline proposal was for a 19km pipeline, 15m in width, which encompassed a total footprint of 30 hectares. This is only a quarter the length of the NGWS pipeline and half the width. Therefore, the total footprint of the NGWS project is 16 times that of the Olive Downs pipeline.

The species that were likely to be impacted by the Olive Downs pipeline included the Ornamental Snake, the Squatter Pigeon, the Koala and the Greater Glider. All four of those species are known or likely, or have the potential, to occur in the NGWS project. Like Adani, the Olive Downs proponent claimed that the project was unlikely to have a significant impact on these species and was not a controlled action.

However, the Department of Environment and Energy declared the action was a controlled action and that it required assessment and approval under the EPBC Act before it could proceed. Listed threatened species and communities were the stated controlling provision.

Therefore, it is incumbent on the Department to act consistently, and to implement the EPBC Act without fear or favour, which would require it to declare that the NGWS project is a controlled action for listed threatened species and communities, just as it did with the Olive Downs project.

Potential impacts on the Great Barrier Reef

When approving the Carmichael Coal Mine project, the Minister found that the proponent's proposed action may have indirect impacts on the Great Barrier Reef World Heritage Area via impacts through watercourses due to reduction in downstream flow.⁸ **However, the Minister did not consider the cumulative impacts of the project with the flood harvesting proposed in the NGWS project.**

The significant impact guidelines for the GBRWHA, identify changes to natural water regimes as examples of possible significant impacts arising from actions/activities likely to occur in or adjacent to the GBRWHA. It also refers to mining operations, dams and/or other infrastructure that may have downstream impacts on the GBRWHA.

The Burdekin catchment in which the Suttor River is located is an important catchment of the Great Barrier Reef. Recent research has identified that the Burdekin River is one of just four rivers that are most likely to affect water quality into the GBR⁹. Therefore, any activity, such as flood harvesting in the catchment and associated infrastructure, should be considered

⁸ Greg Hunt, 'Statement of Reasons for approval of a proposed action under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) EPBC 2010/5736 (14 October 2015) [35].

⁹ <https://www.theguardian.com/environment/2018/jun/15/great-barrier-reef-four-rivers-are-most-responsible-for-pollution>

likely to have a significant impact unless or until extensive hydrological assessment and modelling has been conducted to prove otherwise.

Environmental Record

In its EPBC referral for the NGWS, Adani claims that “*The Proponent (Adani Infrastructure Pty Ltd) has adhered to its regulatory responsibilities in association with its activities. The Proponent has not been the subject of any environmental legal proceedings that have resulted in fines or prosecution.*”¹⁰

However, in making this statement, the proponent is restricting itself to Adani Infrastructure Pty Ltd, and is ignoring the environmental record of other, closely associated Adani companies and the environmental history of the company’s directors. The company has an identical ownership structure to Adani Mining Pty Ltd, the proponent of the Carmichael mine. Both are ultimately owned by Indian listed company Adani Enterprises Limited.

Adani Infrastructure Pty Ltd has two directors Jeyakumar Janakaraj and Samir Sevanti Vora. Janakaraj is also the head of Adani in Australia and Chief Executive Officer of Adani Mining Pty Ltd. Vora is also the Chief Operating Officer of Adani Mining Pty Ltd.¹¹ Janakaraj was previously Director of Operations at Konkola Copper Mines (KCM) which is not an Adani Group entity. In 2010, while Janakaraj was Director of Operations, KCM caused extensive pollution of a river near its operations in Zambia. The company pleaded guilty to the offence and was fined.¹²

Adani Mining have previously been investigated by the federal Department of the Environment for potential false and misleading conduct in failing to declare the environmental history of Jeyakumar Janakaraj during the environmental assessment of the Carmichael Mine and Rail Project. Department records show that during this investigation, the details of which were obtained by FOI, in addition to a number of overseas offences, Adani reported 11 environmental incidences in Australia involving Adani Mining Pty Ltd including some resulting in penalty infringement notices and fines.¹³

Adani company, Abbot Point Bulk Coal Pty Ltd, have been fined for breaching their licence at the Abbot Point coal terminal by releasing coal-laden water into the ocean. Just before Cyclone Debbie in Queensland, the company was granted a special licence allowing them to pollute well above normal limits during severe weather. Yet, even with that licence, the Queensland Government found that Adani discharged wastewater that exceeded their pollution licence by 800%. Adani were fined \$12,000 for the offence¹⁴.

Adani Infrastructure Pty Ltd should be required to disclose the environmental breaches described above and any other environment incidents that have occurred across all associated entities within the Adani Group, to the Federal Government.

¹⁰ North Galilee Water Scheme (NGWS) Project, EPBC Referral document, Pdf page 48
<http://epbcnotices.environment.gov.au/entity/annotation/2633c814-db6a-e811-817f-005056ba00a7/a71d58ad-4cba-48b6-8dab-f3091fc31cd5?t=1528755820874>

¹¹ <https://www.adani.com/about-us/one-vision-one-team>

¹² [The Adani Brief - Environmental Justice Australia](#)

¹³ Department of the Environment FOI 171001 documents titled “Summary of information provided by Adani in response to a request relating to their environmental history, Annexure 5” pages 5-1 to 5-5

¹⁴ Adani are currently appealing the fine.

24th June 2018

Referrals Gateway
Environment Assessment Branch
Department of the Environment
GPO Box 787
Canberra ACT 2601
By email: epbc.referrals@environment.gov.au

Proposed Action: North Galilee Water Scheme (NGWS) Project
Reference Number: 2018/8191

Please accept this submission on behalf of s47F of "s47F to the EPBC referral for the North Galilee Water Scheme (**NGWS**) proposed by Adani Infrastructure Pty Ltd (2018/8191) (**Adani**).

I am a property owner that joins the western side of the Galilee Basin. s47F . Hancock GVK has stated in their EIS that they do not accurately know the extent of their impact on groundwater supplies but what is impacted will be destroyed fore ever. Despite the company promising to protect landowner's water supplies or make good Hancock GVK has refused to honour their commitments. This same situation is being repeated by Adani and other mining companies wanting to destroy Galilee Basin. Our property is located in the feed in to the Great Artesian Basin so when our groundwater is destroyed so will the feed into the Great Artesian Basin. Adani's mine will do the same. **Forever!**

Adani should not be permitted to extract water as it will impact on downstream users. Landowners are in drought conditions and the loss of any water will destroy their businesses. Adani has demonstrated by their actions in the Caley Valley wet lands that they will deliberately destroy pristine environments to aid their industrial agenda regardless of the toxic impact or impact on landowners.

The permanent destruction of the integrity of the Great Artesian Basin if these projects are permitted to proceed and destroy the Galilee Basin will destroy 100,000's jobs and businesses for hundreds of years. (Information taken from mining land court cases)

We recommend that you declare the NGWS as a controlled action under s 67 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) because it will have, or is likely to have an impact on matters of national environmental significance (**MNES**).

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Recommendations

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2. Require the full extent and impacts of the project on MNES to be properly assessed under the EPBC Act via a full Environmental Impact Statement.
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Water take and infrastructure does constitute a 'coal mining activity'

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reference to the water supply required to operate the mine in the original EIS for the Carmichael coal mine supports that conclusion – it is an integral part of the coal mining activity and without it, the mine cannot operate.

We note that the relevant [Significant Impact Guidelines 1.3](#) (Coal Seam Gas and Large Coal Mining Developments - impacts on water resources) are quoted by Adani as supporting their argument that water extraction and infrastructure does not constitute a coal mining activity. We note that the non-statutory guidelines do not supplant the law. Most notably, the guideline is not a relevant consideration for the Minister in deciding whether the NGWS project is a controlled action and which provisions are controlling provisions under s 75(1) EPBC Act.

The Guidelines state that extraction of CSG or coal must form part of the activity and not merely be associated with it, and specify that *“where referred along with new or modified extraction of CSG or coal, the following activities will form part of the extractive process: water supply for use in the extraction of CSG or coal.....However, these activities will not independently be CSG or coal mining development where there is no new or modified extraction of CSG or coal”*.

However, the NGWS is part of the activity of the Carmichael coal mine and the mine cannot operate without it. The need to supply the water was identified in the original coal mine proposal, and therefore it undoubtedly forms part of the activity and is not ‘merely associated with it’. This conclusion is supported by the fact that the NGWS has been formally identified as part of the Adani Combined Project by the Queensland Government.

The NGWS proposes to provide water to other mines currently under EPBC consideration

Adani notes that the NGWS could be used to supply water to other proposed coal mines in the surrounding area, but does not specify what volume of water will be supplied or how this will relate to 12.5GL they have earmarked as being needed for the Carmichael Coal Mine. It is notable that the water licence provided by the Queensland Government to Adani for the Suttor River take authorises take only for *‘water supply for the Carmichael Coal Mine and Rail Project’*.

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On the basis of this information we consider that this NGWS proposal is actually part of a much larger action. In addition to the additional water take mooted in the NGWS referral

³ Page 13-25, Surface Water, Section 13, Draft Environmental Impact Statement, Project China Stone

⁴ Waratah Coal (2018) Alpha North Project, Initial Advice Statement, section 3.3.7 Water Supply, page 3-30

for other mines, Adani has already obtained water permits for additional water take that is not mentioned in the referral. Water Permit 617345 allows the take of 250ML from the Belyando River for mine construction and Water Permit 614017 allow the take of 8050ML from Mistake Creek for mine construction⁵.

We believe that referring the NGWS without providing full details of the entire water take is contrary to the objects of the EPBC Act because it will allow the proponent to avoid a full impact assessment of the proposed action on MNES. We request that you exercise your discretion under s 74A EPBC Act to reject the referral or request Adani to provide further information about the extent of impacts to surface water resources that are likely to result from supplying additional billions of litres of fresh water to mines in the area under s 76(2) EPBC Act.

Threatened Species

Threatened species surveys inadequate

Threatened species surveys conducted for the project by Adani are inadequate. They appear to have conducted only 6 days of site inspections – one three day period in December 2016 and one three day period in May 2-15. This is vastly inadequate both in duration and in seasonality, particularly for a project that has a 500ha disturbance and proposes over 110km of pipeline installation.

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In light of the information that is available, it would seem that there were no systematic surveys for flora and fauna, and it seems unlikely that there were any extensive targeted surveys for relevant species using appropriate survey techniques.

Impacts on important habitat for threatened species by Adani's own admission

The DoEE protected matters tool identifies one Listed Threatened Ecological Community and 13 Listed Threatened Species as being MNES that are likely to occur within the impact area of the NGWSP. The Matters of NES include:

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- Brigalow (Acacia harpophylla dominant and codominant) (Endangered);
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- Curlew Sandpiper (Critically Endangered).

The weaknesses of the surveys described above are particularly inadequate in light of Adani's own analysis that there is important or critical habitat present for at least 3 species – Ornamental Snake, Black-throated Finch and Koala.

Adani admit that there is 137.43 hectares of habitat suitable for the Ornamental Snake within the footprint of the project, including important habitat for the species, and that the habitat *'is almost certain to be used for foraging and breeding given the species occurs there'*. However, despite that evidence which clearly triggers the requirements for significant impact contained in the relevant Significant Impact Guidelines, they claim that there will not be a significant impact.

Similarly, Adani themselves acknowledge that there is important habitat for the Black-throated Finch and the Koala within the project footprint, but again claim that there will not be a significant impact. We contend that the conclusions reached by Adani for these two species is also inconsistent with Significant Impact Guidelines.

In relation to the Black Throated Finch, we note that Stage B of the pipeline crosses potential Black-Throated Finch Habitat in a number of locations before heading north at Mistake Creek.⁶ Construction of the pipeline will require clearing of a corridor prior to construction. The proposed route of the NGWS may require clearing of Black Throated Finch habitat which will have a significant impact on the species as set out in the criteria in the EPBC Significant Impact Guidelines for critically endangered and endangered species.⁷

⁶ Based on Adani's own studies see: 'Carmichael Coal Mine and Rail Project' Volume 1, Section 11 Matters of MNES, Figure 11-4 Sheets 1-2.

⁷ Department of the Environment, 'Matters of National Environmental Significance: Significant Impact Guidelines 1.1 *Environment Protection and Biodiversity Conservation Act 1999* (Cth) 9.

Furthermore, despite identifying a number of additional species that have the potential to occur, including the Yakka Skink, Red Goshawk, Australian Painted Snipe and Painted Honeyeater, Adani go no further in genuinely assessing likelihood or habitat for the species. This is manifestly inadequate for a project of this size and impact.

Far smaller, similar projects have been declared controlled actions in the past

A comparison with previous similar development proposals in Central Queensland indicates that far smaller projects have been declared as controlled actions by the Department of Environment and Energy for likely impacts on exactly the same species which are at issue with the NGWS.

The Olive Downs Project Water Pipeline (EPBC 2017/7868) is, just like the NGWS, water supply infrastructure to supply a coal mine. The Olive Downs pipeline proposal was for a 19km pipeline, 15m in width, which encompassed a total footprint of 30 hectares. This is only a quarter the length of the NGWS pipeline and half the width. Therefore, the total footprint of the NGWS project is 16 times that of the Olive Downs pipeline.

The species that were likely to be impacted by the Olive Downs pipeline included the Ornamental Snake, the Squatter Pigeon, the Koala and the Greater Glider. All four of those species are known or likely, or have the potential, to occur in the NGWS project. Like Adani, the Olive Downs proponent claimed that the project was unlikely to have a significant impact on these species and was not a controlled action.

However, the Department of Environment and Energy declared the action was a controlled action and that it required assessment and approval under the EPBC Act before it could proceed. Listed threatened species and communities were the stated controlling provision.

Therefore, it is incumbent on the Department to act consistently, and to implement the EPBC Act without fear or favour, which would require it to declare that the NGWS project is a controlled action for listed threatened species and communities, just as they did with the Olive Downs project.

Potential impacts on the Great Barrier Reef

When approving the Carmichael Coal Mine project, the Minister found that the proponent's proposed action may have indirect impacts on the GBRWHA via impacts through watercourses due to reduction in downstream flow.⁸ However, the Minister did not consider the cumulative impacts of the project with the flood harvesting proposed in the NGWS project.

The significant impact guidelines for the Great Barrier Reef World Heritage Area, identify changes to natural water regimes as examples of possible significant impacts arising from actions/activities likely to occur in or adjacent to the Great Barrier Reef World Heritage. It

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also refers to mining operations, dams and/or other infrastructure that may have downstream impacts on the GBRWHA.

The Burdekin catchment in which the Suttor River is located is an important catchment of the Great Barrier Reef. Recent research has identified that the Burdekin River is one of just four rivers that are most likely to affect water quality into the GBR⁹. Therefore, any activity, such as flood harvesting in the catchment and associated infrastructure, should be considered likely to have a significant impact unless or until extensive hydrological assessment and modelling has been conducted to prove otherwise.

Environmental Record

In its EPBC referral for the NGWS, Adani claims that *“The Proponent (Adani Infrastructure Pty Ltd) has adhered to its regulatory responsibilities in association with its activities. The Proponent has not been the subject of any environmental legal proceedings that have resulted in fines or prosecution.”*¹⁰

However, in making this statement, the proponent is restricting itself to Adani Infrastructure Pty Ltd, and is ignoring the environmental record of other, closely associated Adani companies and the environmental history of the company’s directors. The company has an identical ownership structure to Adani Mining Pty Ltd, the proponent of the Carmichael mine. Both are ultimately owned by Indian listed company Adani Enterprises Limited.

Adani Infrastructure Pty Ltd has two directors Jeyakumar Janakaraj and Samir Sevanti Vora. Janakaraj is also the head of Adani in Australia and Chief Executive Officer of Adani Mining Pty Ltd. Vora is also the Chief Operating Officer of Adani Mining Pty Ltd.¹¹ Janakaraj was previously Director of Operations at Konkola Copper Mines (KCM) which is not an Adani Group entity. In 2010, while Janakaraj was Director of Operations, KCM caused extensive pollution of a river near its operations in Zambia. The company pleaded guilty to the offence and was fined.¹²

Adani Mining have previously been investigated by the federal Department of the Environment for potential false and misleading conduct in failing to declare the environmental history of Jeyakumar Janakaraj during the environmental assessment of the Carmichael Mine and Rail Project. Department records show that during this investigation, the details of which were obtained by FOI, in addition to a number of overseas offences, Adani reported 11 environmental incidences in Australia involving Adani Mining Pty Ltd including some resulting in penalty infringement notices and fines.¹³

Adani company Abbot Point Bulk Coal Pty Ltd have been fined for breaching their licence at the Abbot Point coal terminal by releasing coal-laden water into the ocean. Just before

⁹ <https://www.theguardian.com/environment/2018/jun/15/great-barrier-reef-four-rivers-are-most-responsible-for-pollution>

¹⁰ North Galilee Water Scheme (NGWS) Project, EPBC Referral document, Pdf page 48
<http://epbcnotices.environment.gov.au/entity/annotation/2633c814-db6a-e811-817f-005056ba00a7/a71d58ad-4cba-48b6-8dab-f3091fc31cd5?t=1528755820874>

¹¹ <https://www.adani.com/about-us/one-vision-one-team>

¹² [The Adani Brief - Environmental Justice Australia](#)

¹³ Department of the Environment FOI 171001 documents titled “Summary of information provided by Adani in response to a request relating to their environmental history, Annexure 5” pages 5-1 to 5-5

Cyclone Debbie in Queensland, the company was granted a special licence allowing them to pollute well above normal limits during severe weather. Yet, even with that licence, the Queensland Government found that Adani discharged wastewater that exceeded their pollution licence by 800%. Adani were fined \$12,000 for the offence¹⁴.

Adani Infrastructure Pty Ltd should be required to disclose the environmental breaches described above and any other environment incidents that have occurred across all associated entities within the Adani Group to the Federal Government.

Regards

s47F

[Redacted]

[Redacted]

An impacted landowner if companies are permitted to destroy the Galilee Basin and GREAT ARTEIAN BASIN !!

¹⁴ Adani are currently appealing the fine.



Environment Council of
Central Queensland Inc.

ABN 56 740 735 001

P.O. Box 1399 Mackay 4740

Ph. 0411 554 761

22nd June 2018

Referrals Gateway
Environment Assessment Branch
Department of the Environment
GPO Box 787
Canberra ACT 2601
By email: epbc.referrals@environment.gov.au

Proposed Action: North Galilee Water Scheme (NGWS) Project

Reference Number: 2018/8191

Please accept this submission on behalf of the Environment Council of Central Queensland ECoCeQ to the EPBC referral for the North Galilee Water Scheme (NGWS) proposed by Adani Infrastructure Pty Ltd (2018/8191) (**Adani**).

The principal purpose of the Environment Council of Central Queensland Inc. (ECoCeQ) is the conservation, protection and enhancement of the natural environment, with a particular focus on our area of operation.

We request that you declare the NGWS as a controlled action under s 67 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) because it will have or is likely to have an impact on matters of national environmental significance (**MNES**).

Adani claims in their referral documents that the NGWS project is not a controlled action, but that is not a decision for Adani to make.

It is clear that:

1. The NGWS project should be assessed under the water trigger because:
 - a. The only purpose for NGWS project is associated with extraction of coal from the Carmichael coal mine, and as such is an action that involves a “large coal mining development” as defined under s 24D of the EPBC Act; and
 - b. there is a real chance that it will significantly interrupt water resources in the Belyando Suttor sub-catchment and have an effect on environmental flows.
2. The NGWS is also likely to have a significant impact on a number of threatened species and communities, including the Black Throated Finch, Ornamental Snake and the Koala.
3. Projects affecting the same threatened species with a far smaller footprint have been declared as controlled actions in the past by the Department of Environment and Energy.

4. The potential impact of the Suttor River water take and associated infrastructure on the Great Barrier Reef World Heritage Area has not been considered by the proponent.

Recommendations

We ask that you:

1. Declare the NGWS project a controlled action with controlling provisions of:
 - Listed threatened species and communities
 - A water resource in relation to coal seam gas development and large coal mining development
 - World Heritage properties
 - Great Barrier Reef Marine Park
2. Require the full extent and impacts of the project on MNES to be properly assessed under the EPBC Act via a full Environmental Impact Statement.
3. Obtain expert advice on the water impacts of the project from the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (**IESC**).
4. Require the proponent to fully disclose the environmental compliance record of all associated companies both here and overseas in order for the public to properly understand the compliance history of the Adani group.
5. Recognise that the action is part of a larger action proposing to take far greater volumes of surface water than identified in the referral, by:
 - Exercising your discretion under s74A of the EPBC Act to reject the referral, or
 - Utilising your powers under s76 (2) of the EPBC Act to require Adani to provide further information about the full extent of impacts to surface water, including the proposal to supply other coal mines from the NGWS and other existing water permits held by Adani for construction purposes in the catchment.

Project Summary

The NGWS project is located approximately 160km north-west of Clermont in Central Queensland.

In times of flood, Adani plan to harvest water from the Suttor River downstream of its confluence with the Belyando River. The water will then be stored in a nearby upgraded dam then piped to the mine.

The project consists of:

- flood water harvesting infrastructure on the Suttor River
- a 10 GL (billion litre) dam (the upgrade of a 2GL dam is proposed)
- pumping facilities and a 4km pipe linking the harvester to the dam
- a 110km pipeline with pumping stations connecting the dam to the proposed Carmichael coal mine.

Adani provide a total disturbance footprint for the NGWS of 508.98 hectares. Adani estimate that construction of the NGWS will run from January 2019 to March 2020.

Adani holds a water licence entitling it to take 12.5 billion litres a year from the Suttor River at the location of the proposed water harvester.¹ This was obtained from the Queensland Government in March 2017 with the water being allocated from a State strategic reserve.

¹

Water Act 2000, Water Licence Reference 617268, Expiry 30/06/2077, issued to Adani Infrastructure Pty Ltd

Water Resources

Section 24D of the EPBC Act provides as follows:

“(1) A constitutional corporation, the Commonwealth or a Commonwealth agency must not take an action if:

(a) the action involves:

- (i) coal seam gas development; or*
- (ii) large coal mining development; and*

(b) the action:

- (i) has or will have a significant impact on a water resource; or*
- (ii) is likely to have a significant impact on a water resource.”*

The term “large coal mining development” is defined in section 528 as:

“any coal mining activity that has, or is likely to have, a significant impact on water resources (including any impacts of associated salt production and/or salinity):

- (a) in its own right; or*
- (b) when considered with other developments, whether past, present or reasonably foreseeable developments”.*

In their referral, Adani state that the NGWS project does not constitute large coal mining development for the purposes of the EPBC Act, and therefore that it is not a controlled action for that provision. In an attachment to the referral, Adani state that ‘*Activities relevant to the water trigger are those that form part of the process of extracting coal and not merely be associated with it*’.

However, the NGWS does constitute a coal mining activity for the purposes of the EPBC Act and as such, it should be considered a controlling provision for the action. We set out below the evidence as to why the NGWS is large coal mining development for the purposes of s 24D of the EPBC Act.

The Suttor River water take and infrastructure has not been assessed previously

In the original Environmental Impact Statement (EIS) documents for the Carmichael Coal Mine, Adani stated that the expected average water demand of the Carmichael mine would be in the order of 12 billion litres (12GL) per annum. This represents the additional water that the project would require on top of that resulting from operational activities such as pit dewatering and on-site rainwater management.

In the original EIS (2012), Adani claimed that this additional water would be sourced from on-site sources and from bores to be drilled along nearby creeks. By the time of the SEIS (late 2013), Adani had modified its plans to include a flood harvesting scheme near to the mine site on the Belyando River with a capacity equal to the mine’s total additional water needs.² It was only after the SEIS that Adani moved towards supplying the needs of the mine from flood harvesting of the Suttor River. So, neither the proposed take of water from the Suttor River, nor the associated infrastructure, was considered or assessed under the original EIS for the project.

The NGWS has been formally recognised as part of the Adani Combined Project

The NGWS has been explicitly recognised as being part of the Adani Combined Project by the Queensland Government. In October 2016, the Queensland Minister for State Development, Planning and Infrastructure declared the Adani Combined Project to be both ‘critical infrastructure’ and a ‘prescribed project’ under the *State Development and Public*

Works Organisation Act 1971 (Qld). The NGWS was listed as comprising a key component of that project.

The volume of water take is likely to constitute a significant impact

The take from the Suttor River of up to 12.5GL per year for the NGWS project is likely to constitute a significant impact on water resources because it amounts to more than 50% of the total strategic reserve for the relevant sub-catchment under the Queensland *Water Plan (Burdekin Basin) 2007*.

Water take and infrastructure does constitute a ‘coal mining activity’

The term ‘coal mining activity’ in the definition of ‘large coal mining development’ includes activities such as water extraction that form part of a large scale development for the mining of coal. The term is not restricted to ‘coal mining’ only, as appears to have been concluded by Adani.

When the ‘water trigger’ was introduced by way of the *Environmental Protection and Biodiversity Conservation Amendment Act 2013* (Cth), the then Minister for Sustainability, Environment, Water, Population and Communities in his second reading speech referred, amongst other things, to the “*irreversible depletion.....of our surface and groundwater resources*”.

The relevant *Bills Digest*, which was laid before Parliament before the Bill was enacted, considered the impacts of large scale coal mining on water resources. These included the use of water ‘for processing and dust suppression and other mining activities’ as a necessity of coal production. In considering a particular coal mine, the *Digest* describes operational water use of 21GL per year from surface and sub-surface sources as ‘an appreciable amount’ compared to a total annual extraction of around 550GL.

Therefore, it is clear that the correct statutory construction of the EPBC Act is that the extraction of water for use in dust suppression and processing does constitute a coal mining activity, especially when read in the context of the objects of the legislation. Indeed, the reference to the water supply required to operate the mine in the original EIS for the Carmichael coal mine supports that conclusion – it is an integral part of the coal mining activity and without it, the mine cannot operate.

We note that the relevant [Significant Impact Guidelines 1.3](#) (Coal Seam Gas and Large Coal Mining Developments - impacts on water resources) are quoted by Adani as supporting their argument that water extraction and infrastructure does not constitute a coal mining activity.

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Furthermore, despite identifying a number of additional species that have the potential to occur, including the Yakka Skink, Red Goshawk, Australian Painted Snipe and Painted Honeyeater, Adani go no further in genuinely assessing likelihood or habitat for the species. This is manifestly inadequate for a project of this size and impact.

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The Burdekin catchment in which the Suttor River is located is an important catchment of the Great Barrier Reef. Recent research has identified that the Burdekin River is one of just four rivers that are most likely to affect water quality into the GBR⁹. Therefore, any activity, such as flood harvesting in the catchment and associated infrastructure, should be considered likely to have a significant impact unless or until extensive hydrological assessment and modelling has been conducted to prove otherwise.

Environmental Record

In its EPBC referral for the NGWS, Adani claims that “*The Proponent (Adani Infrastructure Pty Ltd) has adhered to its regulatory responsibilities in association with its activities. The Proponent has not been the subject of any environmental legal proceedings that have resulted in fines or prosecution.*”¹⁰

However, in making this statement, the proponent is restricting itself to Adani Infrastructure Pty Ltd, and is ignoring the environmental record of other, closely associated Adani companies and the environmental history of the company’s directors. The company has an identical ownership structure to Adani Mining Pty Ltd, the proponent of the Carmichael mine. Both are ultimately owned by Indian listed company Adani Enterprises Limited.

Adani Infrastructure Pty Ltd has two directors Jeyakumar Janakaraj and Samir Sevanti Vora. Janakaraj is also the head of Adani in Australia and Chief Executive Officer of Adani Mining Pty Ltd. Vora is also the Chief Operating Officer of Adani Mining Pty Ltd.¹¹ Janakaraj was previously Director of Operations at Konkola Copper Mines (KCM) which is not an Adani Group entity. In 2010, while Janakaraj was Director of Operations, KCM caused extensive pollution of a river near its operations in Zambia. The company pleaded guilty to the offence and was fined.¹²

Adani Mining have previously been investigated by the federal Department of the Environment for potential false and misleading conduct in failing to declare the environmental history of Jeyakumar Janakaraj during the environmental assessment of the Carmichael Mine and Rail Project. Department records show that during this investigation, the details of which were obtained by FOI, in addition to a number of overseas offences, Adani reported 11 environmental incidences in Australia involving Adani Mining Pty Ltd including some resulting in penalty infringement notices and fines.¹³

Adani company Abbot Point Bulk Coal Pty Ltd have been fined for breaching their licence at the Abbot Point coal terminal by releasing coal-laden water into the ocean. Just before Cyclone Debbie in Queensland, the company was granted a special licence allowing them to pollute well above normal limits during severe weather. Yet, even with that licence, the Queensland Government found that Adani discharged wastewater that exceeded their pollution licence by 800%. Adani were fined \$12,000 for the offence¹⁴. Adani Infrastructure Pty Ltd should be required to disclose the environmental breaches described above and any other environment incidents that have occurred across all associated entities within the Adani Group to the Federal Government.

⁹ <https://www.theguardian.com/environment/2018/jun/15/great-barrier-reef-four-rivers-are-most-responsible-for-pollution>

¹⁰ North Galilee Water Scheme (NGWS) Project, EPBC Referral document, Pdf page 48
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¹² [The Adani Brief - Environmental Justice Australia](#)

¹³ Department of the Environment FOI 171001 documents titled “Summary of information provided by Adani in response to a request relating to their environmental history, Annexure 5” pages 5-1 to 5-5

¹⁴ Adani are currently appealing the fine.

Conclusion

The NGWS should be rejected under the EPBC Act s 74 A because of the impact it will have on MNES, and in consideration of the cumulative impact on these matters of all the proposed developments in the Galilee Basin. In a changing climate, scarce water resources must be protected for food, and for the future.

At the very least, on the evidence presented, the NGWS should be declared a controlled action under s 67 (2) of the EPBC Act 1999, and undergo a full and proper Environmental Impact Assessment.

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FOI 180914
Document 20

22th June 2018

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Proposed Action: North Galilee Water Scheme (NGWS) Project

Reference Number: 2018/8191

Please accept this submission on behalf of Front Line Action on Coal Inc. (FLAC) to the EPBC referral for the North Galilee Water Scheme (**NGWS**) proposed by Adani Infrastructure Pty Ltd (2018/8191) (**Adani**).

FLAC is a grassroots environmental collective formed in 2012 to campaign against the Maules Creek Coal Mine in northern NSW. FLAC now has an Australia wide focus whose objective is “To take a firm stand to protect farms, forests, community, culture and climate against the corrupt and destructive forces of coal mining. We strongly oppose the construction of any new coal mine or expansion of any existing coal mine.” Our members are a diverse cross-section of the community in age and occupations.

Our interest in this issue is that it is exactly the type of action that is within our objective, and FLAC has been campaigning against this project for the past year. In the past FLAC has produced many submissions in relation to the Maules Creek Coal Mine and other projects and this is a continuation of that work.

We recommend that you declare the NGWS as a controlled action under s 67 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) because it will have, or is likely to have an impact on matters of national environmental significance (**MNES**).

Adani claims in their referral documents that the NGWS project is not a controlled action. Contrary to that conclusion, it is clear that:

1. The NGWS project must be assessed under the water trigger because:
 - a. the NGWS project is designed solely to facilitate extraction of coal from the Carmichael coal mine, therefore it is an action that involves “large coal mining development” as defined under s 24D of the EPBC Act; and

- b. there is a real chance or possibility that it will have a significant impact on water resources in the Belyando Suttor sub-catchment.
- 2. The NGWS is also likely to have a significant impact on a number of threatened species and communities, including the Black Throated Finch, Ornamental Snake and the Koala.
- 3. Projects affecting the same threatened species with a far smaller footprint have been declared as controlled actions in the past by the Department of Environment and Energy.
- 4. The potential impact of the Suttor River water take and the associated infrastructure on the Great Barrier Reef World Heritage Area has not been considered by the proponent.

Recommendations

We recommend that you:

1. Declare the NGWS project a controlled action with controlling provisions of:
 - Listed threatened species and communities
 - A water resource in relation to coal seam gas development and large coal mining development
 - World Heritage properties
 - Great Barrier Reef Marine Park
2. Require the full extent and impacts of the project on MNES to be properly assessed under the EPBC Act via a full Environmental Impact Statement.
3. Obtain expert advice on the water impacts of the project from the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (**IESC**).
4. Require the proponent to fully disclose the environmental compliance record of all associated companies both here and overseas in order for the public to properly understand the compliance history of the Adani group.
5. Recognise that the action is part of a larger action proposing to take far greater volumes of surface water than identified in the referral, by:
 - Exercising your discretion under s74A of the EPBC Act to reject the referral, or
 - Utilising your powers under s76 (2) of the EPBC Act to require Adani to provide further information about the full extent of impacts to surface water, including the proposal to supply other coal mines from the NGWS and other existing water permits held by Adani for construction purposes in the catchment.

Project Summary

The NGWS project is located approximately 160km north-west of Clermont in Central Queensland.

In times of flood, Adani plan to harvest water from the Suttor River downstream of its confluence with the Belyando River. The water will then be stored in a nearby upgraded dam then piped to the mine.

The project consists of:

- flood water harvesting infrastructure on the Suttor River
- a 10 GL (billion litre) dam (the upgrade of a 2GL dam is proposed)
- pumping facilities and a 4km pipe linking the harvester to the dam
- a 110km pipeline with pumping stations connecting the dam to the proposed Carmichael coal mine.

Adani provide a total disturbance footprint for the NGWS of 508.98 hectares. Adani estimate that construction of the NGWS will run from January 2019 to March 2020.

Adani holds a water licence entitling it to take 12.5 billion litres a year from the Suttor River at the location of the proposed water harvester.¹ This was obtained from the Queensland Government in March 2017 with the water being allocated from a State strategic reserve.

Water Resources

Section 24D of the EPBC Act provides as follows:

“(1) A constitutional corporation, the Commonwealth or a Commonwealth agency must not take an action if:

(a) the action involves:

- (i) coal seam gas development; or*
- (ii) large coal mining development; and*

(b) the action:

- (i) has or will have a significant impact on a water resource; or*
- (ii) is likely to have a significant impact on a water resource.”*

The term “large coal mining development” is defined in section 528 as:

“any coal mining activity that has, or is likely to have, a significant impact on water resources (including any impacts of associated salt production and/or salinity):

- (a) in its own right; or*
- (b) when considered with other developments, whether past, present or reasonably foreseeable developments”.*

In their referral, Adani state that the NGWS project does not constitute large coal mining development for the purposes of the EPBCA, and therefore that it is not a controlled action for that provision. In an attachment to the referral, Adani state that ‘*Activities relevant to the water trigger are those that form part of the process of extracting coal and not merely be associated with it*’.

However, the NGWS most certainly does constitute coal mining activity for the purposes of the EPBC Act and as such, it should be considered a controlling provision for the action. We set out below the evidence as to why the NGWS is large coal mining development for the purposes of s 24D of the EPBC Act.

The Suttor River water take and infrastructure has not been assessed previously

In the original Environmental Impact Statement (EIS) documents for the Carmichael Coal Mine, Adani stated that the expected average water demand of the Carmichael mine would be in the order of 12 billion litres (12GL) per annum. This represents the additional water that the project would require on top of that resulting from operational activities such as pit dewatering and on-site rainwater management.

In the original EIS (2012), Adani claimed that this additional water would be sourced from on-site sources and from bores to be drilled along nearby creeks. By the time of the SEIS (late 2013), Adani had modified its plans to include a flood harvesting scheme near to the

¹

Water Act 2000, Water Licence Reference 617268, Expiry 30/06/2077, issued to Adani Infrastructure Pty Ltd

mine site on the Belyando River with a capacity equal to the mine's total additional water needs.²

It was only after the SEIS that Adani moved towards supplying the needs of the mine from flood harvesting of the Suttor River. So, neither the proposed take of water from the Suttor River, nor the associated infrastructure, was considered or assessed under the original EIS for the project.

The NGWS has been formally recognised as part of the Adani Combined Project

The NGWS has been explicitly recognised as being part of the Adani Combined Project by the Queensland Government. In October 2016, the Queensland Minister for State Development, Planning and Infrastructure declared the Adani Combined Project to be both 'critical infrastructure' and a 'prescribed project' under the *State Development and Public Works Organisation Act 1971* (Qld). The NGWS was listed as comprising a key component of that project.

The volume of water take is likely to constitute a significant impact

The take from the Suttor River of up to 12.5GL per year for the NGWS project is likely to constitute a significant impact on water resources because it amounts to more than 50% of the total strategic reserve for the relevant sub-catchment under the *Queensland Water Plan (Burdekin Basin) 2007*.

Water take and infrastructure does constitute a 'coal mining activity'

The term 'coal mining activity' in the definition of 'large coal mining development' includes activities such as water extraction that form part of a large scale development for the mining of coal. The term is not restricted to 'coal mining' only, as appears to have been concluded by Adani.

When the 'water trigger' was introduced by way of the *Environmental Protection and Biodiversity Conservation Amendment Act 2013* (Cth), the then Minister for Sustainability, Environment, Water, Population and Communities in his second reading speech referred, amongst other things, to the "*irreversible depletion.....of our surface and groundwater resources*".

The relevant *Bills Digest*, which was laid before Parliament before the Bill was enacted, considered the impacts of large scale coal mining on water resources. These included the use of water 'for processing and dust suppression and other mining activities' as a necessity of coal production. In considering a particular coal mine, the *Digest* describes operational water use of 21GL per year from surface and sub-surface sources as 'an appreciable amount' compared to a total annual extraction of around 550GL.

Therefore, it is clear that the correct statutory construction of the EPBC Act is that the extraction of water for use in dust suppression and processing does constitute a coal mining activity, especially when read in the context of the objects of the legislation. Indeed, the

reference to the water supply required to operate the mine in the original EIS for the Carmichael coal mine supports that conclusion – it is an integral part of the coal mining activity and without it, the mine cannot operate.

We note that the relevant [Significant Impact Guidelines 1.3](#) (Coal Seam Gas and Large Coal Mining Developments - impacts on water resources) are quoted by Adani as supporting their argument that water extraction and infrastructure does not constitute a coal mining activity. We note that the non-statutory guidelines do not supplant the law. Most notably, the guideline is not a relevant consideration for the Minister in deciding whether the NGWS project is a controlled action and which provisions are controlling provisions under s 75(1) EPBC Act.

The Guidelines state that extraction of CSG or coal must form part of the activity and not merely be associated with it, and specify that *“where referred along with new or modified extraction of CSG or coal, the following activities will form part of the extractive process: water supply for use in the extraction of CSG or coal.....However, these activities will not independently be CSG or coal mining development where there is no new or modified extraction of CSG or coal”*.

However, the NGWS is part of the activity of the Carmichael coal mine and the mine cannot operate without it. The need to supply the water was identified in the original coal mine proposal, and therefore it undoubtedly forms part of the activity and is not ‘merely associated with it’. This conclusion is supported by the fact that the NGWS has been formally identified as part of the Adani Combined Project by the Queensland Government.

The NGWS proposes to provide water to other mines currently under EPBC consideration

Adani notes that the NGWS could be used to supply water to other proposed coal mines in the surrounding area, but does not specify what volume of water will be supplied or how this will relate to 12.5GL they have earmarked as being needed for the Carmichael Coal Mine. It is notable that the water licence provided by the Queensland Government to Adani for the Suttor River take authorises take only for *‘water supply for the Carmichael Coal Mine and Rail Project’*.

The company names the China Stone Coal Project as one of the mines it could supply. The Environmental Impact Statement for the China Stone Project states that the mine will need to source a significant portion of its water supply from off-site, especially in dry years. The project proponent, Macmines Austasia, plans to secure an external supply of up to 12.5 billion litres of water per annum.³ In its recent EPBC referral for the Alpha North Project, Waratah Coal notes that it too is planning to source water “through the NGWS being developed by Adani”.⁴

On the basis of this information we consider that this NGWS proposal is actually part of a much larger action. In addition to the additional water take mooted in the NGWS referral

³ Page 13-25, Surface Water, Section 13, Draft Environmental Impact Statement, Project China Stone

⁴ Waratah Coal (2018) Alpha North Project, Initial Advice Statement, section 3.3.7 Water Supply, page 3-30

for other mines, Adani has already obtained water permits for additional water take that is not mentioned in the referral. Water Permit 617345 allows the take of 250ML from the Belyando River for mine construction and Water Permit 614017 allow the take of 8050ML from Mistake Creek for mine construction⁵.

We believe that referring the NGWS without providing full details of the entire water take is contrary to the objects of the EPBC Act because it will allow the proponent to avoid a full impact assessment of the proposed action on MNES. We request that you exercise your discretion under s 74A EPBC Act to reject the referral or request Adani to provide further information about the extent of impacts to surface water resources that are likely to result from supplying additional billions of litres of fresh water to mines in the area under s 76(2) EPBC Act.

Threatened Species

Threatened species surveys inadequate

Threatened species surveys conducted for the project by Adani are inadequate. They appear to have conducted only 6 days of site inspections – one three day period in December 2016 and one three day period in May 2-15. This is vastly inadequate both in duration and in seasonality, particularly for a project that has a 500ha disturbance and proposes over 110km of pipeline installation.

There is very little information provided as to the nature or intensity of the surveys that were conducted. However, in Attachment D of the referral Adani refer to site assessments involving apparently visual '*assessment of fauna habitat values*'. In other parts of the referral, Adani make some reference to surveys for the Koala, Ornamental Snake and Black Throated Finch, but it is not clear if this is simply the 'site assessments' referred to in Attachment D. There is no information provided on what survey techniques were used for each species and where they were applied.

In light of the information that is available, it would seem that there were no systematic surveys for flora and fauna, and it seems unlikely that there were any extensive targeted surveys for relevant species using appropriate survey techniques.

Impacts on important habitat for threatened species by Adani's own admission

The DoEE protected matters tool identifies one Listed Threatened Ecological Community and 13 Listed Threatened Species as being MNES that are likely to occur within the impact area of the NGWSP. The Matters of NES include

⁵ It is unclear whether this permit has been renewed since its initial expiry in January 2018.

- Brigalow (Acacia harpophylla dominant and codominant) (Endangered);
- Red Goshawk (Vulnerable);
- Squatter Pigeon (southern) (Vulnerable);
- Painted Honeyeater (Vulnerable);
- Star Finch (eastern), Star Finch (southern) (Endangered);
- Southern Black-throated Finch (Endangered);
- Australian Painted Snipe (Endangered);
- Masked Owl (northern) (Vulnerable);
- Northern Quoll (Endangered);
- Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) (Vulnerable);
- Waxy Cabbage Palm (Vulnerable);
- Yakka Skink (Vulnerable);
- Ornamental Snake (Vulnerable);
- Curlew Sandpiper (Critically Endangered).

The weaknesses of the surveys described above are particularly inadequate in light of Adani's own analysis that there is important or critical habitat present for at least 3 species – Ornamental Snake, Black-throated Finch and Koala.

Adani admit that there is 137.43 hectares of habitat suitable for the Ornamental Snake within the footprint of the project, including important habitat for the species, and that the habitat '*is almost certain to be used for foraging and breeding given the species occurs there*'. However, despite that evidence which clearly triggers the requirements for significant impact contained in the relevant Significant Impact Guidelines, they claim that there will not be a significant impact.

Similarly, Adani themselves acknowledge that there is important habitat for the Black-throated Finch and the Koala within the project footprint, but again claim that there will not be a significant impact. We contend that the conclusions reached by Adani for these two species is also inconsistent with Significant Impact Guidelines.

In relation to the Black Throated Finch, we note that Stage B of the pipeline crosses potential Black-Throated Finch Habitat in a number of locations before heading north at Mistake Creek.⁶ Construction of the pipeline will require clearing of a corridor prior to construction. The proposed route of the NGWS may require clearing of Black Throated Finch habitat which will have a significant impact on the species as set out in the criteria in the EPBC Significant Impact Guidelines for critically endangered and endangered species.⁷

Furthermore, despite identifying a number of additional species that have the potential to occur, including the Yakka Skink, Red Goshawk, Australian Painted Snipe and Painted

⁶ Based on Adani's own studies see: 'Carmichael Coal Mine and Rail Project' Volume 1, Section 11 Matters of MNES, Figure 11-4 Sheets 1-2.

⁷ Department of the Environment, 'Matters of National Environmental Significance: Significant Impact Guidelines 1.1 *Environment Protection and Biodiversity Conservation Act 1999* (Cth) 9.

Honeyeater, Adani go no further in genuinely assessing likelihood or habitat for the species. This is manifestly inadequate for a project of this size and impact.

Far smaller, similar projects have been declared controlled actions in the past

A comparison with previous similar development proposals in Central Queensland indicates that far smaller projects have been declared as controlled actions by the Department of Environment and Energy for likely impacts on exactly the same species which are at issue with the NGWS.

The Olive Downs Project Water Pipeline (EPBC 2017/7868) is, just like the NGWS, water supply infrastructure to supply a coal mine. The Olive Downs pipeline proposal was for a 19km pipeline, 15m in width, which encompassed a total footprint of 30 hectares. This is only a quarter the length of the NGWS pipeline and half the width. Therefore, the total footprint of the NGWS project is 16 times that of the Olive Downs pipeline.

The species that were likely to be impacted by the Olive Downs pipeline included the Ornamental Snake, the Squatter Pigeon, the Koala and the Greater Glider. All four of those species are known or likely, or have the potential, to occur in the NGWS project. Like Adani, the Olive Downs proponent claimed that the project was unlikely to have a significant impact on these species and was not a controlled action.

However, the Department of Environment and Energy declared the action was a controlled action and that it required assessment and approval under the EPBC Act before it could proceed. Listed threatened species and communities were the stated controlling provision.

Therefore, it is incumbent on the Department to act consistently, and to implement the EPBC Act without fear or favour, which would require it to declare that the NGWS project is a controlled action for listed threatened species and communities, just as they did with the Olive Downs project.

Potential impacts on the Great Barrier Reef

When approving the Carmichael Coal Mine project, the Minister found that the proponent's proposed action may have indirect impacts on the GBRWHA via impacts through watercourses due to reduction in downstream flow.⁸ However, the Minister did not consider the cumulative impacts of the project with the flood harvesting proposed in the NGWS project.

The significant impact guidelines for the Great Barrier Reef World Heritage Area, identify changes to natural water regimes as examples of possible significant impacts arising from actions/activities likely to occur in or adjacent to the Great Barrier Reef World Heritage. It also refers to mining operations, dams and/or other infrastructure that may have downstream impacts on the GBRWHA.

⁸ Greg Hunt, 'Statement of Reasons for approval of a proposed action under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) EPBC 2010/5736 (14 October 2015) [35].

The Burdekin catchment in which the Suttor River is located is an important catchment of the Great Barrier Reef. Recent research has identified that the Burdekin River is one of just four rivers that are most likely to affect water quality into the GBR⁹. Therefore, any activity, such as flood harvesting in the catchment and associated infrastructure, should be considered likely to have a significant impact unless or until extensive hydrological assessment and modelling has been conducted to prove otherwise.

Environmental Record

In its EPBC referral for the NGWS, Adani claims that *“The Proponent (Adani Infrastructure Pty Ltd) has adhered to its regulatory responsibilities in association with its activities. The Proponent has not been the subject of any environmental legal proceedings that have resulted in fines or prosecution.”*¹⁰

However, in making this statement, the proponent is restricting itself to Adani Infrastructure Pty Ltd, and is ignoring the environmental record of other, closely associated Adani companies and the environmental history of the company’s directors. The company has an identical ownership structure to Adani Mining Pty Ltd, the proponent of the Carmichael mine. Both are ultimately owned by Indian listed company Adani Enterprises Limited.

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Queensland Government found that Adani discharged wastewater that exceeded their pollution licence by 800%. Adani were fined \$12,000 for the offence¹⁴.

Adani Infrastructure Pty Ltd should be required to disclose the environmental breaches described above and any other environment incidents that have occurred across all associated entities within the Adani Group to the Federal Government.

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21st June 2018

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Proposed Action: North Galilee Water Scheme (NGWS) Project
Reference Number: 2018/8191

Dear Sir / Madam

Please accept this submission on behalf of Farmers for Climate Action to the EPBC referral for the North Galilee Water Scheme (**NGWS**) proposed by Adani Infrastructure Pty Ltd (2018/8191) (**Adani**).

Farmers for Climate Action is an inclusive movement of thousands of Australian farmers, agricultural industry leaders and interested community members committed to putting those on the frontline of climate change front and centre in creating climate solutions. Farmers for Climate Action believe in preserving the viability of Australian agriculture for future generations of Australian farmers, recognising that Australia's future lies with clean energy, clean water and food security.

Agriculture is Australia's most exposed industry to climate change and Australian farmers are on the front line of extreme weather events. Right across our country, farmers are already witnessing the impacts of climate change; from increased severity of tropical cyclones in the north, changing rainfall and weather patterns and the increased likelihood of drought and heatwave conditions through vast areas of our country.

In response to the impacts of climate change being felt on Australian farms, Farmers for Climate Action is committed to supporting a rapid transition away from fossil fuels and towards a renewable energy future.

Our Work in the Galilee

Farmers for Climate Action has played a lead role in supporting graziers in the Galilee Basin and surrounding regions to be fully informed about the risks posed to groundwater by the proposed Adani Carmichael mine, and subsequent mega mines in the Galilee.

Agriculture in the region is dependent on groundwater, particularly during times of extended drought. Any potential compromise to the integrity of groundwater supplies is of great concern to local graziers, and we strongly urge the Department to employ the precautionary principle in consideration of these matters, and in light of the potentially irreversible nature of potential damage.

We subsequently recommend that you declare the NGWS as a controlled action under s 67 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) because it will have, or is likely to have an impact on matters of national environmental significance (**MNES**).

Adani claims in their referral documents that the NGWS project is not a controlled action. Contrary to that conclusion, it is clear that:

1. The NGWS project must be assessed under the water trigger because:
 - a. the NGWS project is designed solely to facilitate extraction of coal from the Carmichael coal mine, therefore it is an action that involves “large coal mining development” as defined under s 24D of the EPBC Act; and
 - b. there is a real chance or possibility that it will have a significant impact on water resources in the Belyando Suttor sub-catchment.
2. The NGWS is also likely to have a significant impact on a number of threatened species and communities, including the Black Throated Finch, Ornamental Snake and the Koala.
3. Projects affecting the same threatened species with a far smaller footprint have been declared as controlled actions in the past by the Department of Environment and Energy.
4. The potential impact of the Suttor River water take and the associated infrastructure on the Great Barrier Reef World Heritage Area has not been considered by the proponent.

Recommendations

We recommend that you:

1. Declare the NGWS project a controlled action with controlling provisions of:
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 - A water resource in relation to coal seam gas development and large coal mining development
 - World Heritage properties
 - Great Barrier Reef Marine Park
2. Require the full extent and impacts of the project on MNES to be properly assessed under the EPBC Act via a full Environmental Impact Statement.
3. Obtain expert advice on the water impacts of the project from the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (**IESC**).
4. Require the proponent to fully disclose the environmental compliance record of all associated companies both here and overseas in order for the public to properly understand the compliance history of the Adani group.
5. Recognise that the action is part of a larger action proposing to take far greater volumes of surface water than identified in the referral, by:
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Adani provide a total disturbance footprint for the NGWS of 508.98 hectares. Adani estimate that construction of the NGWS will run from January 2019 to March 2020.

Adani holds a water licence entitling it to take 12.5 billion litres a year from the Suttor River at the location of the proposed water harvester.¹ This was obtained from the Queensland Government in March 2017 with the water being allocated from a State strategic reserve.

Water Resources

Section 24D of the EPBC Act provides as follows:

“(1) A constitutional corporation, the Commonwealth or a Commonwealth agency must not take an action if:

(a) the action involves:

- (i) coal seam gas development; or*
- (ii) large coal mining development; and*

(b) the action:

- (i) has or will have a significant impact on a water resource; or*
- (ii) is likely to have a significant impact on a water resource.”*

The term “large coal mining development” is defined in section 528 as:

“any coal mining activity that has, or is likely to have, a significant impact on water resources (including any impacts of associated salt production and/or salinity):

- (a) in its own right; or*
- (b) when considered with other developments, whether past, present or reasonably foreseeable developments”.*

In their referral, Adani state that the NGWS project does not constitute large coal mining development for the purposes of the EPBCA, and therefore that it is not a controlled action for that provision. In an attachment to the referral, Adani state that ‘*Activities relevant to the water trigger are those that form part of the process of extracting coal and not merely be associated with it*’.

However, the NGWS most certainly does constitute coal mining activity for the purposes of the EPBC Act and as such, it should be considered a controlling provision for the action. We set out below the evidence as to why the NGWS is large coal mining development for the purposes of s 24D of the EPBC Act.

The Suttor River water take and infrastructure has not been assessed previously

In the original Environmental Impact Statement (EIS) documents for the Carmichael Coal Mine, Adani stated that the expected average water demand of the Carmichael mine would be in the order of 12 billion litres (12GL) per annum. This represents the additional water that the project would require on top of that resulting from operational activities such as pit dewatering and on-site rainwater management.

In the original EIS (2012), Adani claimed that this additional water would be sourced from on-site sources and from bores to be drilled along nearby creeks. By the time of the SEIS (late 2013), Adani had modified its plans to include a flood harvesting scheme near to the

¹ Water Act 2000, Water Licence Reference 617268, Expiry 30/06/2077, issued to Adani Infrastructure Pty Ltd

mine site on the Belyando River with a capacity equal to the mine's total additional water needs.²

It was only after the SEIS that Adani moved towards supplying the needs of the mine from flood harvesting of the Suttor River. So, neither the proposed take of water from the Suttor River, nor the associated infrastructure, was considered or assessed under the original EIS for the project.

The NGWS has been formally recognised as part of the Adani Combined Project

The NGWS has been explicitly recognised as being part of the Adani Combined Project by the Queensland Government. In October 2016, the Queensland Minister for State Development, Planning and Infrastructure declared the Adani Combined Project to be both 'critical infrastructure' and a 'prescribed project' under the *State Development and Public Works Organisation Act 1971* (Qld). The NGWS was listed as comprising a key component of that project.

The volume of water take is likely to constitute a significant impact

The take from the Suttor River of up to 12.5GL per year for the NGWS project is likely to constitute a significant impact on water resources because it amounts to more than 50% of the total strategic reserve for the relevant sub-catchment under the *Queensland Water Plan (Burdekin Basin) 2007*.

Water take and infrastructure does constitute a 'coal mining activity'

The term 'coal mining activity' in the definition of 'large coal mining development' includes activities such as water extraction that form part of a large scale development for the mining of coal. The term is not restricted to 'coal mining' only, as appears to have been concluded by Adani.

When the 'water trigger' was introduced by way of the *Environmental Protection and Biodiversity Conservation Amendment Act 2013* (Cth), the then Minister for Sustainability, Environment, Water, Population and Communities in his second reading speech referred, amongst other things, to the "irreversible depletion ..of our surface and groundwater resources".

The relevant *Bills Digest*, which was laid before Parliament before the Bill was enacted, considered the impacts of large scale coal mining on water resources. These included the use of water 'for processing and dust suppression and other mining activities' as a necessity of coal production. In considering a particular coal mine, the *Digest* describes operational water use of 21GL per year from surface and sub-surface sources as 'an appreciable amount' compared to a total annual extraction of around 550GL.

Therefore, it is clear that the correct statutory construction of the EPBC Act is that the extraction of water for use in dust suppression and processing does constitute a coal mining activity, especially when read in the context of the objects of the legislation. Indeed, the

² Carmichael Coal Mine and Rail Project SEIS (Nov 2013), Updated Mine Project Description, Appendix B, P. 96-97

reference to the water supply required to operate the mine in the original EIS for the Carmichael coal mine supports that conclusion – it is an integral part of the coal mining activity and without it, the mine cannot operate.

We note that the relevant Significant Impact Guidelines 1.3 (Coal Seam Gas and Large Coal Mining Developments - impacts on water resources) are quoted by Adani as supporting their argument that water extraction and infrastructure does not constitute a coal mining activity. We note that the non-statutory guidelines do not supplant the law. Most notably, the guideline is not a relevant consideration for the Minister in deciding whether the NGWS project is a controlled action and which provisions are controlling provisions under s 75(1) EPBC Act.

The Guidelines state that extraction of CSG or coal must form part of the activity and not merely be associated with it, and specify that *“where referred along with new or modified extraction of CSG or coal, the following activities will form part of the extractive process: water supply for use in the extraction of CSG or coal ...However, these activities will not independently be CSG or coal mining development where there is no new or modified extraction of CSG or coal”*.

However, the NGWS is part of the activity of the Carmichael coal mine and the mine cannot operate without it. The need to supply the water was identified in the original coal mine proposal, and therefore it undoubtedly forms part of the activity and is not ‘merely associated with it’. This conclusion is supported by the fact that the NGWS has been formally identified as part of the Adani Combined Project by the Queensland Government.

The NGWS proposes to provide water to other mines currently under EPBC consideration

Adani notes that the NGWS could be used to supply water to other proposed coal mines in the surrounding area, but does not specify what volume of water will be supplied or how this will relate to 12.5GL they have earmarked as being needed for the Carmichael Coal Mine. It is notable that the water licence provided by the Queensland Government to Adani for the Suttor River take authorises take only for ‘*water supply for the Carmichael Coal Mine and Rail Project*’.

The company names the China Stone Coal Project as one of the mines it could supply. The Environmental Impact Statement for the China Stone Project states that the mine will need to source a significant portion of its water supply from off-site, especially in dry years. The project proponent, Macmines Austasia, plans to secure an external supply of up to 12.5 billion litres of water per annum.³ In its recent EPBC referral for the Alpha North Project, Waratah Coal notes that it too is planning to source water “through the NGWS being developed by Adani”.⁴

On the basis of this information we consider that this NGWS proposal is actually part of a much larger action. In addition to the additional water take mooted in the NGWS referral for other mines, Adani has already obtained water permits for additional water take that is

³ Page 13-25, Surface Water, Section 13, Draft Environmental Impact Statement, Project China Stone

⁴ Waratah Coal (2018) Alpha North Project, Initial Advice Statement, section 3.3.7 Water Supply, page 3-30

not mentioned in the referral. Water Permit 617345 allows the take of 250ML from the Belyando River for mine construction and Water Permit 614017 allow the take of 8050ML from Mistake Creek for mine construction⁵.

We believe that referring the NGWS without providing full details of the entire water take is contrary to the objects of the EPBC Act because it will allow the proponent to avoid a full impact assessment of the proposed action on MNES. We request that you exercise your discretion under s 74A EPBC Act to reject the referral or request Adani to provide further information about the extent of impacts to surface water resources that are likely to result from supplying additional billions of litres of fresh water to mines in the area under s 76(2) EPBC Act.

Impacts on Agriculture

The likely impacts of the proposed groundwater take on the surrounding agricultural regions, and associated industries within the catchment has been the subject of inadequate scrutiny at this time. With climate change likely to exacerbate periods of extended drought throughout the region, it is vital that water supplies be protected for use in sustainable industries, and a 'whole of catchment' approach applied to the management of both ground and surface water.

Threatened Species

Threatened species surveys inadequate

Threatened species surveys conducted for the project by Adani are inadequate. They appear to have conducted only 6 days of site inspections – one three day period in December 2016 and one three day period in May 2-15. This is vastly inadequate both in duration and in seasonality, particularly for a project that has a 500ha disturbance and proposes over 110km of pipeline installation.

There is very little information provided as to the nature or intensity of the surveys that were conducted. However, in Attachment D of the referral Adani refer to site assessments involving apparently visual '*assessment of fauna habitat values*'. In other parts of the referral, Adani make some reference to surveys for the Koala, Ornamental Snake and Black Throated Finch, but it is not clear if this is simply the 'site assessments' referred to in Attachment D. There is no information provided on what survey techniques were used for each species and where they were applied.

In light of the information that is available, it would seem that there were no systematic surveys for flora and fauna, and it seems unlikely that there were any extensive targeted surveys for relevant species using appropriate survey techniques.

Impacts on important habitat for threatened species by Adani's own admission

⁵ It is unclear whether this permit has been renewed since its initial expiry in January 2018.

The DoEE protected matters tool identifies one Listed Threatened Ecological Community and 13 Listed Threatened Species as being MNES that are likely to occur within the impact area of the NGWSP. The Matters of NES include:

- Brigalow (Acacia harpophylla dominant and codominant) (Endangered);
- Red Goshawk (Vulnerable);
- Squatter Pigeon (southern) (Vulnerable);
- Painted Honeyeater (Vulnerable);
- Star Finch (eastern), Star Finch (southern) (Endangered);
- Southern Black-throated Finch (Endangered);
- Australian Painted Snipe (Endangered);
- Masked Owl (northern) (Vulnerable);
- Northern Quoll (Endangered);
- Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) (Vulnerable);
- Waxy Cabbage Palm (Vulnerable);
- Yakka Skink (Vulnerable);
- Ornamental Snake (Vulnerable);
- Curlew Sandpiper (Critically Endangered).

The weaknesses of the surveys described above are particularly inadequate in light of Adani's own analysis that there is important or critical habitat present for at least 3 species – Ornamental Snake, Black-throated Finch and Koala.

Adani admit that there is 137.43 hectares of habitat suitable for the Ornamental Snake within the footprint of the project, including important habitat for the species, and that the habitat *'is almost certain to be used for foraging and breeding given the species occurs there'*. However, despite that evidence which clearly triggers the requirements for significant impact contained in the relevant Significant Impact Guidelines, they claim that there will not be a significant impact.

Similarly, Adani themselves acknowledge that there is important habitat for the Black-throated Finch and the Koala within the project footprint, but again claim that there will not be a significant impact. We contend that the conclusions reached by Adani for these two species is also inconsistent with Significant Impact Guidelines.

In relation to the Black Throated Finch, we note that Stage B of the pipeline crosses potential Black-Throated Finch Habitat in a number of locations before heading north at Mistake Creek.⁶ Construction of the pipeline will require clearing of a corridor prior to construction. The proposed route of the NGWS may require clearing of Black Throated Finch habitat which will have a significant impact on the species as set out in the criteria in the EPBC Significant Impact Guidelines for critically endangered and endangered species.⁷

⁶ Based on Adani's own studies see: 'Carmichael Coal Mine and Rail Project' Volume 1, Section 11 Matters of MNES, Figure 11-4 Sheets 1-2.

⁷ Department of the Environment, 'Matters of National Environmental Significance: Significant Impact Guidelines 1.1 *Environment Protection and Biodiversity Conservation Act 1999* (Cth) 9.

Furthermore, despite identifying a number of additional species that have the potential to occur, including the Yakka Skink, Red Goshawk, Australian Painted Snipe and Painted Honeyeater, Adani go no further in genuinely assessing likelihood or habitat for the species. This is manifestly inadequate for a project of this size and impact.

Historical Precedent: Far smaller, similar projects have been declared controlled actions in the past

A comparison with previous similar development proposals in Central Queensland indicates that far smaller projects have been declared as controlled actions by the Department of Environment and Energy for likely impacts on exactly the same species which are at issue with the NGWS.

The Olive Downs Project Water Pipeline (EPBC 2017/7868) is, just like the NGWS, water supply infrastructure to supply a coal mine. The Olive Downs pipeline proposal was for a 19km pipeline, 15m in width, which encompassed a total footprint of 30 hectares. This is only a quarter the length of the NGWS pipeline and half the width. Therefore, the total footprint of the NGWS project is 16 times that of the Olive Downs pipeline.

The species that were likely to be impacted by the Olive Downs pipeline included the Ornamental Snake, the Squatter Pigeon, the Koala and the Greater Glider. All four of those species are known or likely, or have the potential, to occur in the NGWS project. Like Adani, the Olive Downs proponent claimed that the project was unlikely to have a significant impact on these species and was not a controlled action.

However, the Department of Environment and Energy declared the action was a controlled action and that it required assessment and approval under the EPBC Act before it could proceed. Listed threatened species and communities were the stated controlling provision.

Therefore, it is incumbent on the Department to act consistently, and to implement the EPBC Act without fear or favour, which would require it to declare that the NGWS project is a controlled action for listed threatened species and communities, just as they did with the Olive Downs project.

Potential impacts on the Great Barrier Reef

When approving the Carmichael Coal Mine project, the Minister found that the proponent's proposed action may have indirect impacts on the GBRWHA via impacts through watercourses due to reduction in downstream flow.⁸ However, the Minister did not consider the cumulative impacts of the project with the flood harvesting proposed in the NGWS project.

The significant impact guidelines for the Great Barrier Reef World Heritage Area, identify changes to natural water regimes as examples of possible significant impacts arising from actions/activities likely to occur in or adjacent to the Great Barrier Reef World Heritage. It

⁸ Greg Hunt, 'Statement of Reasons for approval of a proposed action under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) EPBC 2010/5736 (14 October 2015) [35].

also refers to mining operations, dams and/or other infrastructure that may have downstream impacts on the GBRWHA.

The Burdekin catchment in which the Suttor River is located is an important catchment of the Great Barrier Reef. Recent research has identified that the Burdekin River is one of just four rivers that are most likely to affect water quality into the GBR⁹. Therefore, any activity, such as flood harvesting in the catchment and associated infrastructure, should be considered likely to have a significant impact unless or until extensive hydrological assessment and modelling has been conducted to prove otherwise.

Environmental Record

In its EPBC referral for the NGWS, Adani claims that *“The Proponent (Adani Infrastructure Pty Ltd) has adhered to its regulatory responsibilities in association with its activities. The Proponent has not been the subject of any environmental legal proceedings that have resulted in fines or prosecution.”*¹⁰

However, in making this statement, the proponent is restricting itself to Adani Infrastructure Pty Ltd, and is ignoring the environmental record of other, closely associated Adani companies and the environmental history of the company’s directors. The company has an identical ownership structure to Adani Mining Pty Ltd, the proponent of the Carmichael mine. Both are ultimately owned by Indian listed company Adani Enterprises Limited.

Adani Infrastructure Pty Ltd has two directors Jeyakumar Janakaraj and Samir Sevanti Vora. Janakaraj is also the head of Adani in Australia and Chief Executive Officer of Adani Mining Pty Ltd. Vora is also the Chief Operating Officer of Adani Mining Pty Ltd.¹¹ Janakaraj was previously Director of Operations at Konkola Copper Mines (KCM) which is not an Adani Group entity. In 2010, while Janakaraj was Director of Operations, KCM caused extensive pollution of a river near its operations in Zambia. The company pleaded guilty to the offence and was fined.¹²

Adani Mining have previously been investigated by the federal Department of the Environment for potential false and misleading conduct in failing to declare the environmental history of Jeyakumar Janakaraj during the environmental assessment of the Carmichael Mine and Rail Project. Department records show that during this investigation, the details of which were obtained by FOI, in addition to a number of overseas offences, Adani reported 11 environmental incidences in Australia involving Adani Mining Pty Ltd including some resulting in penalty infringement notices and fines.¹³

Adani company Abbot Point Bulk Coal Pty Ltd have been fined for breaching their licence at the Abbot Point coal terminal by releasing coal-laden water into the ocean. Just before

⁹ <https://www.theguardian.com/environment/2018/jun/15/great-barrier-reef-four-rivers-are-most-responsible-for-pollution>

¹⁰ North Galilee Water Scheme (NGWS) Project, EPBC Referral document, Pdf page 48
<http://epbcnotices.environment.gov.au/entity/annotation/2633c814-db6a-e811-817f-005056ba00a7/a71d58ad-4cba-48b6-8dab-f3091fc31cd5?r=1528755820874>

¹¹ <https://www.adani.com/about-us/one-vision-one-team>

¹² [The Adani Brief - Environmental Justice Australia](#)

¹³ Department of the Environment FOI 171001 documents titled “Summary of information provided by Adani in response to a request relating to their environmental history, Annexure 5” pages 5-1 to 5-5

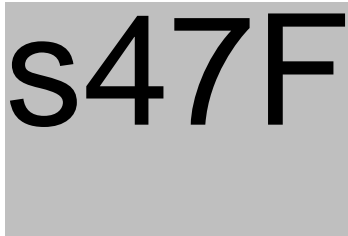
Cyclone Debbie in Queensland, the company was granted a special licence allowing them to pollute well above normal limits during severe weather. Yet, even with that licence, the Queensland Government found that Adani discharged wastewater that exceeded their pollution licence by 800%. Adani were fined \$12,000 for the offence¹⁴.

Adani Infrastructure Pty Ltd should be required to disclose the environmental breaches described above and any other environment incidents that have occurred across all associated entities within the Adani Group to the Federal Government.

In reviewing the above, it is immediately evident that the North Galilee Water Scheme must be referred as a controlled action under s 67 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) because it will have, or is likely to have an impact on matters of national environmental significance (**MNES**).

Thank you for your consideration of this submission.

Sincerely



CEO Farmers for Climate Action

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¹⁴ Adani are currently appealing the fine.

19 June 2018

Referrals Gateway
Environment Assessment Branch
Department of the Environment
GPO Box 787
Canberra ACT 2601
By email: epbc.referrals@environment.gov.au

Proposed Action: North Galilee Water Scheme

Reference Number: 2018/8191

I am writing on behalf of Greenpeace Australia Pacific (GPAP). Greenpeace is a global independent environmental organisation that uses investigations, advocacy and non-violent creative confrontation to achieve a just and healthy planet. GPAP has around 550,000 supporters whom we engage on a regular basis on matters of public interest. We appreciate the opportunity, under section 74(3), to comment on whether the proposed action should be assessed under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) ("**EPBC Act**").

1. Summary

In summary, our submission states that:

- (a) The proponent accepts that the purpose of the project is to supply water to the Carmichael Coal Project (CCP), and therefore we submit that the project will necessarily have a significant and unacceptable impact on a water resource for a coal mine.
- (b) The Carmichael Coal and Rail Project did not identify the source of water for dust suppression and so that a cumulative impact assessment was not undertaken.
- (c) The project will have a significant impact on matters of national environmental significance including threatened species, as well as a potential impact on the Great Barrier Reef World Heritage Area which should have been assessed under the precautionary principle.
- (d) The proponent has failed to declare their environmental history.
- (e) The project is a component of a larger action, in that it is intending to supply far greater volumes of water to multiple coal projects, and the Minister should use his discretion to reject the proposal.

2. Background

The project is located approximately 160km north-west of Clermont. Adani plan to harvest water from the Suttor River downstream of its confluence with the Belyando River in times of flood. The water will then be stored in a nearby upgraded dam then piped to the mine.

The project consists of:

- flood water harvesting infrastructure on the Suttor River
- a 10 GL (billion litre) dam (the upgrade of a 2GL dam is proposed)
- pumping facilities and a 4km pipe linking the harvester to the dam
- a 110km pipeline with pumping stations connecting the dam to the proposed Carmichael coal mine.

Adani estimate that construction of the NGWS will run from January 2019 to March 2020. Adani holds a water license entitling it to take 12.5 billion litres a year from the Suttor River at the location of the proposed water harvester. 1 This was obtained from the Queensland Government in March 2017 with the water being allocated from a State strategic reserve.

Adani Infrastructure is part of the Adani Group, who have previously obtained an EPBC exemption for the Carmichael Coal and Rail Project and also own the Abbot Point Coal Terminal. Adani say that the North Galilee Water Scheme is required to meet the demands of the Carmichael Coal Project as well as other mines in the region including China Stone.

3. Significant impact on a water resource for a large coal mining development

The proponent intends to extract up to 12.5GL of surface water from the Suttor River, which feeds a number of DIWA wetlands as well as providing habitat for 24 threatened fauna and 32 threatened flora species and ecological communities. Given the volume of water proposed to be extracted during the lifetime of the project, there can be no doubt that the extraction will constitute a significant impact which has not been previously assessed due to the proponent's failure to include this component of the Adani Combined Project in its previous EPBC referral.

The proponent claims that the project does not form part of a large coal mining development, although as the proponent acknowledges, the project is critical to the Carmichael Coal Project, which was assessed by the Independent Expert Scientific Committee, who found severe deficiencies in the Carmichael Project even before the impacts of the North Galilee Water Scheme are factored in. The proponent notes: "The CCP requires water to service the construction and operational phases. Not developing the NGWS was not considered an option as without the NGWS Project, the water extraction licence would be sterilised."

Section 24D of the EPBC Act says that a person must not take an action if that action "involves" a large coal mining development and that action is likely to have a significant impact on water resources. In his second reading speech, then Minister Tony Burke indicated that the amendments were introduced "so that the full impacts of those projects on water resources can be assessed". Nowhere in the Act, the second reading speech or any of the explanatory memoranda does the legislation allow for it to be read down to exclude projects where the coal mining component had been separately assessed. The Department's approach in previous referrals in relation to Nathan Dam and Olive Downs are untenable in the light of the Act. The executive does not have the power to circumvent the clear intention of Parliament.

On Question 2.9 of their referral, the Proponent has answered "No" to the question "Is the project likely to have ANY **direct or indirect** impact on a water resource related to coal/gas/mining?" (emphasis added). This statement is incorrect and requires further explanation by the proponent.

The proponent refers to the Significant Impact Guidelines (Coal Seam Gas and Large Coal Mining Developments – impacts on water resources) in support of their claim. While not having the force of law, the Significant Impact Guidelines relevantly provide:

“The EPBC Act requires the assessment of a referred action as a whole. As such, where an action referred to the Department includes both extraction of a CSG development or large coal mining development and associated infrastructure then the significance of the whole of the referred action on water resources would be considered at the assessment stage.”

Allowing proponents to avoid the water trigger and a proper assessment of the cumulative impacts of their projects by splitting approvals in the way that Adani appears to have done would completely undermine the intent of the EPBC Act, and could even be seen to be an abuse of process. The proponent should have alerted the government at the time of the referral of the Carmichael Coal and Rail Project that it was a component of a larger action.

Accordingly, the Minister should consider impacts on a water resource a controlling provision for the purposes of the EPBC Act and refer the Project to the Independent Expert Scientific Committee for assessment.

4. Listed threatened species and ecological communities

The referral identifies a number of matters of national environmental significance that are likely to be impacted by the project, including Brigalow Ecological Community, the Southern Black-Throated Finch and the Koala, but it appears that there has been very little surveying of the project area at intervals throughout the year that would match up with migratory and breeding seasons for threatened species.

The referral also fails to consider downstream impacts given a possible interactivity between different aquifers in the region, and fails to properly apply the precautionary principle in assessing impacts on potentially impacted species.

The proponent has also failed to consider impacts on the Great Barrier Reef World Heritage Area, notwithstanding that the Burdekin catchment is a significant input into the Great Barrier Reef in relation to water quality. This was accepted during the assessment for the Carmichael Coal Project, even without consideration of the considerably increased impacts arising from the North Galilee Water Scheme.

Accordingly, the Minister should declare the Great Barrier Reef World Heritage to be a controlling provision for the purposes of the EPBC assessment, and use his power under section 76 of the EPBC Act to require the proponent to provide more information about matters of national environmental significance. This should include intensive field studies covering the entire migration period for species likely to appear in the project impact area.

5. Environmental record of the proponent

The proponent claims that they have not been the subject of fines or prosecution due to failure to comply with environmental laws or regulations. Adani Infrastructure is a subsidiary of the Adani Group. Following a breach of a temporary emissions license and the release of large amounts of coal fines into the ocean near the Caley Valley Wetlands, Adani Abbot Point Bulk Coal (a subsidiary of Adani Ports and Special Economic Zones, which is part of the Adani Group and intends to take coal from the Carmichael Coal Project), was fined \$12,000. This is one of a number of environmental infringements by Adani Group companies including Adani Mining.

Jeyakumar Janakaraj is both a director of Adani Infrastructure and CEO of Adani Mining, two of the companies comprising the Adani Combined Project of which this element is part.

The Adani Group also have a significant environmental history internationally. Accordingly, Adani Infrastructure should be required to disclose offences by other companies in the Adani Group, and at least those companies that form part of the Adani Combined Project.

6. Component of a larger action

The proponent points out in their referral "There is potential in the future for the NGWS to supply additional resource-extraction projects that are located in the surrounding region and have already been subject to the State and Commonwealth approvals process or are undergoing that process. These potentially include projects such as the China Stone Coal Project (located north of the CCP mine lease). At this stage there are no such water supply agreements in place or in the process of approval (to the best of the proponent's knowledge) and the current State Government approved water licence for the NGWS is sufficient to supply the CCP only."

Given the significant additional impacts that these projects would have, including a more than doubling of the water removed from the surface aquifer, it seems evident that this project is a component of a larger action and therefore the Minister will need to use his power in section 74A to refuse the project as a component of a larger action in order to allow a cumulative impact assessment to be undertaken.

8. Conclusion and Recommendations

It is very unfortunate that the proponent failed to include this scheme in the original Carmichael referral as this has led to an intolerable situation of "approval creep". The cumulative impacts of this project combined with others in the Adani Combined Project are clearly unacceptable and we would submit that the Minister would have no difficulty in rejecting the project on that basis. The Minister can also decide that the project is the component of a larger action as the proponent has intimated. In any event, the Minister should not be making decisions about the controlling provisions until proper site surveys at appropriate points in the year have been conducted and adequate information provided to the Department about impacts on matters of national environmental significance, the Great Barrier Reef, water resources and the proponent's environmental history. If this project proceeds to the next stage, impacts on a water resource as well as the Great Barrier Reef should be considered controlling provisions.

Please do not hesitate to contact me if you have any questions regarding this submission.

Kind regards,

s47F

Campaigner

Greenpeace Australia Pacific

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LEGAL OPINION: Application of the water trigger to Adani's North Galilee Water Scheme

We have been asked to provide a legal opinion on whether the North Galilee Water Scheme (EPBC 2018/8191) (**NGWS**) is a “controlled action” by virtue of ss 24D and 24E of the *Environment Protection and Biodiversity Conservation Act 1999* (**EPBC Act**) for the purpose of consideration by the Minister for the Environment in determining whether the NGWS is a controlled action.

In summary, we consider that the NGWS falls within the ss 24D and 24E provisions and therefore warrants inclusion of these matters as controlling provisions in the Minister's forthcoming decision under s 75(1) of the EPBC Act.

Background

1. On 18 November 2010, referral documents for the Carmichael Coal Mine Project (**Project**) were publicly exhibited under s 74(3) of the EPBC Act.
2. On 22 June 2013, Schedule 1 of the *Environment Protection and Biodiversity Conservation Amendment Act 2013* (Cth) (**EPBC Amendment Act**) commenced, which relevantly commenced ss 24D and 24E of the EPBC Act (“**Water Trigger**”). On 14 October 2015, the Minister approved the Project with conditions under ss 130 and 133 of the EPBC Act.
3. On 7 June 2018, referral documents for the NGWS were publicly exhibited under s 74(3) of the EPBC Act. The proponent for the NGWS is Adani Infrastructure Pty Ltd, wholly owned by Adani Enterprises Ltd (**Proponent**). The Proponent also owns Adani Mining Pty Ltd, who is the proponent for the Carmichael Coal Mine and Rail Project (**Project**).
4. The NGWS, as it is described in its referral documentation,¹ involves:
 - a. Construction and operation of flood harvesting infrastructure that will pump water from the river into an off-stream storage, and then supply water to the Project, via pipeline;
 - b. Pipelines crossing major and minor watercourses, which include providing water to associated infrastructure for the Project.
5. In its referral documents for the NGWS, the Proponent states that:

¹ EPBC 2018-8191, see document entitled, “Referral”, pp 1-2.

- a. *“The Guideline states that development of associated infrastructure that is not part of the extraction process is not included in the definitions of ‘CSG development’ or ‘large coal mining development’” and asserts that the NGWS is therefore not captured by s 24D of the EPBC Act.²*
 - b. *“...the water trigger is limited to the assessment of impacts from the following activities: water supply for use in the extraction of coal; Management of water generated as a result of extraction of coal; and Management of waste generated as a result of extraction of coal.”*
6. We consider the Proponent’s above assertions to be incorrect at law, for the reasons set out in this advice.

Relevant legislation

“Controlled action” decision and determining the “controlling provisions”

7. Under s 75(1) of the EPBC Act, the Minister must decide whether the action that is the subject of a proposal referred to the Minister is a “controlled action”, and which provisions of Part 3 are “controlling provisions” for the action.
8. Section 67 of the EPBC Act defines a “controlled action” as one in which the taking of the action without approval under Part 9 would be prohibited by a Part 3 provision.

Sections 24D and 528

9. Part 3, s 24D(1) of the EPBC Act provides:
 - (1) *A constitutional corporation, the Commonwealth or a Commonwealth agency must not take an action if:*
 - (a) *the action **involves**:*
 - (i) *coal seam gas development; or*
 - (ii) ***large coal mining development**; and*
 - (b) *the action:*
 - (i) *has or will have a significant impact on a water resource; or*
 - (ii) *is likely to have a significant impact on a water resource.*

(emphasis added)

10. ‘Large coal mining development’ is defined in s 528 of the EPBC Act as:

***any coal mining activity** that has, or is likely to have, a significant impact on water resources (including any impacts of associated salt production and/or salinity):*

 - (a) *in its own right; or*

² EPBC 2018-8191, see document entitled, “Referral-Attach-2.1-2.3_2.5-2_mnes_no_impact_summary”, p 2.

(b) when considered with other developments, whether past, present or reasonably foreseeable developments.

(emphasis added)

Whether the NGWS involves a ‘large coal mining development’

11. Whether the NGWS involves a “large coal mining development” therefore concerns two questions: first, whether the NGWS involves a “coal mining activity”, and second, whether it has, will have, or is likely to have a significant impact on a water resource.
12. “Coal mining activity” is not expressly defined in the EPBC Act. Where a term is not expressly defined, a number of approaches to statutory construction are applied.
13. As a matter of ordinary language, s 528 refers to a “coal mining **activity**” and does not limit its application to “coal mining”, which we consider to be a statutory recognition of the many separate activities required to undertake coal mining.
14. We are of the opinion that a “coal mining activity” should be construed to include activities which, although not coal mining themselves, form part of a large scale coal mining development. This is a question of fact, having regard to the nature and purpose of the action, and the degree of its connection to coal mining.
15. That coal mining is necessarily comprised of a number of coal mining activities, which themselves may not be coal mining extraction, is, in fact, consistent with the evidence provided by the Proponent, who states in its referral documentation:³

The CCP [Carmichael Coal Project] requires water to service the construction and operational phases. Not developing the NGWS was not considered an option as without the NGWS Project, the water extraction licence would be sterilised. Water harvested would in effect be stored without an efficient operational transport mechanism to the CCP mine.

16. Having regard to extrinsic materials,⁴ we note that:
 - a. In the Minister’s second reading speech⁵ for the EPBC Amendment Act, which introduced ss 24D and 24E, he stated, “[People]...*want to know that I am considering: if there is an irreversible depletion and contamination of our surface and groundwater resources; the impacts on the way critical water systems operate; and the related effects on our ecosystems.*”⁶

³ EPBC 2018-8191, document entitled, “Referral”, pp 57-58.

⁴ *Acts Interpretation Act 1901* (Cth), s 15AB.

⁵ *Acts Interpretation Act 1901* (Cth), s 15AB(2)(f).

⁶ Commonwealth, *Parliamentary Debates*, House of Representatives, 13 March 2013, 1846 (Tony Burke).

- b. The Bills Digest⁷ for the relevant Bill addressed the impacts of large scale coal mining on water resources, including the use of water "for processing and dust suppression and other mining activities", as a requirement of coal production.⁸
- c. In considering a particular coal mine, the Bills Digest for the relevant Bill describes a coal mine's operational water use ("to satisfy their water needs") of 21 gicalitres (GL) per year from surface and sub-surface sources as "an appreciable amount" compared to a total annual extraction of around 550 GL.⁹ This reference was in the context of describing how "*large scale coal mines can also have significant impacts on water resources.*"¹⁰

17. Having regard to:

- a. The interpretation approaches described above, which we consider would be given weight by the Federal Court;¹¹
- b. The nature and purpose of the NGWS, in that it involves large scale water extraction and water infrastructure, and its stated purpose is to support the operational needs of a large coal mine project;
- c. The Proponent's own evidence indicates that it is an integral part of the Carmichael Coal Mine Project, which requires "water to service the construction and operational phases" of coal mining;¹²

we consider that the NGWS clearly involves a "coal mining activity".

- 18. If the Minister were to accept the alternative interpretation advocated by the Proponent, we consider this would result in a construction favouring evasion, and even avoidance, of ss 24D and 24E of the EPBC Act. Rather, a construction against evasion is to be preferred, such that a project cannot be split up, so that later components of a coal mining activity which also significantly impact water resources are also required to be assessed under the water trigger.

⁷ Laid before Parliament on 13 May 2013, before the Bill was enacted: *Acts Interpretation Act 1901* (Cth), s 15AB(2)(e).

⁸ Parliament of Australia, Department of Parliamentary Services, *Bills Digest*, No 108 of 2012-2013, 13 May, 12.

⁹ Parliament of Australia, Department of Parliamentary Services, *Bills Digest*, No 108 of 2012-2013, 13 May, 12.

¹⁰ Parliament of Australia, Department of Parliamentary Services, *Bills Digest*, No 108 of 2012-2013, 13 May, 12.

¹¹ *Acts Interpretation Act 1901* (Cth), s 15AB(3).

¹² EPBC 2018-8191, document entitled, "Referral", pp 57-58.

Whether the NGWS has a significant impact on a water resource

19. The requirement for an action to have, or is likely to have, a significant impact on a water resource, features in ss 24D and 24E as well as the definition of “large coal mining development” in s 528 of the EPBC Act.
20. The NGWS involves the large volume of surface water extraction of 12.5 GL per annum from the Suttor River, which is one of the major rivers of the Burdekin Basin.¹³ We consider this falls within the definition of a “water resource”.¹⁴ We are instructed that this system feeds a number of nationally important wetlands identified in the Directory of Important Wetlands. The NGWS also involves large-scale dam and pipeline infrastructure.
21. It would be surprising if such a large water scheme that was expressly for the purpose of coal mining did not have a significant impact on a water resource.

Conclusion

22. For the reasons set out above, we consider that ss 24D and 24E are controlling provisions for the NGWS and the water trigger applies.

¹³ EPBC 2018-8191, document entitled, “Referral”, pp 10, 11.

¹⁴ By virtue of s 528 of the EPBC Act and s 4 of the *Water Act 2007* (Cth).



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25th June 2018

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RE Proposed Action: North Galilee Water Scheme (NGWS) Project
Reference Number: 2018/8191

I am making this submission on behalf of Lock the Gate Alliance to the EPBC referral for the North Galilee Water Scheme (**NGWS**) proposed by Adani Infrastructure Pty Ltd (2018/8191) (**Adani**).

Lock the Gate is a national alliance of farmers, conservationists and Traditional Owners from right across Australia who are concerned about the impacts of inappropriate coal and unconventional gas mining on land and water resources.

We are calling on you to declare the NGWS as a controlled action under s 67 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) because it will have, or is likely to have an impact on matters of national environmental significance (**MNES**).

Recommendations

We recommend that you:

1. Declare the NGWS project a controlled action with controlling provisions of:
 - Listed threatened species and communities
 - A water resource in relation to coal seam gas development and large coal mining development
 - World Heritage properties

- Great Barrier Reef Marine Park
2. Require the full extent and impacts of the project on MNES to be properly assessed under the EPBC Act via a full Environmental Impact Statement.
 3. Obtain expert advice on the water impacts of the project from the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (**IESC**).
 4. Require the proponent to fully disclose the environmental compliance record of all associated companies both here and overseas in order for the public to properly understand the compliance history of the Adani group.
 5. Recognise that the action is part of a larger action proposing to take far greater volumes of surface water than identified in the referral, by:
 - Exercising your discretion under s74A of the EPBC Act to reject the referral, or
 - Utilising your powers under s76 (2) of the EPBC Act to require Adani to provide further information about the full extent of impacts to surface water, including the proposal to supply other coal mines from the NGWS and other existing water permits held by Adani for construction purposes in the catchment.

Introduction

Adani claims in their referral documents that the NGWS project is not a controlled action. Contrary to that conclusion, it is clear that:

1. The NGWS project must be assessed under the water trigger because:
 - a. the NGWS project is designed solely to facilitate extraction of coal from the Carmichael coal mine, therefore it is an action that involves “large coal mining development” as defined under s 24D of the EPBC Act; and
 - b. there is a real chance or possibility that it will have a significant impact on water resources in the Belyando Suttor sub-catchment.
2. The NGWS is also likely to have a significant impact on a number of threatened species, including the Black Throated Finch, Ornamental Snake and the Koala.
3. The potential impact of the NGWS on the Great Barrier Reef World Heritage Area has not been considered by the proponent.

It is notable that similar Central Queensland projects with a far smaller footprint that were likely to affect the same suite of threatened species have been declared as controlled actions in the past by the Department of Environment and Energy. To do otherwise now for Adani would severely undermine the integrity of the EPBC Act, especially since Adani have failed to conduct any systematic or targeted surveys for the relevant threatened species. Furthermore, Adani has failed to consider the downstream impact on threatened species and communities of the proposed water take from the Suttor River.

Most importantly, we note that Adani’s reliance on the *‘Significant Impact Guidelines for Coal Seam Gas and Large Coal Mining Developments – Impacts on Water Resources’* to argue that water is not a controlling provision is legally flawed. The guidelines do not replace the EPBC Act, and it is essential that the decision on the NGWS reflects a legally correct interpretation of the Act.

In particular, we call for the Minister to properly consider the following matters when making a decision in relation to water resources as a controlling provision:

1. Adani itself in its EIS identified surface water infrastructure as an integral part of the Carmichael coal mine and the NGWS is formally recognised as part of the Adani Combined Project.
2. The purposes of the EPBC Act are explicit and protective. Its purpose is to regulate based on the risk of impact to a protected matter regardless of the source of that risk.
3. It is apparent from both section 24D and section 131AB that the EPBC Act manifests an intention to protect “water resources” which includes “surface water”. No other controlling provision protects surface water resources than section 24D.
4. Furthermore, section 528 of the EPBC Act picks up the definition of “water resources” in section 4 of the *Water Act 2007* (Cth) which includes “surface water”.
5. The definition of large scale coal development hinges on the phrase ‘any coal mining activity’, and that must be broadly constructed given the purpose of the Act and a textual reading of the phrase itself. Had the Act intended to limit the scope only to the ‘extraction of coal’, the word mining would have been used alone.
6. Statements made in the second reading speech of the Environment Protection and Biodiversity Conservation Amendment Act 2013, which introduced the water trigger, and the relevant Bills digest both indicate that extraction of surface water for use in coal mining operations were considered to be covered by the amendment.

If you allow Adani to effectively split off the surface water component of the Carmichael coal mine and exclude it from the operation of the water trigger, despite Adani itself having identified surface water extraction and infrastructure as an integral part of the Carmichael coal mine from the outset, then you will open up a massive loophole for mining companies that will jeopardise the protection of water resources nationally.

Project Summary

The NGWS project is located approximately 160km north-west of Clermont in Central Queensland.

In times of flood, Adani plan to harvest water from the Suttor River downstream of its confluence with the Belyando River. The water will then be stored in a nearby upgraded dam then piped to the mine.

The project consists of:

- a 10 GL (billion litre) dam (the upgrade of a 2GL dam is proposed)
- pumping facilities and a 4km pipe linking the harvester to the dam
- a 110km pipeline with pumping stations connecting the dam to the proposed Carmichael coal mine.

Adani provide a total disturbance footprint for the NGWS of 508.98 hectares. Adani estimate that construction of the NGWS will run from January 2019 to March 2020.

Adani holds a water licence entitling it to take 12.5 billion litres a year from the Suttor River at the location of the proposed water harvester.¹ This was obtained from the Queensland Government in March 2017 with the water being allocated from a State strategic reserve.

Water resources and the EPBC Act

Section 24D of the EPBC Act provides as follows:

“(1) A constitutional corporation, the Commonwealth or a Commonwealth agency must not take an action if:

(a) the action involves:

- (i) coal seam gas development; or*
- (ii) large coal mining development; and*

(b) the action:

- (i) has or will have a significant impact on a water resource; or*
- (ii) is likely to have a significant impact on a water resource.”*

The term “large coal mining development” is defined in section 528 as:

“any coal mining activity that has, or is likely to have, a significant impact on water resources (including any impacts of associated salt production and/or salinity):

- (a) in its own right; or*
- (b) when considered with other developments, whether past, present or reasonably foreseeable developments”.*

In their referral, Adani state that the NGWS project does not constitute large coal mining development for the purposes of the EPBCA, and therefore that it is not a controlled action for that provision. In an attachment to the referral, Adani state that ‘*Activities relevant to the water trigger are those that form part of the process of extracting coal and not merely be associated with it*’.

However, the NGWS most certainly does constitute coal mining activity for the purposes of the EPBC Act and as such, it should be considered a controlling provision for the action. We set out below the evidence as to why the NGWS is large coal mining development for the purposes of s 24D of the EPBC Act.

The purposes of the EPBC Act are explicit and protective. Section 3 of the EPBC Act sets out the objects of the legislation. It reads, *amongst other things*, as follows:

3. Objects of Act

(1) The objects of this Act are:

- (a) to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance; and*
- (b) to promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resource; and*
- (c) to promote the conservation of biodiversity;*

¹ Water Act 2000, Water Licence Reference 617268, Expiry 30/06/2077, issued to Adani Infrastructure Pty Ltd

[...]

Therefore, the EPBC Act is to be interpreted ‘consistent with the high public policy apparent in the objects of the Act’ and ‘no narrow approach should be taken to the interpretation of legislation having objects of this kind’². Of all the provisions in the EPBC Act, the controlling provisions, in particular the threshold components of those provisions, should be construed broadly and consistently with the protective purposes of the EPBC Act.

More specifically, the EPBC Act is focused on environmental harm. Its purpose is to regulate based on the risk of impact to a protected matter regardless of the source of that risk. Previous judgements by the Federal Court indicate that the Act is primarily concerned with the consequences of actions. In *Queensland Conservation Council Inc v Minister for the Environment & Heritage*, Kiefel J remarked that “*The true focus of the EPBC Act in any event is on the area or species in question. It is concerned with the prospect of damage or some other adverse impact upon them. The Act is not so concerned with persons undertaking particular activities as it is in the consequences of them*”.

A broad, consistent interpretation of the purposes of the EPBC Act in relation to this matter, would conclude that water resources was a controlling provision, in order to ensure that it is the nature of the harm risked that is given appropriate weight rather than an undue emphasis on activity type.

The key phrase in the definition is that it refers to ‘any coal mining activity’. This deliberate Parliamentary choice to use the words ‘any’ and ‘activity’ strongly supports a broad construction, that the ‘activity’ referred to need only be related to mining, and does not have to involve the direct extraction of coal.

Had it been intended to limit the activity caught by the phrase, then the word ‘mining’ could have been used alone. Both words ‘any’ and ‘activity’ can be said to have a broadening effect on the central concept of ‘mining’. Using this construction fulfils the protective purposes of the EPBC Act and focuses on harm rather than activity type, and as such it should be preferred.

Further, it is apparent from both section 24D and section 131AB that the EPBC Act manifests an intention to protect “water resources” which includes “surface water”. Tellingly, no other controlling provision protects surface water resources than section 24D. It is also notable that section 528 of the EPBC Act picks up the definition of “water resources” in section 4 of the *Water Act 2007* (Cth) which includes “surface water”.

When the ‘water trigger’ was introduced by way of the *Environment Protection and Biodiversity Conservation Amendment Act 2013* (Cth), the then Minister for Sustainability, Environment, Water, Population and Communities in his second reading speech referred, amongst other things, to the “*irreversible depletion.....of our surface and groundwater*

² *Queensland Conservation Council Inc v Minister for Environment and Heritage* [2003] FCA 1463 at [40] per Kiefel J.

resources". He also stated that *"The Commonwealth environment department is contacting proponents to advise them of any additional information requirements which may apply, the same way we frequently seek additional information, so that the full impacts of those projects on water resources can be assessed"*. Clearly, surface water depletion and considering the full impacts of the project requires a decision on the NGWS that identifies water as a controlling provision.

The relevant *Bills Digest*, which was laid before Parliament before the Bill was enacted, considered the impacts of large scale coal mining on water resources. These included the use of water 'for processing and dust suppression and other mining activities' as a necessity of coal production. In considering a particular coal mine, the *Digest* describes operational water use of 21GL per year from surface and sub-surface sources as 'an appreciable amount' compared to a total annual extraction of around 550GL.

Therefore, it is clear that the correct statutory construction of the EPBC Act is that the extraction of water for use in dust suppression and processing does constitute a coal mining activity, especially when read in the context of the objects of the legislation.

The Environmental Impact Statement for the Carmichael Coal Mine and Rail Project makes it very clear that water supply is an integral part of the project and does indeed fall within the definition of 'any coal mining activity'. The EIS describes the project as follows³:

"The Project (Mine): a greenfield coal mine over EPC1690 and the eastern portion of EPC1080, which includes both open cut and underground mining, on mine infrastructure and associated mine processing facilities (the Mine) and the Mine (offsite) infrastructure including:

- A workers accommodation village and associated facilities (including: industrial area and rail siding)*
- A permanent airport site*
- Water supply infrastructure"*

There is no ambiguity whatsoever as to whether water supply constitutes a coal mining activity – the EIS identifies it as part of the project. It is an integral part of the coal mining project and without it, the mine cannot operate.

The EIS also goes further and describes what does NOT constitute part of the project, namely *'Development, upgrades or expansion of existing and proposed power and water infrastructure by others to supply the Galilee Basin and surrounding region. Any and each of these projects would be subject to separate environmental assessment by relevant proponents'*. Therefore, supply of water to the Adani project falls squarely within the project, but other proposals to supply water to the Galilee Basin and surrounding region do not. Nothing could be clearer.

³ GHD

The NGWS has also been explicitly recognised as being part of the Adani Combined Project by the Queensland Government. In October 2016, the Queensland Minister for State Development, Planning and Infrastructure declared the Adani Combined Project to be both ‘critical infrastructure’ and a ‘prescribed project’ under the *State Development and Public Works Organisation Act 1971* (Qld). The NGWS was listed as comprising a key component of that project.

We note that the relevant [Significant Impact Guidelines 1.3](#) (Coal Seam Gas and Large Coal Mining Developments - impacts on water resources) are quoted by Adani as supporting their argument that water extraction and infrastructure does not constitute a coal mining activity. We note that the non-statutory guidelines do not supplant the law. Most notably, the guideline is not a relevant consideration for the Minister in deciding whether the NGWS project is a controlled action and which provisions are controlling provisions under s 75(1) EPBC Act.

The Guidelines state that extraction of CSG or coal must form part of the activity and not merely be associated with it, and specify that *“where referred along with new or modified extraction of CSG or coal, the following activities will form part of the extractive process: water supply for use in the extraction of CSG or coal.....However, these activities will not independently be CSG or coal mining development where there is no new or modified extraction of CSG or coal”*.

However, the NGWS is part of the activity of the Carmichael coal mine and the mine cannot operate without it. The need to supply the water was identified in the original coal mine proposal, and therefore it undoubtedly forms part of the activity and is not ‘merely associated with it’.

Other water-related considerations

Other relevant points in relation to water resources are as follows:

1. The volume of water take is likely to constitute a significant impact

The take from the Suttor River of up to 12.5GL per year for the NGWS project is likely to constitute a significant impact on water resources because it amounts to more than 50% of the total strategic reserve for the relevant sub-catchment under the Queensland *Water Plan (Burdekin Basin) 2007*.

Furthermore, the definition in the Act defines large coal mine development as

*“any coal mining activity that has, or is likely to have, a significant impact on water resources (including any impacts of associated salt production and/or salinity):
(a) in its own right; or
(b) when considered with other developments, whether past, present or reasonably foreseeable developments”*.

Therefore, the assessment of the significance of impact must include consideration of the total impacts of the Carmichael coal mine on ground and surface water, and

consideration of other existing and proposed developments in the region, including the China Stone and the Alpha North coal mine proposals.

The Carmichael coal mine EIS states that the company expects the mine to cause major groundwater drawdown, cause a substantial reduction in flow in the Carmichael River and cause the death of downstream vegetation. The full cumulative impacts of that plus the NGWS proposals for river take are clearly likely to constitute a significant impact, even before other development projects are considered.

2. The Suttor River water take and infrastructure has not been assessed previously

In the original Environmental Impact Statement (EIS) documents for the Carmichael Coal Mine, Adani stated that the expected average water demand of the Carmichael mine would be in the order of 12 billion litres (12GL) per annum. This represents the additional water that the project would require on top of that resulting from operational activities such as pit dewatering and on-site rainwater management.

In the original EIS (2012), Adani claimed that this additional water would be sourced from on-site sources and from bores to be drilled along nearby creeks. By the time of the SEIS (late 2013), Adani had modified its plans to include a flood harvesting scheme near to the mine site on the Belyando River with a capacity equal to the mine's total additional water needs.⁴

It was only after the SEIS that Adani moved towards supplying the needs of the mine from flood harvesting of the Suttor River. So, neither the proposed take of water from the Suttor River, nor the associated infrastructure, was considered or assessed under the original EIS for the project.

3. The NGWS proposes to provide water to other mines currently under EPBC consideration

Adani notes that the NGWS could be used to supply water to other proposed coal mines in the surrounding area, but does not specify what volume of water will be supplied or how this will relate to 12.5GL they have earmarked as being needed for the Carmichael Coal Mine. It is notable that the water licence provided by the Queensland Government to Adani for the Suttor River take authorises take only for '*water supply for the Carmichael Coal Mine and Rail Project*'.

The company names the China Stone Coal Project as one of the mines it could supply. The Environmental Impact Statement for the China Stone Project states that the mine will need to source a significant portion of its water supply from off-site, especially in dry years. The project proponent, Macmines Austasia, plans to secure an external supply of up to 12.5 billion litres of water per annum.⁵ In its recent EPBC referral for the Alpha

⁴ Carmichael Coal Mine and Rail Project SEIS (Nov 2013), Updated Mine Project Description, Appendix B, P. 96-97

⁵ Page 13-25, Surface Water, Section 13, Draft Environmental Impact Statement, Project China Stone

North Project, Waratah Coal notes that it too is planning to source water “through the NGWS being developed by Adani”.⁶

On the basis of this information we consider that this NGWS proposal is actually part of a much larger action. In addition to the additional water take mooted in the NGWS referral for other mines, Adani has already obtained water permits for additional water take that is not mentioned in the referral. Water Permit 617345 allows the take of 250ML from the Belyando River for mine construction and Water Permit 614017 allow the take of 8050ML from Mistake Creek for mine construction⁷.

We believe that referring the NGWS without providing full details of the entire water take is contrary to the objects of the EPBC Act because it will allow the proponent to avoid a full impact assessment of the proposed action on MNES. We request that you exercise your discretion under s 74A EPBC Act to reject the referral or request Adani to provide further information about the extent of impacts to surface water resources that are likely to result from supplying additional billions of litres of fresh water to mines in the area under s 76(2) EPBC Act.

Threatened Species Impacts

In Attachment D of the referral, Adani state that:

“This review is based on a thorough desktop assessment and site surveys conducted over three days during May 2015 and three days during December 2016. The desktop assessment for MNES matters draws on an accumulation of database records and on-site fauna and flora surveys and habitat surveys conducted for the broader CCP. The survey results draw on several years of recent survey activity in the area and encompass a substantial portion of the NGWS project area. They include records of MNES species and habitat suitability assessments and are considered sufficient to describe the potential value of the wider project area for MNES. The site surveys were used to confirm site values in the wider project area as identified in the desktop assessment as well as provide opportunistic records of MNES”.

Contrary to Adani’s claim, it is apparent that 6 days of site surveys to ‘confirm site values’ and collection of purely opportunistic records of MNES are completely inadequate for a project that has a 500 hectare disturbance footprint and proposes over 110km of pipeline installation. Limited site assessments can NOT detect most threatened species, especially not species such as the Ornamental Snake, Black Throated Finch and Koala.

Extensive targeted surveys are required for those species, and they must be targeted properly in terms of seasonality and include considerable duration. Both those attributes were sadly lacking in the Adani work. The EPBC Guidelines for surveying fauna in Brigalow TECs state surveys should be done between September and March, so even the inadequate visual ‘site assessments’ conducted by Adani were outside of this range for the May 2015

⁶ Waratah Coal (2018) Alpha North Project, Initial Advice Statement, section 3.3.7 Water Supply, page 3-30

⁷ It is unclear whether this permit has been renewed since its initial expiry in January 2018.

work. Also the off-take site had been drought declared by the QLD government at least from Feb through April in 2015 when the surveys were done. Such dry conditions would not have been suitable to survey for the ornamental snake which needs moist soil.

Downstream impacts of water taken on threatened species not considered

The 12.5 ML/year Adani wants to off take and store for the Carmichael coal mine is likely to be a large enough volume loss to significantly reduce the flood overflows to the adjacent eucalypt open forests. If so this will affect their ecology including that of RE11.3.1, which is a Brigalow Threatened Ecological Community that extends for many kilometres downstream of the off-take site. The community is also likely to provide suitable habitat for the EPBC-listed Ornamental Snake.

There may also be other EPBC-listed species besides that are associated with RE11.3.1 that may be adversely affected. The Adani consultants focused on EPBC species associated with the off take site and the pipelines and did not consider downstream impacts on the endangered TEC and the vulnerable ornamental snake of the water take.

BoM groundwater atlas also maps the areas adjacent to the Suttor River as highly likely to depend on water inflows other than from rain i.e. the flooding that can happen in the wet seasons. That also indicates that the health of ecosystems adjacent to the downstream Suttor River could be adversely affected by the lower volumes of water inflow over the banks and that includes the health of any MNES within those ecosystems.

Impacts on important habitat for threatened species by Adani's own admission

The DoEE protected matters tool identifies one Listed Threatened Ecological Community and 13 Listed Threatened Species as being MNES that are likely to occur within the impact area of the NGWSP. The Matters of NES include:

- Brigalow (Acacia harpophylla dominant and codominant) (Endangered);
- Red Goshawk (Vulnerable);
- Squatter Pigeon (southern) (Vulnerable);
- Painted Honeyeater (Vulnerable);
- Star Finch (eastern), Star Finch (southern) (Endangered);
- Southern Black-throated Finch (Endangered);
- Australian Painted Snipe (Endangered);
- Masked Owl (northern) (Vulnerable);
- Northern Quoll (Endangered);
- Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) (Vulnerable);
- Waxy Cabbage Palm (Vulnerable);
- Yakka Skink (Vulnerable);
- Ornamental Snake (Vulnerable);
- Curlew Sandpiper (Critically Endangered).

The weaknesses of the surveys described above are particularly inadequate in light of Adani's own analysis that there is important or critical habitat present for at least 3 species – Ornamental Snake, Black-throated Finch and Koala.

Adani admit that there is 137.43 hectares of habitat suitable for the Ornamental Snake within the footprint of the project, including important habitat for the species, and that the habitat *'is almost certain to be used for foraging and breeding given the species occurs there'*. However, despite that evidence which clearly triggers the requirements for significant impact contained in the relevant Significant Impact Guidelines, they claim that there will not be a significant impact.

Similarly, Adani themselves acknowledge that there is important habitat for the Black-throated Finch and the Koala within the project footprint, but again claim that there will not be a significant impact. We contend that the conclusions reached by Adani for these two species is also inconsistent with Significant Impact Guidelines.

In relation to the Black Throated Finch, we note that Stage B of the pipeline crosses potential Black-Throated Finch Habitat in a number of locations before heading north at Mistake Creek.⁸ Construction of the pipeline will require clearing of a corridor prior to construction. The proposed route of the NGWS may require clearing of Black Throated Finch habitat which will have a significant impact on the species as set out in the criteria in the EPBC Significant Impact Guidelines for critically endangered and endangered species.⁹

Furthermore, despite identifying a number of additional species that have the potential to occur, including the Yakka Skink, Red Goshawk, Australian Painted Snipe and Painted Honeyeater, Adani go no further in genuinely assessing likelihood or habitat for the species. This is manifestly inadequate for a project of this size and impact.

Far smaller, similar projects have been declared controlled actions in the past

A comparison with previous similar development proposals in Central Queensland indicates that far smaller projects have been declared as controlled actions by the Department of Environment and Energy for likely impacts on exactly the same species which are at issue with the NGWS.

The Olive Downs Project Water Pipeline (EPBC 2017/7868) is, just like the NGWS, water supply infrastructure to supply a coal mine. The Olive Downs pipeline proposal was for a 19km pipeline, 15m in width, which encompassed a total footprint of 30 hectares. This is only a quarter the length of the NGWS pipeline and half the width. Therefore, the total footprint of the NGWS project is 16 times that of the Olive Downs pipeline.

⁸ Based on Adani's own studies see: 'Carmichael Coal Mine and Rail Project' Volume 1, Section 11 Matters of MNES, Figure 11-4 Sheets 1-2.

⁹ Department of the Environment, 'Matters of National Environmental Significance: Significant Impact Guidelines 1.1 *Environment Protection and Biodiversity Conservation Act 1999* (Cth) 9.

The species that were likely to be impacted by the Olive Downs pipeline included the Ornamental Snake, the Squatter Pigeon, the Koala and the Greater Glider. All four of those species are known or likely, or have the potential, to occur in the NGWS project. Like Adani, the Olive Downs proponent claimed that the project was unlikely to have a significant impact on these species and was not a controlled action.

However, the Department of Environment and Energy declared the action was a controlled action and that it required assessment and approval under the EPBC Act before it could proceed. Listed threatened species and communities were the stated controlling provision.

Therefore, it is incumbent on the Department to act consistently, and to implement the EPBC Act without fear or favour, which would require it to declare that the NGWS project is a controlled action for listed threatened species and communities, just as they did with the Olive Downs project.

Potential impacts on the Great Barrier Reef

When approving the Carmichael Coal Mine project, the Minister found that the proponent's proposed action may have indirect impacts on the GBRWHA via impacts through watercourses due to reduction in downstream flow.¹⁰ However, the Minister did not consider the cumulative impacts of the project with the flood harvesting proposed in the NGWS project.

The significant impact guidelines for the Great Barrier Reef World Heritage Area, identify changes to natural water regimes as examples of possible significant impacts arising from actions/activities likely to occur in or adjacent to the Great Barrier Reef World Heritage. It also refers to mining operations, dams and/or other infrastructure that may have downstream impacts on the GBRWHA.

The Burdekin catchment in which the Suttor River is located is an important catchment of the Great Barrier Reef. Recent research has identified that the Burdekin River is one of just four rivers that are most likely to affect water quality into the GBR¹¹. Therefore, any activity, such as flood harvesting in the catchment and associated infrastructure, should be considered likely to have a significant impact unless or until extensive hydrological assessment and modelling has been conducted to prove otherwise.

Environmental Record

In its EPBC referral for the NGWS, Adani claims that *"The Proponent (Adani Infrastructure Pty Ltd) has adhered to its regulatory responsibilities in association with its activities. The*

¹⁰ Greg Hunt, 'Statement of Reasons for approval of a proposed action under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) EPBC 2010/5736 (14 October 2015) [35].

¹¹ <https://www.theguardian.com/environment/2018/jun/15/great-barrier-reef-four-rivers-are-most-responsible-for-pollution>

Proponent has not been the subject of any environmental legal proceedings that have resulted in fines or prosecution.”¹²

However, in making this statement, the proponent is restricting itself to Adani Infrastructure Pty Ltd, and is ignoring the environmental record of other, closely associated Adani companies and the environmental history of the company’s directors. The company has an identical ownership structure to Adani Mining Pty Ltd, the proponent of the Carmichael mine. Both are ultimately owned by Indian listed company Adani Enterprises Limited.

Adani Infrastructure Pty Ltd has two directors Jeyakumar Janakaraj and Samir Sevanti Vora. Janakaraj is also the head of Adani in Australia and Chief Executive Officer of Adani Mining Pty Ltd. Vora is also the Chief Operating Officer of Adani Mining Pty Ltd.¹³ Janakaraj was previously Director of Operations at Konkola Copper Mines (KCM) which is not an Adani Group entity. In 2010, while Janakaraj was Director of Operations, KCM caused extensive pollution of a river near its operations in Zambia. The company pleaded guilty to the offence and was fined.¹⁴

Adani Mining have previously been investigated by the federal Department of the Environment for potential false and misleading conduct in failing to declare the environmental history of Jeyakumar Janakaraj during the environmental assessment of the Carmichael Mine and Rail Project. Department records show that during this investigation, the details of which were obtained by FOI, in addition to a number of overseas offences, Adani reported 11 environmental incidences in Australia involving Adani Mining Pty Ltd including some resulting in penalty infringement notices and fines.¹⁵

Adani company Abbot Point Bulk Coal Pty Ltd have been fined for breaching their licence at the Abbot Point coal terminal by releasing coal-laden water into the ocean. Just before Cyclone Debbie in Queensland, the company was granted a special licence allowing them to pollute well above normal limits during severe weather. Yet, even with that licence, the Queensland Government found that Adani discharged wastewater that exceeded their pollution licence by 800%. Adani were fined \$12,000 for the offence¹⁶.

Adani Infrastructure Pty Ltd should be required to disclose the environmental breaches described above and any other environment incidents that have occurred across all associated entities within the Adani Group to the Federal Government.

¹² North Galilee Water Scheme (NGWS) Project, EPBC Referral document, Pdf page 48
<http://epbcnotices.environment.gov.au/entity/annotation/2633c814-db6a-e811-817f-005056ba00a7/a71d58ad-4cba-48b6-8dab-f3091fc31cd5?t=1528755820874>

¹³ <https://www.adani.com/about-us/one-vision-one-team>

¹⁴ [The Adani Brief - Environmental Justice Australia](#)

¹⁵ Department of the Environment FOI 171001 documents titled “Summary of information provided by Adani in response to a request relating to their environmental history, Annexure 5” pages 5-1 to 5-5

¹⁶ Adani are currently appealing the fine.



FOI 180914
Document 25

s47F

Campaign Coordinator
Lock the Gate Alliance
c/- PO Box 55
Helensvale Qld 4212

s47F

30th August 2018

The Hon Melissa Price, Minister for Environment
PO Box 6022
House of Representatives, Parliament House
Canberra ACT 2600
Cc: epbc.referrals@environment.gov.au

Dear Minister,

Re: New Information on Adani North Galilee Water Scheme

Congratulations on your recent appointment as the Federal Environment Minister. We look forward to working with you, particularly in relation to protecting our scarce water resources from negative impacts from mining and gas.

We are writing in relation to the Adani North Galilee Water Scheme (NGWS), which was referred by Adani under the EPBC Act 1999 earlier this year (2018/8191). In their referral documents, Adani claim that the NGWS is not a controlled action.

However, our analysis suggests otherwise and we provided a detailed submission on the referral outlining the reasons why we believe it needs to be declared a controlled action and the controlling provisions which we consider relevant.

We are writing because we have new information which we believe you should consider when making a determination on whether the project is a controlled action.

We have just recently obtained a set of documents under Queensland Right to Information laws from the Department of Natural Resources and Mines pertaining to their decision to grant Adani a licence to take water from the Suttor River as part of the NGWS.

These documents shed more light on the likely impact of the water take on the environment downstream.

In relation to the downstream impacts of the take, the document contain extracts from DNRM targeted environmental review report, which assessed the impacts of the Suttor River take, and found that *“lagoons located higher on the floodplain will have a reduced number of filling opportunities and increased spells between these events with the proposed*

water product and further release of unallocated water (strategic and general) in the Suttor River below Belyando Junction.....

This potentially indicates an additional risk not only to the lagoon aquatic ecosystems, but also to other long-lived floodplain water-dependent ecosystems (eg floodplain vegetation communities, including some of-concern and endangered regional ecosystems)".

This is particularly relevant because there are a number of nationally threatened species and ecosystems that are likely to occur in this area.

Other documents released indicate that Adani themselves acknowledge there are likely to be Groundwater Dependent Ecosystems affected by the proposal¹, but do not provide any information or assessment of GDEs or any further information on the risks. Specifically, they note that *'the Suttor River downstream of the extraction has been identified through various desktop studies as potentially containing GDEs reliant on subsurface groundwater (vegetation) and surface expression of groundwater (rivers, springs, wetlands)'*.

We believe the information above is sufficient to indicate that there is likely to be a significant impact from the activity, which warrants a full Environmental Impact Assessment.

The documents we have obtained also reveal the general inadequacy of the environmental assessment that was conducted by Adani. As far as we can ascertain, it was purely a desktop assessment which did not involve any on-ground surveys of potential environmental impacts.

In light of the above information, we recommend that you declare that the NGWS is a controlled action, with the following controlling provisions:

1. Listed threatened species and communities
2. A water resource in relation to coal seam gas development and large coal mining development
3. World Heritage properties
4. Great Barrier Reef Marine Park

It is crucial that the full extent and impacts of the project on MNES are properly assessed under the EPBC Act via a full Environmental Impact Statement.

Please contact me at the address provided above if you would like us to provide full copies of the RTI documents cited in this letter.

Many thanks,

s47F

¹ Adani Infrastructure Pty Ltd 2017. Supporting Information for an Application for a Water Licence to Take Unallocated Water from the Strategic Reserve in Sub-catchment E of the Burdekin Basin.

s22

From: s47F [redacted]@bigpond.com>
Sent: Monday, 25 June 2018 4:16 PM
To: yourenvminister
Subject: MC18-010514 North Galilee Water Scheme
Attachments: submission_for_north_galilee_water_scheme.docx

Categories: For Info

Contact your Minister request notification

Contact your Minister for the Environment and Energy webform submitted on 25/06/2018, 4:16

PDR Id: null

Minister name: Josh Frydenberg

Title: Mrs

First name: s47F [redacted]

Last name: s47F [redacted]

Email: s47F [redacted]@bigpond.com

Organisation:

Address: s47F [redacted]

Phone:

Subject: North Galilee Water Scheme ref.2018/8191

Comments: Minister, Please find attached my submission regarding application No.2018/8191 by Adani Infrastructure Pty. Ltd. for the North Galilee Water Scheme Yours sincerely s47F [redacted]
[redacted]

Attachments: 1 file(s) attached.



Mackay Conservation Group

FOI 180914
Document 27

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25th June 2018

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Proposed Action: North Galilee Water Scheme (NGWS) Project
Reference Number: 2018/8191

Please accept this submission on behalf of the Mackay Conservation Group, a community lead group with thousands of supporters in the Mackay region who want to protect our natural environment for perpetuity, to the EPBC referral for the North Galilee Water Scheme (“**NGWS**”) proposed by Adani Infrastructure Pty Ltd (2018/8191) (“**Adani**”).

Mackay Conservation Group recommends that the NGWS be declared as a controlled action under section 67 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (“**EPBC Act**”) because it will have, or is likely to have an impact on matters of national environmental significance (“**MNES**”).

Adani claims in their referral documents that the NGWS project is not a controlled action. The NGWS project is a controlled action because of the reasons listed below.

1. The NGWS must be assessed under the water trigger because:
 - a. the NGWS project has been designed solely for the purpose of facilitating the extraction of coal from the Carmichael coal mine, therefore it is an action that involves “large coal mining development” as defined under s 24D of the EPBC Act; and
 - b. there is a real risk that the NGWS will have a significant impact on water resources in the Belyando Suttor sub-catchment which are important water resources for drought affected North Queensland.
2. The NGWS is likely to have a significant impact on many threatened species and communities, including the Ornamental Snake, Black Throated Finch and Koalas.
3. Other projects affecting these same threatened species but with a far smaller area of impact have been declared controlled actions in the past by the Department of Environment and Energy, so it the NGWS should also be declared as such.
4. The potential impact of the Suttor River water take and the associated infrastructure on the Great Barrier Reef World Heritage Area has not been considered by the proponent.

5. The proponent has not considered the impact of water take from the Belyando-Suttor catchment during times of drought conditions which are likely to be highly varied under climate change.

Recommendations

The Mackay Conservation Group recommends that:

1. Declare the NGWS as a controlled action including the controlling provisions of:
 - Listed threatened species and communities
 - A water resource in relation to coal seam gas development and large coal mining development
 - World Heritage properties
 - Great Barrier Reef Marine Park
2. Require the full extent and impacts of the NGWS on MNES to be thoroughly assessed under the EPBC Act via a full Environmental Impact Statement.
3. Obtain expert advice on the water impacts of the project from the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC).
4. Require the proponent to fully disclose the environmental compliance record of all associated companies both here and overseas in order for the public to properly understand the compliance history of the Adani group.
5. Recognise that the action is part of a larger action proposing to take far greater volumes of surface water than identified in the referral, by:
 - Exercising your discretion under s74A of the EPBC Act to reject the referral, or
 - Utilising your powers under s76 (2) of the EPBC Act to require Adani to provide further information about the full extent of impacts to surface water, including the proposal to supply other coal mines from the NGWS and other existing water permits held by Adani for construction purposes in the catchment.

Project Summary

Adani's NGWS project is proposed to be built approximately 160km north-west of Clermont in Central Queensland, part of the Mackay Conservation Group area. Adani estimates the NGWS will run from January 2019 to March 2020 and that the total disturbance footprint will be 508.98 hectares.

Adani has been granted a water licence entitling the company to draw 12.5 billion litres of water a year from the Suttor River.¹ This water is allocated from a State strategic reserve, under the licence granted by the Queensland Government in March 2017.

Adani proposes to take water from the Suttor River (downstream of its confluence with the Belyando River) during flood events. This water will be stored in a nearby dam that will need to be expanded, before the water is piped to the Carmichael mine.

Adani's NGWS project proposes:

¹ Water Act 2000, Water Licence Reference 617268, Expiry 30/06/2077, issued to Adani Infrastructure Pty Ltd

- flood water harvesting infrastructure on the Suttor River
- a 10 GL (billion litre) dam, which will be constructed by upgrading an existing 2GL dam.
- a 4km pipe linking the water harvester to the dam with associated pumping facilities
- a 110km pipeline with pumping stations connecting the dam to the proposed Carmichael site.

The Mackay Conservation Group provides evidence below as to why the NGWS must be considered as a large coal mining development for the purposes of s 24D of the EPBC Act.

The NGWS is a controlled action

Adani state in their referral that the NGWS project does not constitute large coal mining development under the EPBC Act, and therefore the project is not a controlled action. The company is arguing that because the NGWS is a coal mining ‘ancillary activity’ (i.e. not a part of the direct mining process), the EPBC water trigger does not apply. However, Adani has also conceded that the NGWS Project is essential to their mining operations and that the mine cannot proceed without it. The need to supply the water was identified in the original coal mine proposal, and therefore it clearly supports the activity and is not ‘merely associated with it’. The NGWS undoubtedly is a coal mining activity for the purposes of the EPBC Act and as such, it should be considered a controlling provision for the action.

This conclusion is supported by the fact that the NGWS has been formally identified as part of the Adani Combined Project by the Queensland Government.

The NGWS is recognised as part of the Adani Combined Project

The NGWS was explicitly recognised as being part of the Adani Combined Project by the Queensland Government, in October 2016. The Queensland Minister for State Development, Planning and Infrastructure declared the Adani Combined Project to be both ‘critical infrastructure’ and a ‘prescribed project’ under the *State Development and Public Works Organisation Act 1971* (Qld). The NGWS was listed as comprising a key component of Adani’s project.

The Suttor River water take and infrastructure has not been assessed

Adani’s original Environmental Impact Statement (EIS) submitted in 2012 states that the expected average water take of the Carmichael mine would be approximately 12 billion litres each year, used as additional water (on top of water required for operational activities) which would be taken from on-site sources and from bores to be drilled along nearby creeks. Then in late 2013, Adani’s SEIS included modified plans involving a flood harvesting scheme on the Belyando River with capacity equal to the mine’s total additional water needs.²

It was after the submission of the SEIS that Adani changed its plans to supplying the needs of the mine by flood harvesting water from the Suttor River. Therefore, neither the proposed take of water from the Suttor River, nor the associated infrastructure, has been considered or assessed under the original EIS for the project.

Far smaller projects have been declared controlled actions in the past

Similar projects of a smaller scale in Central Queensland have been declared as controlled actions by the Department of Environment and Energy for likely impacts on exactly the same species that are likely to be impacted by the NGWS.

For example the Olive Downs Project Water Pipeline (EPBC 2017/7868), a similar but far smaller project, claimed that the Ornamental Snake, the Squatter Pigeon, the Koala and the Greater Glider were unlikely to be impacted and like Adani, claimed it's pipeline was not a controlled action. However, the Department of Environment and Energy declared the project was a controlled action and that it required assessment and approval under the EPBC Act before it could proceed. Therefore, it is incumbent on the Department to act consistently, to implement the EPBC Act without favour, and declare that the NGWS project is a controlled action for listed threatened species and communities, just like the Olive Downs project.

See more on the impacted threatened species in the section below.

Adani will use NGWS to provide water to other projects currently under EPBC assessment

Adani notes that the NGWS could be used as a water source for other coal mines proposed in the surrounding area, but fails to specify what volume of water will be supplied or how this will relate to 12.5GL they require for the Carmichael Mine. Adani's current water licence only permits water from the Suttor River to supply the Carmichael project, and not any of the other mining operations.

The China Stone Coal Project (Macmines Austasia) is listed as one of the mines the NGWS could supply, with the China Stone EIS stating that it will take a significant portion of its water from off-site sources, especially in dry years. Macmines Austasia, plans to secure a supply of up to 12.5 billion litres of water every year.³ The recent Waratah Coal referral also states that it plans to source water from the NGWS.⁴

With at least three mining projects planning to draw water through the NGWS, the proposal is actually a much larger action. Adani has also obtained additional water take permits not mentioned in the referral, including 250ML from the Belyando River and 8050ML from Mistake Creek.⁵

Without providing full details of the entire amount of water taken the NGWS referral does not meet the EPBC Act as the proponent would not have to conduct a full impact assessment of the action on MNES.

Under s 74A EPBC Act the Department must reject the NGWS referral and/or request that Adani provide further information about the impacts to surface water resources that are likely to result from supplying an increase of billions of litres of fresh water to mines in the Galilee under s 76(2) EPBC Act.

³ Page 13-25, Surface Water, Section 13, Draft Environmental Impact Statement, Project China Stone

⁴ Waratah Coal (2018) Alpha North Project, Initial Advice Statement, section 3.3.7 Water Supply, page 3-30

⁵ It is unclear whether this permit has been renewed since its initial expiry in January 2018.

Significant impacts to critical water resources

The loss of up to 12.5GL from the Suttor River every year for Adani's NGWS project is likely to constitute a significant impact on scarce water resources because it amounts to over half of the total strategic reserve for the sub-catchment under the Queensland *Water Plan (Burdekin Basin) 2007*.

Potential impact on MNES downstream from the NGWS

The Belyando River is a shallow river on a broad flood plain with wet season flooding crucial for maintaining ecological health and biodiversity downstream. The construction of dams, weirs, off-river storage, diversion practices etc. can change and reduce the frequency and volume of flows to floodplains. Such alterations to water flow are likely to significantly impact regional ecosystems, wildlife and surface water users downstream, e.g. reduction in water flow could mean a reduction in ecosystem functioning, threatened species populations and agricultural production. It is likely that important regional ecosystems downstream from the NGWS are dependent on flood events. The NGWS could cause significant impact on MNES such as the EPBC-listed endangered Threatened Brigalow Ecological Community.

The NGWS should be declared a controlled action so that a full environment impact assessment is conducted to estimate the hydro-ecological impacts on the alteration and reduction of wet season flows that Adani's NGWS will have on important regional ecosystems and the entire Burdekin Catchment.

Cumulative impacts of surface water and groundwater take

Adani has not included the potential impacts that the drainage of groundwater sources could have on the region's surface water flow. Adani has predicted that its project's use of groundwater will cause the water table to drop and therefore could impact the flow of the Carmichael River which leads into the Belyando and Suttor Rivers. The cumulative impacts of groundwater and surface water take that Adani's projects will have on downstream water flows, ecosystems and users has not been considered by the proponent and should be assessed in full under the EPBC Act.

Water Quality Impacts

The Queensland Government allows mine-polluted water from storage areas at operational sites to be released during times of high stream flows, on the basis that pollutants will be diluted to levels within water quality guidelines. The water released can contain pollutants including heavy metals that do not safely biodegrade and can bioaccumulate in surrounding and downstream environments.

Over the 60 year life of the mine, concentrations of toxic heavy metals and other non-biodegradable pollutants from coal mining are likely to build up in the ecosystems and waterways downstream of the site. Adani has not addressed the impact that mine-pollutant water will have over time downstream from the mine.

Potential impacts on the Great Barrier Reef

The cumulative impacts of the flood water harvesting proposed in the NGWS on the Great Barrier Reef World Heritage Area (GBRWHA) have not been considered. Changes to water regimes due to actions in or adjacent to the GBRWHA is classified as a possible significant impact under the GBRWHA protection guidelines. It also specifically refers to mining operations, dams and/or other infrastructure that may have downstream impacts on the GBRWHA, and therefore clearly applies to the NGWS proposal.

The Burdekin catchment (including the Suttor River) is a major catchment of the Great Barrier Reef. Recent research identified that the Burdekin River is one of just four rivers that are most likely to impact the quality of water flowing into the GBR.⁶ Therefore, any activity, such as flood harvesting in the catchment and associated infrastructure, should be considered likely to have a significant impact unless or until

⁶ <https://www.theguardian.com/environment/2018/jun/15/great-barrier-reef-four-rivers-are-most-responsible-for-pollution>

extensive hydrological assessment and modelling has been conducted to prove otherwise.

Impacts on Threatened Species

Threatened species surveys inadequate

Threatened species surveys conducted for the project by Adani are inadequate. They appear to have conducted only six days of site inspections – one three day period in December 2016 and one three day period in May 2-15. The duration and the seasonality of these surveys are inadequate. No information about species survey techniques nor where surveys were conducted have been provided.

In light of the information that is available, it would seem that there were no systematic surveys for flora and fauna, and it seems unlikely that there were any extensive targeted surveys for relevant species using appropriate survey techniques. Due to the large (500ha) disturbance area of the project and the 110km pipeline installation, these species surveys are inadequate.

Impacts on important habitat for threatened species by Adani's own admission

The DoEE protected matters tool identifies one Listed Threatened Ecological Community and 13 Listed Threatened Species as being MNES that are likely to occur within the impact area of the NGWSP. The Matters of NES include:

- Brigalow (*Acacia harpophylla* dominant and codominant) (Endangered);
- Red Goshawk (Vulnerable);
- Squatter Pigeon (southern) (Vulnerable);
- Painted Honeyeater (Vulnerable);
- Star Finch (eastern), Star Finch (southern) (Endangered);
- Southern Black-throated Finch (Endangered);
- Australian Painted Snipe (Endangered);
- Masked Owl (northern) (Vulnerable);
- Northern Quoll (Endangered);
- Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) (Vulnerable);
- Waxy Cabbage Palm (Vulnerable);
- Yakka Skink (Vulnerable);
- Ornamental Snake (Vulnerable);
- Curlew Sandpiper (Critically Endangered).

Though Adani notes that the *habitat* of many of the threatened species listed are likely to be impacted, they claim that the listed species will *not be significantly impacted*. Due to the size and actions included in the proposal the Mackay Conservation Group believe that potential impacts should be assessed in full under the EPBC Act.

Environmental Record

In its EPBC referral for the NGWS, Adani claims that “*The Proponent (Adani Infrastructure Pty Ltd) has adhered to its regulatory responsibilities in association with its activities. The Proponent has not been the subject of any environmental legal proceedings that have resulted in fines or prosecution.*”⁷

However, in making this statement, the proponent is restricting itself to Adani Infrastructure Pty Ltd, and is ignoring the environmental record of other, closely associated Adani companies and the environmental history of the company’s directors. Adani Infrastructure Pty Ltd should be required to disclose the environmental breaches and any other environment incidents that have occurred across all associated entities within the Adani Group to the Federal Government.

⁷

North Galilee Water Scheme (NGWS) Project, EPBC Referral document, Pdf page 48

<http://epbcnotices.environment.gov.au/entity/annotation/2633c814-db6a-e811-817f-005056ba00a7/a71d58ad-4cba-48b6-8dab-f3091fc31cd5?t=1528755820874>



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June 23rd 2018

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Proposed Action: North Galilee Water Scheme (NGWS) Project
Reference Number: 2018/8191

Please accept this submission on behalf of Protect the Bush Alliance to the EPBC referral for the North Galilee Water Scheme (**NGWS**) proposed by Adani Infrastructure Pty Ltd (2018/8191) (**Adani**).

Protect the Bush Alliance (PTBA) is an alliance of 22 NGOs and community groups in Queensland and Australia representing over 30,000 people. Our goal is to implement ways of preventing the continuing loss of areas of high conservation values to inappropriate development. One of the ways we do this is by conducting flora and fauna surveys on properties of high conservation value and on the properties which link them.

Members of PTBA have conducted surveys on 18 major land holdings associated with the development of coal mines in central Queensland. We maintain association with many land holders and communities affected by the major resource developments planned for Queensland, and remain concerned that these developments strategically impact on areas of biological significance and diversity.

We recommend that you declare the NGWS as a controlled action under s 67 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) because it will have, or is likely to have an impact on matters of national environmental significance (**MNES**).

Adani claims in their referral documents that the NGWS project is not a controlled action. Contrary to that conclusion, it is clear that:

1. The NGWS project must be assessed under the water trigger because:
 - a. the NGWS project is designed solely to facilitate extraction of coal from the Carmichael coal mine, therefore it is an action that involves "large coal mining development" as defined under s 24D of the EPBC Act; and
 - b. there is a real chance or possibility that it will have a significant impact on water resources in the Belyando Suttor sub-catchment.
2. The NGWS is also likely to have a significant impact on a number of threatened species and communities, including the Black Throated Finch, Ornamental Snake and the Koala.

3. Projects affecting the same threatened species with a far smaller footprint have been declared as controlled actions in the past by the Department of Environment and Energy.
4. The potential impact of the Suttor River water take and the associated infrastructure on the Great Barrier Reef World Heritage Area has not been considered by the proponent.

Recommendations

We recommend that you:

1. Declare the NGWS project a controlled action with controlling provisions of:
 - Listed threatened species and communities
 - A water resource in relation to coal seam gas development and large coal mining development
 - World Heritage properties
 - Great Barrier Reef Marine Park
2. Require the full extent and impacts of the project on MNES to be properly assessed under the EPBC Act via a full Environmental Impact Statement.
3. Obtain expert advice on the water impacts of the project from the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (**IESC**).
4. Require the proponent to fully disclose the environmental compliance record of all associated companies both here and overseas in order for the public to properly understand the compliance history of the Adani group.
5. Recognise that the action is part of a larger action proposing to take far greater volumes of surface water than identified in the referral, by:
 - Exercising your discretion under s74A of the EPBC Act to reject the referral, or
 - Utilising your powers under s76 (2) of the EPBC Act to require Adani to provide further information about the full extent of impacts to surface water, including the proposal to supply other coal mines from the NGWS and other existing water permits held by Adani for construction purposes in the catchment.

Project Summary

The NGWS project is located approximately 160km north-west of Clermont in Central Queensland.

In times of flood, Adani plan to harvest water from the Suttor River downstream of its confluence with the Belyando River. The water will then be stored in a nearby upgraded dam then piped to the mine.

The project consists of:

- flood water harvesting infrastructure on Suttor River
- a 10 GL (billion litre) dam (the upgrade of a 2GL dam is proposed)
- pumping facilities and a 4km pipe linking the harvester to the dam
- a 110km pipeline with pumping stations connecting the dam to the proposed Carmichael coal mine.

Adani provide a total disturbance footprint for the NGWS of 508.98 hectares. Adani estimate that construction of the NGWS will run from January 2019 to March 2020.

Adani holds a water licence entitling it to take 12.5 billion litres a year from the Suttor River at the location of the proposed water harvester.¹ This was obtained from the Queensland Government in March 2017 with the water being allocated from a State strategic reserve.

Water Resources

Section 24D of the EPBC Act provides as follows:

“(1) A constitutional corporation, the Commonwealth or a Commonwealth agency must not take an action if:

(a) the action involves:

- (i) coal seam gas development; or*
- (ii) large coal mining development; and*

(b) the action:

- (i) has or will have a significant impact on a water resource; or*
- (ii) is likely to have a significant impact on a water resource.”*

The term “large coal mining development” is defined in section 528 as:

“any coal mining activity that has, or is likely to have, a significant impact on water resources (including any impacts of associated salt production and/or salinity):

- (a) in its own right; or*
- (b) when considered with other developments, whether past, present or reasonably foreseeable developments”.*

In their referral, Adani state that the NGWS project does not constitute large coal mining development for the purposes of the EPBCA, and therefore that it is not a controlled action for that provision. In an attachment to the referral, Adani state that *‘Activities relevant to the water trigger are those that form part of the process of extracting coal and not merely be associated with it’*.

However, the NGWS most certainly does constitute coal mining activity for the purposes of the EPBC Act and as such, it should be considered a controlling provision for the action. We set out below the evidence as to why the NGWS is large coal mining development for the purposes of s 24D of the EPBC Act.

The Suttor River water take and infrastructure has not been assessed previously

In the original Environmental Impact Statement (EIS) documents for the Carmichael Coal Mine, Adani stated that the expected average water demand of the Carmichael mine would be in the order of 12 billion litres (12GL) per annum. This represents the additional water that the project would require on top of that resulting from operational activities such as pit dewatering and on-site rainwater management.

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It was only after the SEIS that Adani moved towards supplying the needs of the mine from flood harvesting of the Suttor River. So, neither the proposed take of water from the Suttor River, nor the associated infrastructure, was considered or assessed under the original EIS for the project.

¹ Water Act 2000, Water Licence Reference 617268, Expiry 30/06/2077, issued to Adani Infrastructure Pty Ltd

² Carmichael Coal Mine and Rail Project SEIS (Nov 2013), Updated Mine Project Description, Appendix B, P. 96-97

The NGWS has been formally recognised as part of the Adani Combined Project

The NGWS has been explicitly recognised as being part of the Adani Combined Project by the Queensland Government. In October 2016, the Queensland Minister for State Development, Planning and Infrastructure declared the Adani Combined Project to be both ‘critical infrastructure’ and a ‘prescribed project’ under the *State Development and Public Works Organisation Act 1971* (Qld). The NGWS was listed as comprising a key component of that project.

The volume of water take is likely to constitute a significant impact

The take from the Suttor River of up to 12.5GL per year for the NGWS project is likely to constitute a significant impact on water resources because it amounts to more than 50% of the total strategic reserve for the relevant sub-catchment under the *Queensland Water Plan (Burdekin Basin) 2007*.

Water take and infrastructure does constitute a ‘coal mining activity’

The term ‘coal mining activity’ in the definition of ‘large coal mining development’ includes activities such as water extraction that form part of a large scale development for the mining of coal. The term is not restricted to ‘coal mining’ only, as appears to have been concluded by Adani.

When the ‘water trigger’ was introduced by way of the *Environmental Protection and Biodiversity Conservation Amendment Act 2013* (Cth), the then Minister for Sustainability, Environment, Water, Population and Communities in his second reading speech referred, amongst other things, to the “*irreversible depletion.....of our surface and groundwater resources*”.

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We note that the relevant [Significant Impact Guidelines 1.3](#) (Coal Seam Gas and Large Coal Mining Developments - impacts on water resources) are quoted by Adani as supporting their argument that water extraction and infrastructure does not constitute a coal mining activity. We note that the non-statutory guidelines do not supplant the law. Most notably, the guideline is not a relevant consideration for the Minister in deciding whether the NGWS project is a controlled action and which provisions are controlling provisions under s 75(1) EPBC Act.

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However, the NGWS is part of the activity of the Carmichael coal mine and the mine cannot operate without it. The need to supply the water was identified in the original coal mine proposal, and

therefore it undoubtedly forms part of the activity and is not ‘merely associated with it’. This conclusion is supported by the fact that the NGWS has been formally identified as part of the Adani Combined Project by the Queensland Government.

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Adani notes that the NGWS could be used to supply water to other proposed coal mines in the surrounding area, but does not specify what volume of water will be supplied or how this will relate to 12.5GL they have earmarked as being needed for the Carmichael Coal Mine. It is notable that the water licence provided by the Queensland Government to Adani for the Suttor River take authorises take only for ‘water supply for the Carmichael Coal Mine and Rail Project’.

The company names the China Stone Coal Project as one of the mines it could supply. The Environmental Impact Statement for the China Stone Project states that the mine will need to source a significant portion of its water supply from off-site, especially in dry years. The project proponent, Macmines Australasia, plans to secure an external supply of up to 12.5 billion litres of water per annum.³ In its recent EPBC referral for the Alpha North Project, Waratah Coal notes that it too is planning to source water “through the NGWS being developed by Adani”.⁴

On the basis of this information we consider that this NGWS proposal is actually part of a much larger action. In addition to the additional water take mooted in the NGWS referral for other mines, Adani has already obtained water permits for additional water take that is not mentioned in the referral. Water Permit 617345 allows the take of 250ML from the Belyando River for mine construction and Water Permit 614017 allow the take of 8050ML from Mistake Creek for mine construction⁵.

We believe that referring the NGWS without providing full details of the entire water take is contrary to the objects of the EPBC Act because it will allow the proponent to avoid a full impact assessment of the proposed action on MNES. We request that you exercise your discretion under s 74A EPBC Act to reject the referral or request Adani to provide further information about the extent of impacts to surface water resources that are likely to result from supplying additional billions of litres of fresh water to mines in the area under s 76(2) EPBC Act.

Threatened Species

Threatened species surveys inadequate

Threatened species surveys conducted for the project by Adani are inadequate. They appear to have conducted only 6 days of site inspections – one three day period in December 2016 and one three day period in May 2015. This is vastly inadequate both in duration and in seasonality, particularly for a project that has a 500ha disturbance and proposes over 110km of pipeline installation. The Adani project has been in the planning for several years; the minimum expectation would be quarterly seasonal surveys be undertaken over three years. Anything less than this fails to adequately assess the presence or absence of species across landscapes during times of drought or inundating rains.

³ Page 13-25, Surface Water, Section 13, Draft Environmental Impact Statement, Project China Stone

⁴ Waratah Coal (2018) Alpha North Project, Initial Advice Statement, section 3.3.7 Water Supply, page 3-30

⁵ It is unclear whether this permit has been renewed since its initial expiry in January 2018.

There is very little information provided as to the nature or intensity of the surveys that were conducted. However, in Attachment D of the referral Adani refer to site assessments involving apparently visual ‘assessment of fauna habitat values’. In other parts of the referral, Adani make some reference to surveys for the Koala, Ornamental Snake and Black Throated Finch, but it is not clear if this is simply the ‘site assessments’ referred to in Attachment D. There is no information provided on what survey techniques were used for each species and where they were applied.

In light of the information that is available, it would seem that there were no systematic surveys for flora and fauna, and it seems unlikely that there were any extensive targeted surveys for relevant species using appropriate survey techniques.

Impacts on important habitat for threatened species by Adani’s own admission

The DoEE protected matters tool identifies one Listed Threatened Ecological Community and 13 Listed Threatened Species as being MNES that are likely to occur within the impact area of the NGWSP. The Matters of NES include:

- Brigalow (Acacia harpophylla dominant and codominant) (Endangered);
- Red Goshawk (Vulnerable);
- Squatter Pigeon (southern) (Vulnerable);
- Painted Honeyeater (Vulnerable);
- Star Finch (eastern), Star Finch (southern) (Endangered);
- Southern Black-throated Finch (Endangered);
- Australian Painted Snipe (Endangered);
- Masked Owl (northern) (Vulnerable);
- Northern Quoll (Endangered);
- Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) (Vulnerable);
- Waxy Cabbage Palm (Vulnerable);
- Yakka Skink (Vulnerable);
- Ornamental Snake (Vulnerable);
- Curlew Sandpiper (Critically Endangered).

The weaknesses of the surveys described above are particularly inadequate in light of Adani’s own analysis that there is important or critical habitat present for at least 3 species – Ornamental Snake, Black-throated Finch and Koala.

Adani admit that there is 137.43 hectares of habitat suitable for the Ornamental Snake within the footprint of the project, including important habitat for the species, and that the habitat ‘*is almost certain to be used for foraging and breeding given the species occurs there*’. However, despite that evidence which clearly triggers the requirements for significant impact contained in the relevant Significant Impact Guidelines, they claim that there will not be a significant impact.

Similarly, Adani themselves acknowledge that there is important habitat for the Black-throated Finch and the Koala within the project footprint, but again claim that there will not be a significant impact. We contend that the conclusions reached by Adani for these two species is also inconsistent with Significant Impact Guidelines.

In relation to the Black Throated Finch, we note that Stage B of the pipeline crosses potential Black-Throated Finch Habitat in a number of locations before heading north at Mistake Creek.⁶ Construction of the pipeline will require clearing of a corridor prior to construction. The proposed route of the NGWS may require clearing of Black Throated Finch habitat which will have a significant impact on the species as set out in the criteria in the EPBC Significant Impact Guidelines for critically endangered and endangered species.⁷

Furthermore, despite identifying a number of additional species that have the potential to occur, including the Yakka Skink, Red Goshawk, Australian Painted Snipe and Painted Honeyeater, Adani go no further in genuinely assessing likelihood or habitat for the species. This is manifestly inadequate for a project of this size and impact and is of particular concern to the ornithological community, as members of Protect the Bush Alliance.

Far smaller, similar projects have been declared controlled actions in the past

A comparison with previous similar development proposals in Central Queensland indicates that far smaller projects have been declared as controlled actions by the Department of Environment and Energy for likely impacts on exactly the same species which are at issue with the NGWS.

The Olive Downs Project Water Pipeline (EPBC 2017/7868) is, just like the NGWS, water supply infrastructure to supply a coal mine. The Olive Downs pipeline proposal was for a 19km pipeline, 15m in width, which encompassed a total footprint of 30 hectares. This is only a quarter the length of the NGWS pipeline and half the width. Therefore, the total footprint of the NGWS project is 16 times that of the Olive Downs pipeline.

The species that were likely to be impacted by the Olive Downs pipeline included the Ornamental Snake, the Squatter Pigeon, the Koala and the Greater Glider. All four of those species are known or likely, or have the potential, to occur in the NGWS project. Like Adani, the Olive Downs proponent claimed that the project was unlikely to have a significant impact on these species and was not a controlled action.

However, the Department of Environment and Energy declared the action was a controlled action and that it required assessment and approval under the EPBC Act before it could proceed. Listed threatened species and communities were the stated controlling provision.

Therefore, it is incumbent on the Department to act consistently, and to implement the EPBC Act without fear or favour, which would require it to declare that the NGWS project is a controlled action for listed threatened species and communities, just as they did with the Olive Downs project.

Potential impacts on the Great Barrier Reef

When approving the Carmichael Coal Mine project, the Minister found that the proponent's proposed action may have indirect impacts on the GBRWHA via impacts through watercourses due

⁶ Based on Adani's own studies see: 'Carmichael Coal Mine and Rail Project' Volume 1, Section 11 Matters of MNES, Figure 11-4 Sheets 1-2.

⁷ Department of the Environment, 'Matters of National Environmental Significance: Significant Impact Guidelines 1.1 *Environment Protection and Biodiversity Conservation Act 1999* (Cth) 9.

to reduction in downstream flow.⁸ However, the Minister did not consider the cumulative impacts of the project with the flood harvesting proposed in the NGWS project.

The significant impact guidelines for the Great Barrier Reef World Heritage Area, identify changes to natural water regimes as examples of possible significant impacts arising from actions/activities likely to occur in or adjacent to the Great Barrier Reef World Heritage. It also refers to mining operations, dams and/or other infrastructure that may have downstream impacts on the GBRWHA.

The Burdekin catchment in which the Suttor River is located is an important catchment of the Great Barrier Reef. Recent research has identified that the Burdekin River is one of just four rivers that are most likely to affect water quality into the GBR⁹. Therefore, any activity, such as flood harvesting in the catchment and associated infrastructure, should be considered likely to have a significant impact unless or until extensive hydrological assessment and modelling has been conducted to prove otherwise.

Environmental Record

In its EPBC referral for the NGWS, Adani claims that *“The Proponent (Adani Infrastructure Pty Ltd) has adhered to its regulatory responsibilities in association with its activities. The Proponent has not been the subject of any environmental legal proceedings that have resulted in fines or prosecution.”*¹⁰

However, in making this statement, the proponent is restricting itself to Adani Infrastructure Pty Ltd, and is ignoring the environmental record of other, closely associated Adani companies and the environmental history of the company’s directors. The company has an identical ownership structure to Adani Mining Pty Ltd, the proponent of the Carmichael mine. Both are ultimately owned by Indian listed company Adani Enterprises Limited.

Adani Infrastructure Pty Ltd has two directors Jeyakumar Janakaraj and Samir Sevanti Vora. Janakaraj is also the head of Adani in Australia and Chief Executive Officer of Adani Mining Pty Ltd. Vora is also the Chief Operating Officer of Adani Mining Pty Ltd.¹¹ Janakaraj was previously Director of Operations at Konkola Copper Mines (KCM) which is not an Adani Group entity. In 2010, while Janakaraj was Director of Operations, KCM caused extensive pollution of a river near its operations in Zambia. The company pleaded guilty to the offence and was fined.¹²

Adani Mining have previously been investigated by the federal Department of the Environment for potential false and misleading conduct in failing to declare the environmental history of Jeyakumar Janakaraj during the environmental assessment of the Carmichael Mine and Rail Project. Department records show that during this investigation, the details of which were obtained by FOI, in addition to a number of overseas offences, Adani reported 11 environmental incidences in Australia involving Adani Mining Pty Ltd including some resulting in penalty infringement notices and fines.¹³

⁸ Greg Hunt, ‘Statement of Reasons for approval of a proposed action under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) EPBC 2010/5736 (14 October 2015) [35].

⁹ <https://www.theguardian.com/environment/2018/jun/15/great-barrier-reef-four-rivers-are-most-responsible-for-pollution>

¹⁰ North Galilee Water Scheme (NGWS) Project, EPBC Referral document, Pdf page 48
<http://epbcnotices.environment.gov.au/entity/annotation/2633c814-db6a-e811-817f-005056ba00a7/a71d58ad-4cba-48b6-8dab-f3091fc31cd5?t=1528755820874>

¹¹ <https://www.adani.com/about-us/one-vision-one-team>

¹² [The Adani Brief - Environmental Justice Australia](#)

¹³ Department of the Environment FOI 171001 documents titled “Summary of information provided by Adani in response to a request relating to their environmental history, Annexure 5” pages 5-1 to 5-5

Adani Company Abbot Point Bulk Coal Pty Ltd have been fined for breaching their licence at the Abbot Point coal terminal by releasing coal-laden water into the ocean. Just before Cyclone Debbie in Queensland, the company was granted a special licence allowing them to pollute well above normal limits during severe weather. Yet, even with that licence, the Queensland Government found that Adani discharged wastewater that exceeded their pollution licence by 800%. Adani were fined \$12,000 for the offence¹⁴.

Adani Infrastructure Pty Ltd should be required to disclose the environmental breaches described above and any other environment incidents that have occurred across all associated entities within the Adani Group to the Federal Government.

In conclusion, the establishment of green field coal mines in the Galilee Basin and throughout Queensland are a stark contradiction to the concerns of over 67 per cent of the Australian voting public who do not support these large polluting mines which will further exacerbate climate change.

Mr. John H. Knox as Special Rapporteur reporting from the Human Rights Council, 37th Session, 5 March 2018, has written on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment.

In the six years since the Council created this mandate, it has become ever clearer that human rights and the environment are interdependent: a healthy environment is necessary for the full enjoyment of human rights, and the exercise of human rights is critical for the protection of a healthy environment. New initiatives reflecting this understanding emerge almost daily.

For example, just yesterday, the member States of the UN Economic Commission for Latin America and the Caribbean adopted the text of a new treaty on the rights to information, participation and access to justice in the environmental context. I think this is one of the most important human rights treaties and one of the most important environmental treaties of the last twenty years.

Tomorrow, here in Geneva, UN Environment will announce a new environmental rights initiative, demonstrating the importance it now gives to rights-based approaches to environmental protection.

In the Queensland context; water security for food, fibre production and for the needs of 'Nature', must remain an absolute priority. Experienced naturalists are already reporting the absence of invertebrate species as a likely contributing factor in the lack of abundance of many bird species and the absence of small vertebrate fauna across the country. Being 'in denial' of the issues associated with climate change and severe and catastrophic weather events, is no longer acceptable from any level of government.

We sincerely urge the department to declare the NGWS as a controlled action under s 67 of the *Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act)*

Yours sincerely

s47F

s47F

Chairman PTBA

s47F

Mb: s47F

¹⁴ Adani are currently appealing the fine.

22nd June 2018

Referrals Gateway
Environment Assessment Branch
Department of the Environment
GPO Box 787
Canberra ACT 2601
By email: epbc.referrals@environment.gov.au

Proposed Action: North Galilee Water Scheme (NGWS) Project
Reference Number: 2018/8191

Please accept this submission on behalf of Stop Adani Gold Coast to the EPBC referral for the North Galilee Water Scheme (**NGWS**) proposed by Adani Infrastructure Pty Ltd (2018/8191) (**Adani**).

Stop Adani Gold Coast is a group of concerned citizens who all work or study full time and take a few hours out of their weeks to campaign for the protection of our environment, a move towards a renewable energy future, no new coal and no subsidy of the fossil fuel industry. We have organised a number of actions to this effect over the past year and a half and have heard time and again from the public that these issues are paramount.

We recommend that you declare the NGWS as a controlled action under s 67 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) because it will have, or is likely to have an impact on matters of national environmental significance (**MNES**).

Adani claims in their referral documents that the NGWS project is not a controlled action. Contrary to that conclusion, it is clear that:

1. The NGWS project must be assessed under the water trigger because:
 - a. the NGWS project is designed solely to facilitate extraction of coal from the Carmichael coal mine, therefore it is an action that involves “large coal mining development” as defined under s 24D of the EPBC Act; and
 - b. there is a real chance or possibility that it will have a significant impact on water resources in the Belyando Suttor sub-catchment.
2. The NGWS is also likely to have a significant impact on a number of threatened species and communities, including the Black Throated Finch, Ornamental Snake and the Koala.
3. Projects affecting the same threatened species with a far smaller footprint have been declared as controlled actions in the past by the Department of Environment and Energy.

4. The potential impact of the Suttor River water take and the associated infrastructure on the Great Barrier Reef World Heritage Area has not been considered by the proponent.

Recommendations

We recommend that you:

1. Declare the NGWS project a controlled action with controlling provisions of:
 - Listed threatened species and communities
 - A water resource in relation to coal seam gas development and large coal mining development
 - World Heritage properties
 - Great Barrier Reef Marine Park
2. Require the full extent and impacts of the project on MNES to be properly assessed under the EPBC Act via a full Environmental Impact Statement.
3. Obtain expert advice on the water impacts of the project from the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (**IESC**).
4. Require the proponent to fully disclose the environmental compliance record of all associated companies both here and overseas in order for the public to properly understand the compliance history of the Adani group.
5. Recognise that the action is part of a larger action proposing to take far greater volumes of surface water than identified in the referral, by:
 - Exercising your discretion under s74A of the EPBC Act to reject the referral, or
 - Utilising your powers under s76 (2) of the EPBC Act to require Adani to provide further information about the full extent of impacts to surface water, including the proposal to supply other coal mines from the NGWS and other existing water permits held by Adani for construction purposes in the catchment.

Project Summary

The NGWS project is located approximately 160km north-west of Clermont in Central Queensland.

In times of flood, Adani plan to harvest water from the Suttor River downstream of its confluence with the Belyando River. The water will then be stored in a nearby upgraded dam then piped to the mine.

The project consists of:

- a 10 GL (billion litre) dam (the upgrade of a 2GL dam is proposed)
- pumping facilities and a 4km pipe linking the harvester to the dam
- a 110km pipeline with pumping stations connecting the dam to the proposed Carmichael coal mine.

Adani provide a total disturbance footprint for the NGWS of 508.98 hectares. Adani estimate that construction of the NGWS will run from January 2019 to March 2020.

Adani holds a water licence entitling it to take 12.5 billion litres a year from the Suttor River at the location of the proposed water harvester.¹ This was obtained from the Queensland Government in March 2017 with the water being allocated from a State strategic reserve.

Water Resources

Section 24D of the EPBC Act provides as follows:

“(1) A constitutional corporation, the Commonwealth or a Commonwealth agency must not take an action if:

(a) the action involves:

- (i) coal seam gas development; or*
- (ii) large coal mining development; and*

(b) the action:

- (i) has or will have a significant impact on a water resource; or*
- (ii) is likely to have a significant impact on a water resource.”*

The term “large coal mining development” is defined in section 528 as:

“any coal mining activity that has, or is likely to have, a significant impact on water resources (including any impacts of associated salt production and/or salinity):

- (a) in its own right; or*
- (b) when considered with other developments, whether past, present or reasonably foreseeable developments”.*

In their referral, Adani state that the NGWS project does not constitute large coal mining development for the purposes of the EPBCA, and therefore that it is not a controlled action for that provision. In an attachment to the referral, Adani state that ‘*Activities relevant to the water trigger are those that form part of the process of extracting coal and not merely be associated with it*’.

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⁴ Waratah Coal (2018) Alpha North Project, Initial Advice Statement, section 3.3.7 Water Supply, page 3-30

⁵ It is unclear whether this permit has been renewed since its initial expiry in January 2018.

The DoEE protected matters tool identifies one Listed Threatened Ecological Community and 13 Listed Threatened Species as being MNES that are likely to occur within the impact area of the NGWSP. The Matters of NES include:

- Brigalow (Acacia harpophylla dominant and codominant) (Endangered);
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- Waxy Cabbage Palm (Vulnerable);
- Yakka Skink (Vulnerable);
- Ornamental Snake (Vulnerable);
- Curlew Sandpiper (Critically Endangered).

The weaknesses of the surveys described above are particularly inadequate in light of Adani's own analysis that there is important or critical habitat present for at least 3 species – Ornamental Snake, Black-throated Finch and Koala.

Adani admit that there is 137.43 hectares of habitat suitable for the Ornamental Snake within the footprint of the project, including important habitat for the species, and that the habitat *'is almost certain to be used for foraging and breeding given the species occurs there'*. However, despite that evidence which clearly triggers the requirements for significant impact contained in the relevant Significant Impact Guidelines, they claim that there will not be a significant impact.

Similarly, Adani themselves acknowledge that there is important habitat for the Black-throated Finch and the Koala within the project footprint, but again claim that there will not be a significant impact. We contend that the conclusions reached by Adani for these two species is also inconsistent with Significant Impact Guidelines.

In relation to the Black Throated Finch, we note that Stage B of the pipeline crosses potential Black-Throated Finch Habitat in a number of locations before heading north at Mistake Creek.⁶ Construction of the pipeline will require clearing of a corridor prior to construction. The proposed route of the NGWS may require clearing of Black Throated Finch

⁶ Based on Adani's own studies see: 'Carmichael Coal Mine and Rail Project' Volume 1, Section 11 Matters of MNES, Figure 11-4 Sheets 1-2.

habitat which will have a significant impact on the species as set out in the criteria in the EPBC Significant Impact Guidelines for critically endangered and endangered species.⁷

Furthermore, despite identifying a number of additional species that have the potential to occur, including the Yakka Skink, Red Goshawk, Australian Painted Snipe and Painted Honeyeater, Adani go no further in genuinely assessing likelihood or habitat for the species. This is manifestly inadequate for a project of this size and impact.

Far smaller, similar projects have been declared controlled actions in the past

A comparison with previous similar development proposals in Central Queensland indicates that far smaller projects have been declared as controlled actions by the Department of Environment and Energy for likely impacts on exactly the same species which are at issue with the NGWS.

The Olive Downs Project Water Pipeline (EPBC 2017/7868) is, just like the NGWS, water supply infrastructure to supply a coal mine. The Olive Downs pipeline proposal was for a 19km pipeline, 15m in width, which encompassed a total footprint of 30 hectares. This is only a quarter the length of the NGWS pipeline and half the width. Therefore, the total footprint of the NGWS project is 16 times that of the Olive Downs pipeline.

The species that were likely to be impacted by the Olive Downs pipeline included the Ornamental Snake, the Squatter Pigeon, the Koala and the Greater Glider. All four of those species are known or likely, or have the potential, to occur in the NGWS project. Like Adani, the Olive Downs proponent claimed that the project was unlikely to have a significant impact on these species and was not a controlled action.

However, the Department of Environment and Energy declared the action was a controlled action and that it required assessment and approval under the EPBC Act before it could proceed. Listed threatened species and communities were the stated controlling provision.

Therefore, it is incumbent on the Department to act consistently, and to implement the EPBC Act without fear or favour, which would require it to declare that the NGWS project is a controlled action for listed threatened species and communities, just as they did with the Olive Downs project.

Potential impacts on the Great Barrier Reef

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consider the cumulative impacts of the project with the flood harvesting proposed in the NGWS project.

The significant impact guidelines for the Great Barrier Reef World Heritage Area, identify changes to natural water regimes as examples of possible significant impacts arising from actions/activities likely to occur in or adjacent to the Great Barrier Reef World Heritage. It also refers to mining operations, dams and/or other infrastructure that may have downstream impacts on the GBRWHA.

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However, in making this statement, the proponent is restricting itself to Adani Infrastructure Pty Ltd, and is ignoring the environmental record of other, closely associated Adani companies and the environmental history of the company’s directors. The company has an identical ownership structure to Adani Mining Pty Ltd, the proponent of the Carmichael mine. Both are ultimately owned by Indian listed company Adani Enterprises Limited.

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Adani Infrastructure Pty Ltd should be required to disclose the environmental breaches described above and any other environment incidents that have occurred across all associated entities within the Adani Group to the Federal Government.

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25 June 2018

Stop Adani Townsville
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Referrals Gateway
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Canberra ACT 2601
By email: epbc.referrals@environment.gov.au

Proposed Action: North Galilee Water Scheme (NGWS) Project
Reference Number: 2018/8191

Please accept this submission on behalf of the **Stop Adani Townsville Group** to the EPBC referral for the North Galilee Water Scheme (**NGWS**) proposed by Adani Infrastructure Pty Ltd (2018/8191) (**Adani**).

The Stop Adani Townsville Group was established in 2017 and is part of the national Stop Adani movement. The group is made up of community-based volunteers who take action to prevent Adani's proposed environmentally harmful Carmichael Coal Mine from proceeding. Coal is not our future. Renewable energy is. The group is entirely self-funded and aims to protect the Great Barrier Reef from the devastating effects of climate change. There are currently over 300 Townsville based people in the Stop Adani Townsville Group.

The Stop Adani Townsville Group has organised community rallies and protests, visits to politicians, submissions, market stalls and petitions and there is overwhelming support in the community to not open the Galilee Basin up to the devastating effects of coal mining due to the impact this will have on water, threatened species, the Great Barrier Reef and climate change.

We recommend that you declare the NGWS as a controlled action under s 67 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) because it will have, or is likely to have an impact on matters of national environmental significance (**MNES**).

Adani claims in their referral documents that the NGWS project is not a controlled action. Contrary to that conclusion, it is clear that:

1. The NGWS project must be assessed under the water trigger because:
 - a. the NGWS project is designed solely to facilitate extraction of coal from the Carmichael coal mine, therefore it is an action that involves "large coal mining development" as defined under s 24D of the EPBC Act; and

- b. there is a real chance or possibility that it will have a significant impact on water resources in the Belyando Suttor sub-catchment.
- 2. The NGWS is also likely to have a significant impact on a number of threatened species and communities, including the Black Throated Finch, Ornamental Snake and the Koala.
- 3. Projects affecting the same threatened species with a far smaller footprint have been declared as controlled actions in the past by the Department of Environment and Energy.
- 4. The potential impact of the Suttor River water take and the associated infrastructure on the Great Barrier Reef World Heritage Area has not been considered by the proponent.

Recommendations

We recommend that you:

1. Declare the NGWS project a controlled action with controlling provisions of:
 - Listed threatened species and communities
 - A water resource in relation to coal seam gas development and large coal mining development
 - World Heritage properties
 - Great Barrier Reef Marine Park
2. Require the full extent and impacts of the project on MNES to be properly assessed under the EPBC Act via a full Environmental Impact Statement.
3. Obtain expert advice on the water impacts of the project from the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (**IESC**).
4. Require the proponent to fully disclose the environmental compliance record of all associated companies both here and overseas in order for the public to properly understand the compliance history of the Adani group.
5. Recognise that the action is part of a larger action proposing to take far greater volumes of surface water than identified in the referral, by:
 - Exercising your discretion under s74A of the EPBC Act to reject the referral, or
 - Utilising your powers under s76 (2) of the EPBC Act to require Adani to provide further information about the full extent of impacts to surface water, including the proposal to supply other coal mines from the NGWS and other existing water permits held by Adani for construction purposes in the catchment.

Project Summary

The NGWS project is located approximately 160km north-west of Clermont in Central Queensland.

In times of flood, Adani plan to harvest water from the Suttor River downstream of its confluence with the Belyando River. The water will then be stored in a nearby upgraded dam then piped to the mine.

The project consists of:

- flood water harvesting infrastructure on the Suttor River
- a 10 GL (billion litre) dam (the upgrade of a 2GL dam is proposed)
- pumping facilities and a 4km pipe linking the harvester to the dam
- a 110km pipeline with pumping stations connecting the dam to the proposed Carmichael coal mine.

Adani provide a total disturbance footprint for the NGWS of 508.98 hectares. Adani estimate that construction of the NGWS will run from January 2019 to March 2020.

Adani holds a water licence entitling it to take 12.5 billion litres a year from the Suttor River at the location of the proposed water harvester.¹ This was obtained from the Queensland Government in March 2017 with the water being allocated from a State strategic reserve.

Water Resources

Section 24D of the EPBC Act provides as follows:

“(1) A constitutional corporation, the Commonwealth or a Commonwealth agency must not take an action if:

(a) the action involves:

- (i) coal seam gas development; or*
- (ii) large coal mining development; and*

(b) the action:

- (i) has or will have a significant impact on a water resource; or*
- (ii) is likely to have a significant impact on a water resource.”*

The term “large coal mining development” is defined in section 528 as:

“any coal mining activity that has, or is likely to have, a significant impact on water resources (including any impacts of associated salt production and/or salinity):

- (a) in its own right; or*
- (b) when considered with other developments, whether past, present or reasonably foreseeable developments”.*

In their referral, Adani state that the NGWS project does not constitute large coal mining development for the purposes of the EPBCA, and therefore that it is not a controlled action for that provision. In an attachment to the referral, Adani state that ‘*Activities relevant to the water trigger are those that form part of the process of extracting coal and not merely be associated with it*’.

However, the NGWS most certainly does constitute coal mining activity for the purposes of the EPBC Act and as such, it should be considered a controlling provision for the action. We set out below the evidence as to why the NGWS is large coal mining development for the purposes of s 24D of the EPBC Act.

The Suttor River water take and infrastructure has not been assessed previously

In the original Environmental Impact Statement (EIS) documents for the Carmichael Coal Mine, Adani stated that the expected average water demand of the Carmichael mine would be in the order of 12 billion litres (12GL) per annum. This represents the additional water that the project would require on top of that resulting from operational activities such as pit dewatering and on-site rainwater management.

In the original EIS (2012), Adani claimed that this additional water would be sourced from on-site sources and from bores to be drilled along nearby creeks. By the time of the SEIS (late 2013), Adani had modified its plans to include a flood harvesting scheme near to the

¹ Water Act 2000, Water Licence Reference 617268, Expiry 30/06/2077, issued to Adani Infrastructure Pty Ltd

mine site on the Belyando River with a capacity equal to the mine's total additional water needs.²

It was only after the SEIS that Adani moved towards supplying the needs of the mine from flood harvesting of the Suttor River. So, neither the proposed take of water from the Suttor River, nor the associated infrastructure, was considered or assessed under the original EIS for the project.

The NGWS has been formally recognised as part of the Adani Combined Project

The NGWS has been explicitly recognised as being part of the Adani Combined Project by the Queensland Government. In October 2016, the Queensland Minister for State Development, Planning and Infrastructure declared the Adani Combined Project to be both 'critical infrastructure' and a 'prescribed project' under the *State Development and Public Works Organisation Act 1971* (Qld). The NGWS was listed as comprising a key component of that project.

The volume of water take is likely to constitute a significant impact

The take from the Suttor River of up to 12.5GL per year for the NGWS project is likely to constitute a significant impact on water resources because it amounts to more than 50% of the total strategic reserve for the relevant sub-catchment under the *Queensland Water Plan (Burdekin Basin) 2007*.

Water take and infrastructure does constitute a 'coal mining activity'

The term 'coal mining activity' in the definition of 'large coal mining development' includes activities such as water extraction that form part of a large scale development for the mining of coal. The term is not restricted to 'coal mining' only, as appears to have been concluded by Adani.

When the 'water trigger' was introduced by way of the *Environmental Protection and Biodiversity Conservation Amendment Act 2013* (Cth), the then Minister for Sustainability, Environment, Water, Population and Communities in his second reading speech referred, amongst other things, to the "*irreversible depletion.....of our surface and groundwater resources*".

The relevant *Bills Digest*, which was laid before Parliament before the Bill was enacted, considered the impacts of large scale coal mining on water resources. These included the use of water 'for processing and dust suppression and other mining activities' as a necessity of coal production. In considering a particular coal mine, the *Digest* describes operational water use of 21GL per year from surface and sub-surface sources as 'an appreciable amount' compared to a total annual extraction of around 550GL.

Therefore, it is clear that the correct statutory construction of the EPBC Act is that the extraction of water for use in dust suppression and processing does constitute a coal mining activity, especially when read in the context of the objects of the legislation. Indeed, the

² Carmichael Coal Mine and Rail Project SEIS (Nov 2013), Updated Mine Project Description, Appendix B, P. 96-97

reference to the water supply required to operate the mine in the original EIS for the Carmichael coal mine supports that conclusion – it is an integral part of the coal mining activity and without it, the mine cannot operate.

We note that the relevant [Significant Impact Guidelines 1.3](#) (Coal Seam Gas and Large Coal Mining Developments - impacts on water resources) are quoted by Adani as supporting their argument that water extraction and infrastructure does not constitute a coal mining activity. We note that the non-statutory guidelines do not supplant the law. Most notably, the guideline is not a relevant consideration for the Minister in deciding whether the NGWS project is a controlled action and which provisions are controlling provisions under s 75(1) EPBC Act.

The Guidelines state that extraction of CSG or coal must form part of the activity and not merely be associated with it, and specify that *“where referred along with new or modified extraction of CSG or coal, the following activities will form part of the extractive process: water supply for use in the extraction of CSG or coal.....However, these activities will not independently be CSG or coal mining development where there is no new or modified extraction of CSG or coal”*.

However, the NGWS is part of the activity of the Carmichael coal mine and the mine cannot operate without it. The need to supply the water was identified in the original coal mine proposal, and therefore it undoubtedly forms part of the activity and is not ‘merely associated with it’. This conclusion is supported by the fact that the NGWS has been formally identified as part of the Adani Combined Project by the Queensland Government.

The NGWS proposes to provide water to other mines currently under EPBC consideration

Adani notes that the NGWS could be used to supply water to other proposed coal mines in the surrounding area, but does not specify what volume of water will be supplied or how this will relate to 12.5GL they have earmarked as being needed for the Carmichael Coal Mine. It is notable that the water licence provided by the Queensland Government to Adani for the Suttor River take authorises take only for ‘*water supply for the Carmichael Coal Mine and Rail Project*’.

The company names the China Stone Coal Project as one of the mines it could supply. The Environmental Impact Statement for the China Stone Project states that the mine will need to source a significant portion of its water supply from off-site, especially in dry years. The project proponent, Macmines Austasia, plans to secure an external supply of up to 12.5 billion litres of water per annum.³ In its recent EPBC referral for the Alpha North Project, Waratah Coal notes that it too is planning to source water “through the NGWS being developed by Adani”.⁴

On the basis of this information we consider that this NGWS proposal is actually part of a much larger action. In addition to the additional water take mooted in the NGWS referral

³ Page 13-25, Surface Water, Section 13, Draft Environmental Impact Statement, Project China Stone

⁴ Waratah Coal (2018) Alpha North Project, Initial Advice Statement, section 3.3.7 Water Supply, page 3-30

for other mines, Adani has already obtained water permits for additional water take that is not mentioned in the referral. Water Permit 617345 allows the take of 250ML from the Belyando River for mine construction and Water Permit 614017 allow the take of 8050ML from Mistake Creek for mine construction⁵.

We believe that referring the NGWS without providing full details of the entire water take is contrary to the objects of the EPBC Act because it will allow the proponent to avoid a full impact assessment of the proposed action on MNES. We request that you exercise your discretion under s 74A EPBC Act to reject the referral or request Adani to provide further information about the extent of impacts to surface water resources that are likely to result from supplying additional billions of litres of fresh water to mines in the area under s 76(2) EPBC Act.

Threatened Species

Threatened species surveys inadequate

Threatened species surveys conducted for the project by Adani are inadequate. They appear to have conducted only 6 days of site inspections – one three day period in December 2016 and one three day period in May 2-15. This is vastly inadequate both in duration and in seasonality, particularly for a project that has a 500ha disturbance and proposes over 110km of pipeline installation.

There is very little information provided as to the nature or intensity of the surveys that were conducted. However, in Attachment D of the referral Adani refer to site assessments involving apparently visual '*assessment of fauna habitat values*'. In other parts of the referral, Adani make some reference to surveys for the Koala, Ornamental Snake and Black Throated Finch, but it is not clear if this is simply the 'site assessments' referred to in Attachment D. There is no information provided on what survey techniques were used for each species and where they were applied.

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s22

From: s47F [redacted]@bigpond.com>
Sent: Friday, 22 June 2018 12:28 PM
To: EPBC Referrals
Subject: (NGWS) Project

22th June 2018

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By email: epbc.referrals@environment.gov.au

Proposed Action: North Galilee Water Scheme (NGWS) Project

Reference Number: 2018/8191

Please accept this submission on behalf of the one hundred & sixty [160] members of Sunshine coast climate action now [SCCAN] www.sccan.net to the EPBC referral for the North Galilee Water Scheme (NGWS) proposed by Adani Infrastructure Pty Ltd (2018/8191) (**Adani**).

We recommend that you declare the NGWS as a controlled action under s 67 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) because it will have, or is likely to have an impact on matters of national environmental significance (**MNES**).

Adani claims in their referral documents that the NGWS project is not a controlled action. Contrary to that conclusion, it is clear that:

1. The NGWS project must be assessed under the water trigger because:
 - a. the NGWS project is designed solely to facilitate extraction of coal from the Carmichael coal mine, therefore it is an action that involves “large coal mining development” as defined under s 24D of the EPBC Act; and
 - b. there is a real chance or possibility that it will have a significant impact on water resources in the Belyando Suttor sub-catchment.
2. The NGWS is also likely to have a significant impact on a number of threatened species and communities, including the Black Throated Finch, Ornamental Snake and the Koala.
3. Projects affecting the same threatened species with a far smaller footprint have been declared as controlled actions in the past by the Department of Environment and Energy.
4. The potential impact of the Suttor River water take and the associated infrastructure on the Great Barrier Reef World Heritage Area has not been considered by the proponent.

Recommendations

We recommend that you:

1. Declare the NGWS project a controlled action with controlling provisions of:
 - Listed threatened species and communities
 - A water resource in relation to coal seam gas development and large coal mining development
 - World Heritage properties
 - Great Barrier Reef Marine Park
2. Require the full extent and impacts of the project on MNES to be properly assessed under the EPBC Act via a full Environmental Impact Statement.
3. Obtain expert advice on the water impacts of the project from the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (**IESC**).
4. Require the proponent to fully disclose the environmental compliance record of all associated companies both here and overseas in order for the public to properly understand the compliance history of the Adani group.
5. Recognise that the action is part of a larger action proposing to take far greater volumes of surface water than identified in the referral, by:
 - Exercising your discretion under s74A of the EPBC Act to reject the referral, or
 - Utilising your powers under s76 (2) of the EPBC Act to require Adani to provide further information about the full extent of impacts to surface water, including the proposal to supply other coal mines from the NGWS and other existing water permits held by Adani for construction purposes in the catchment.

Project Summary

The NGWS project is located approximately 160km north-west of Clermont in Central Queensland.

In times of flood, Adani plan to harvest water from the Suttor River downstream of its confluence with the Belyando River. The water will then be stored in a nearby upgraded dam then piped to the mine.

The project consists of:

- flood water harvesting infrastructure on the Suttor River
- a 10 GL (billion litre) dam (the upgrade of a 2GL dam is proposed)
- pumping facilities and a 4km pipe linking the harvester to the dam
- a 110km pipeline with pumping stations connecting the dam to the proposed Carmichael coal mine.

Adani provide a total disturbance footprint for the NGWS of 508.98 hectares. Adani estimate that construction of the NGWS will run from January 2019 to March 2020.

Adani holds a water licence entitling it to take 12.5 billion litres a year from the Suttor River at the location of the proposed water harvester.^{i[1]} This was obtained from the Queensland Government in March 2017 with the water being allocated from a State strategic reserve.

Water Resources

Section 24D of the EPBC Act provides as follows:

“(1) A constitutional corporation, the Commonwealth or a Commonwealth agency must not take an action if:

(a) the action involves:

(i) coal seam gas development; or

(ii) large coal mining development; and

(b) the action:

(i) has or will have a significant impact on a water resource; or

(ii) is likely to have a significant impact on a water resource.”

The term “large coal mining development” is defined in section 528 as:

“any coal mining activity that has, or is likely to have, a significant impact on water resources (including any impacts of associated salt production and/or salinity):

(a) in its own right; or

(b) when considered with other developments, whether past, present or reasonably foreseeable developments”.

In their referral, Adani state that the NGWS project does not constitute large coal mining development for the purposes of the EPBCA, and therefore that it is not a controlled action for that provision. In an attachment to the referral, Adani state that ‘*Activities relevant to the water trigger are those that form part of the process of extracting coal and not merely be associated with it*’.

However, the NGWS most certainly does constitute coal mining activity for the purposes of the EPBC Act and as such, it should be considered a controlling provision for the action. We set out below the evidence as to why the NGWS is large coal mining development for the purposes of s 24D of the EPBC Act.

The Suttor River water take and infrastructure has not been assessed previously

In the original Environmental Impact Statement (EIS) documents for the Carmichael Coal Mine, Adani stated that the expected average water demand of the Carmichael mine would be in the order of 12 billion litres (12GL) per annum. This represents the additional water that the project would require on top of that resulting from operational activities such as pit dewatering and on-site rainwater management.

In the original EIS (2012), Adani claimed that this additional water would be sourced from on-site sources and from bores to be drilled along nearby creeks. By the time of the SEIS (late 2013), Adani had modified its plans to include a flood harvesting scheme near to the mine site on the Belyando River with a capacity equal to the mine’s total additional water needs.^{ii[2]}

It was only after the SEIS that Adani moved towards supplying the needs of the mine from flood harvesting of the Suttor River. So, neither the proposed take of water from the Suttor River, nor the associated infrastructure, was considered or assessed under the original EIS for the project.

The NGWS has been formally recognised as part of the Adani Combined Project

The NGWS has been explicitly recognised as being part of the Adani Combined Project by the Queensland Government. In October 2016, the Queensland Minister for State Development, Planning and Infrastructure declared the Adani Combined Project to be both ‘critical infrastructure’ and a ‘prescribed project’ under the *State Development and Public Works Organisation Act 1971* (Qld). The NGWS was listed as comprising a key component of that project.

The volume of water take is likely to constitute a significant impact

The take from the Suttor River of up to 12.5GL per year for the NGWS project is likely to constitute a significant impact on water resources because it amounts to more than 50% of the total strategic reserve for the relevant sub-catchment under the *Queensland Water Plan (Burdekin Basin) 2007*.

Water take and infrastructure does constitute a ‘coal mining activity’

The term ‘coal mining activity’ in the definition of ‘large coal mining development’ includes activities such as water extraction that form part of a large scale development for the mining of coal. The term is not restricted to ‘coal mining’ only, as appears to have been concluded by Adani.

When the ‘water trigger’ was introduced by way of the *Environmental Protection and Biodiversity Conservation Amendment Act 2013* (Cth), the then Minister for Sustainability, Environment, Water, Population and Communities in his second reading speech referred, amongst other things, to the “*irreversible depletion.....of our surface and groundwater resources*”.

The relevant *Bills Digest*, which was laid before Parliament before the Bill was enacted, considered the impacts of large scale coal mining on water resources. These included the use of water ‘for processing and

dust suppression and other mining activities’ as a necessity of coal production. In considering a particular coal mine, the *Digest* describes operational water use of 21GL per year from surface and sub-surface sources as ‘an appreciable amount’ compared to a total annual extraction of around 550GL.

Therefore, it is clear that the correct statutory construction of the EPBC Act is that the extraction of water for use in dust suppression and processing does constitute a coal mining activity, especially when read in the context of the objects of the legislation. Indeed, the reference to the water supply required to operate the mine in the original EIS for the Carmichael coal mine supports that conclusion – it is an integral part of the coal mining activity and without it, the mine cannot operate.

We note that the relevant [Significant Impact Guidelines 1.3](#) (Coal Seam Gas and Large Coal Mining Developments - impacts on water resources) are quoted by Adani as supporting their argument that water extraction and infrastructure does not constitute a coal mining activity. We note that the non-statutory guidelines do not supplant the law. Most notably, the guideline is not a relevant consideration for the Minister in deciding whether the NGWS project is a controlled action and which provisions are controlling provisions under s 75(1) EPBC Act.

The Guidelines state that extraction of CSG or coal must form part of the activity and not merely be associated with it, and specify that “*where referred along with new or modified extraction of CSG or coal, the following activities will form part of the extractive process: water supply for use in the extraction of CSG or coal.....However, these activities will not independently be CSG or coal mining development where there is no new or modified extraction of CSG or coal*”.

However, the NGWS is part of the activity of the Carmichael coal mine and the mine cannot operate without it. The need to supply the water was identified in the original coal mine proposal, and therefore it undoubtedly forms part of the activity and is not ‘merely associated with it’. This conclusion is supported by the fact that the NGWS has been formally identified as part of the Adani Combined Project by the Queensland Government.

The NGWS proposes to provide water to other mines currently under EPBC consideration

Adani notes that the NGWS could be used to supply water to other proposed coal mines in the surrounding area, but does not specify what volume of water will be supplied or how this will relate to 12.5GL they have earmarked as being needed for the Carmichael Coal Mine. It is notable that the water licence provided by the Queensland Government to Adani for the Suttor River take authorises take only for ‘*water supply for the Carmichael Coal Mine and Rail Project*’.

The company names the China Stone Coal Project as one of the mines it could supply. The Environmental Impact Statement for the China Stone Project states that the mine will need to source a significant portion of its water supply from off-site, especially in dry years. The project proponent, Macmines Austasia, plans to secure an external supply of up to 12.5 billion litres of water per annum.^{iii[3]} In its recent EPBC referral for the Alpha North Project, Waratah Coal notes that it too is planning to source water “through the NGWS being developed by Adani”.^{iv[4]}

On the basis of this information we consider that this NGWS proposal is actually part of a much larger action. In addition to the additional water take mooted in the NGWS referral for other mines, Adani has already obtained water permits for additional water take that is not mentioned in the referral. Water Permit 617345 allows the take of 250ML from the Belyando River for mine construction and Water Permit 614017 allow the take of 8050ML from Mistake Creek for mine construction^{v[5]}.

We believe that referring the NGWS without providing full details of the entire water take is contrary to the objects of the EPBC Act because it will allow the proponent to avoid a full impact assessment of the proposed action on MNES. We request that you exercise your discretion under s 74A EPBC Act to reject the referral or request Adani to provide further information about the extent of impacts to surface water resources that are likely to result from supplying additional billions of litres of fresh water to mines in the area under s 76(2) EPBC Act.

Threatened Species

Threatened species surveys inadequate

Threatened species surveys conducted for the project by Adani are inadequate. They appear to have conducted only 6 days of site inspections – one three day period in December 2016 and one three day period in May 2-15. This is vastly inadequate both in duration and in seasonality, particularly for a project that has a 500ha disturbance and proposes over 110km of pipeline installation.

There is very little information provided as to the nature or intensity of the surveys that were conducted. However, in Attachment D of the referral Adani refer to site assessments involving apparently visual ‘assessment of fauna habitat values’. In other parts of the referral, Adani make some reference to surveys for the Koala, Ornamental Snake and Black Throated Finch, but it is not clear if this is simply the ‘site assessments’ referred to in Attachment D. There is no information provided on what survey techniques were used for each species and where they were applied.

In light of the information that is available, it would seem that there were no systematic surveys for flora and fauna, and it seems unlikely that there were any extensive targeted surveys for relevant species using appropriate survey techniques.

Impacts on important habitat for threatened species by Adani’s own admission

The DoEE protected matters tool identifies one Listed Threatened Ecological Community and 13 Listed Threatened Species as being MNES that are likely to occur within the impact area of the NGWSP. The Matters of NES include:

- Brigalow (Acacia harpophylla dominant and codominant) (Endangered);
- Red Goshawk (Vulnerable);
- Squatter Pigeon (southern) (Vulnerable);
- Painted Honeyeater (Vulnerable);
- Star Finch (eastern), Star Finch (southern) (Endangered);
- Southern Black-throated Finch (Endangered);
- Australian Painted Snipe (Endangered);
- Masked Owl (northern) (Vulnerable);
- Northern Quoll (Endangered);
- Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) (Vulnerable);
- Waxy Cabbage Palm (Vulnerable);
- Yakka Skink (Vulnerable);
- Ornamental Snake (Vulnerable);
- Curlew Sandpiper (Critically Endangered).

The weaknesses of the surveys described above are particularly inadequate in light of Adani’s own analysis that there is important or critical habitat present for at least 3 species – Ornamental Snake, Black-throated Finch and Koala.

Adani admit that there is 137.43 hectares of habitat suitable for the Ornamental Snake within the footprint of the project, including important habitat for the species, and that the habitat ‘*is almost certain to be used for foraging and breeding given the species occurs there*’. However, despite that evidence which clearly triggers the requirements for significant impact contained in the relevant Significant Impact Guidelines, they claim that there will not be a significant impact.

Similarly, Adani themselves acknowledge that there is important habitat for the Black-throated Finch and the Koala within the project footprint, but again claim that there will not be a significant impact. We contend that the conclusions reached by Adani for these two species is also inconsistent with Significant Impact Guidelines.

In relation to the Black Throated Finch, we note that Stage B of the pipeline crosses potential Black-Throated Finch Habitat in a number of locations before heading north at Mistake Creek.^{vi[6]} Construction of the pipeline will require clearing of a corridor prior to construction. The proposed route of the NGWS may require clearing of Black Throated Finch habitat which will have a significant impact on the species as set out in the criteria in the EPBC Significant Impact Guidelines for critically endangered and endangered species.^{viii[7]}

Furthermore, despite identifying a number of additional species that have the potential to occur, including the Yakka Skink, Red Goshawk, Australian Painted Snipe and Painted Honeyeater, Adani go no further in genuinely assessing likelihood or habitat for the species. This is manifestly inadequate for a project of this size and impact.

Far smaller, similar projects have been declared controlled actions in the past

A comparison with previous similar development proposals in Central Queensland indicates that far smaller projects have been declared as controlled actions by the Department of Environment and Energy for likely impacts on exactly the same species which are at issue with the NGWS.

The Olive Downs Project Water Pipeline (EPBC 2017/7868) is, just like the NGWS, water supply infrastructure to supply a coal mine. The Olive Downs pipeline proposal was for a 19km pipeline, 15m in width, which encompassed a total footprint of 30 hectares. This is only a quarter the length of the NGWS pipeline and half the width. Therefore, the total footprint of the NGWS project is 16 times that of the Olive Downs pipeline.

The species that were likely to be impacted by the Olive Downs pipeline included the Ornamental Snake, the Squatter Pigeon, the Koala and the Greater Glider. All four of those species are known or likely, or have the potential, to occur in the NGWS project. Like Adani, the Olive Downs proponent claimed that the project was unlikely to have a significant impact on these species and was not a controlled action.

However, the Department of Environment and Energy declared the action was a controlled action and that it required assessment and approval under the EPBC Act before it could proceed. Listed threatened species and communities were the stated controlling provision.

Therefore, it is incumbent on the Department to act consistently, and to implement the EPBC Act without fear or favour, which would require it to declare that the NGWS project is a controlled action for listed threatened species and communities, just as they did with the Olive Downs project.

Potential impacts on the Great Barrier Reef

When approving the Carmichael Coal Mine project, the Minister found that the proponent's proposed action may have indirect impacts on the GBRWHA via impacts through watercourses due to reduction in downstream flow.^{viii[8]} However, the Minister did not consider the cumulative impacts of the project with the flood harvesting proposed in the NGWS project.

The significant impact guidelines for the Great Barrier Reef World Heritage Area, identify changes to natural water regimes as examples of possible significant impacts arising from actions/activities likely to occur in or adjacent to the Great Barrier Reef World Heritage. It also refers to mining operations, dams and/or other infrastructure that may have downstream impacts on the GBRWHA.

The Burdekin catchment in which the Suttor River is located is an important catchment of the Great Barrier Reef. Recent research has identified that the Burdekin River is one of just four rivers that are most likely to affect water quality into the GBR^{ix[9]}. Therefore, any activity, such as flood harvesting in the catchment and associated infrastructure, should be considered likely to have a significant impact unless or until extensive hydrological assessment and modelling has been conducted to prove otherwise.

Environmental Record

In its EPBC referral for the NGWS, Adani claims that *“The Proponent (Adani Infrastructure Pty Ltd) has adhered to its regulatory responsibilities in association with its activities. The Proponent has not been the subject of any environmental legal proceedings that have resulted in fines or prosecution.”*^{x[10]}

However, in making this statement, the proponent is restricting itself to Adani Infrastructure Pty Ltd, and is ignoring the environmental record of other, closely associated Adani companies and the environmental history of the company's directors. The company has an identical ownership structure to Adani Mining Pty Ltd, the proponent of the Carmichael mine. Both are ultimately owned by Indian listed company Adani Enterprises Limited.

Adani Infrastructure Pty Ltd has two directors Jeyakumar Janakaraj and Samir Sevanti Vora. Janakaraj is also the head of Adani in Australia and Chief Executive Officer of Adani Mining Pty Ltd. Vora is also the

Chief Operating Officer of Adani Mining Pty Ltd.^{xi[11]} Janakaraj was previously Director of Operations at Konkola Copper Mines

(KCM) which is not an Adani Group entity. In 2010, while Janakaraj was Director of Operations, KCM caused extensive pollution of a river near its operations in Zambia

. The company pleaded guilty to the offence and was fined.^{xii[12]}

Adani Mining have previously been investigated by the federal Department of the Environment for potential false and misleading conduct in failing to declare the environmental history of Jeyakumar Janakaraj during the environmental assessment of the Carmichael Mine and Rail Project. Department records show that during this investigation, the details of which were obtained by FOI, in addition to a number of overseas offences, Adani reported 11 environmental incidences in Australia involving Adani Mining Pty Ltd including some resulting in penalty infringement notices and fines.^{xiii[13]}

Adani company Abbot Point Bulk Coal Pty Ltd have been fined for breaching their licence at the Abbot Point coal terminal by releasing coal-laden water into the ocean. Just before Cyclone Debbie in Queensland, the company was granted a special licence allowing them to pollute well above normal limits during severe weather. Yet, even with that licence, the Queensland Government found that Adani discharged wastewater that exceeded their pollution licence by 800%. Adani were fined \$12,000 for the offence^{xiv[14]}.

Adani Infrastructure Pty Ltd should be required to disclose the environmental breaches described above and any other environment incidents that have occurred across all associated entities within the Adani Group to the Federal Government.

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Convenor
SCCAN

^{i[1]} Water Act 2000, Water Licence Reference 617268, Expiry 30/06/2077, issued to Adani Infrastructure Pty Ltd

^{ii[2]} Carmichael Coal Mine and Rail Project SEIS (Nov 2013), Updated Mine Project Description, Appendix B, P. 96-97

^{iii[3]} Page 13-25, Surface Water, Section 13, Draft Environmental Impact Statement, Project China Stone

^{iv[4]} Waratah Coal (2018) Alpha North Project, Initial Advice Statement, section 3.3.7 Water Supply, page 3-30

^{v[5]} It is unclear whether this permit has been renewed since its initial expiry in January 2018.

^{vi[6]} Based on Adani's own studies see: 'Carmichael Coal Mine and Rail Project' Volume 1, Section 11 Matters of MNES, Figure 11-4 Sheets 1-2.

^{vii[7]} Department of the Environment, 'Matters of National Environmental Significance: Significant Impact Guidelines 1.1 *Environment Protection and Biodiversity Conservation Act 1999* (Cth) 9.

^{viii[8]} Greg Hunt, 'Statement of Reasons for approval of a proposed action under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) EPBC 2010/5736 (14 October 2015) [35].

^{ix[9]} <https://www.theguardian.com/environment/2018/jun/15/great-barrier-reef-four-rivers-are-most-responsible-for-pollution>

^{x[10]} North Galilee Water Scheme (NGWS) Project, EPBC Referral document, Pdf page 48 http://epbcnotices.environment.gov.au/_entity/annotation/2633c814-db6a-e811-817f-005056ba00a7/a71d58ad-4cba-48b6-8dab-f3091fc31cd5?t=1528755820874

^{xi[11]} <https://www.adani.com/about-us/one-vision-one-team>

^{xii[12]} [The Adani Brief - Environmental Justice Australia](#)

^{xiii[13]} Department of the Environment FOI 171001 documents titled "Summary of information provided by Adani in response to a request relating to their environmental history, Annexure 5" pages 5-1 to 5-5

^{xiv[14]} Adani are currently appealing the fine.

Xth June 2018

Referrals Gateway
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Proposed Action: North Galilee Water Scheme (NGWS) Project
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Please accept this submission on behalf of X to the EPBC referral for the North Galilee Water Scheme (**NGWS**) proposed by Adani Infrastructure Pty Ltd (2018/8191) (**Adani**).

[X] is [include background about your organisation here including your members, your interest in this issue and the work that you have done in this field].

We recommend that you declare the NGWS as a controlled action under s 67 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) because it will have, or is likely to have an impact on matters of national environmental significance (**MNES**).

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Recommendations

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mine site on the Belyando River with a capacity equal to the mine's total additional water needs.²

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The volume of water take is likely to constitute a significant impact

The take from the Suttor River of up to 12.5GL per year for the NGWS project is likely to constitute a significant impact on water resources because it amounts to more than 50% of the total strategic reserve for the relevant sub-catchment under the Queensland *Water Plan (Burdekin Basin) 2007*.

Water take and infrastructure does constitute a 'coal mining activity'

The term 'coal mining activity' in the definition of 'large coal mining development' includes activities such as water extraction that form part of a large scale development for the mining of coal. The term is not restricted to 'coal mining' only, as appears to have been concluded by Adani.

When the 'water trigger' was introduced by way of the *Environmental Protection and Biodiversity Conservation Amendment Act 2013* (Cth), the then Minister for Sustainability, Environment, Water, Population and Communities in his second reading speech referred, amongst other things, to the "irreversible depletion.....of our surface and groundwater resources".

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Carmichael Coal Mine and Rail Project SEIS (Nov 2013), Updated Mine Project Description, Appendix B, P. 96-97

reference to the water supply required to operate the mine in the original EIS for the Carmichael coal mine supports that conclusion – it is an integral part of the coal mining activity and without it, the mine cannot operate.

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However, the NGWS is part of the activity of the Carmichael coal mine and the mine cannot operate without it. The need to supply the water was identified in the original coal mine proposal, and therefore it undoubtedly forms part of the activity and is not ‘merely associated with it’. This conclusion is supported by the fact that the NGWS has been formally identified as part of the Adani Combined Project by the Queensland Government.

The NGWS proposes to provide water to other mines currently under EPBC consideration

Adani notes that the NGWS could be used to supply water to other proposed coal mines in the surrounding area, but does not specify what volume of water will be supplied or how this will relate to 12.5GL they have earmarked as being needed for the Carmichael Coal Mine. It is notable that the water licence provided by the Queensland Government to Adani for the Suttor River take authorises take only for ‘*water supply for the Carmichael Coal Mine and Rail Project*’.

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On the basis of this information we consider that this NGWS proposal is actually part of a much larger action. In addition to the additional water take mooted in the NGWS referral

³ Page 13-25, Surface Water, Section 13, Draft Environmental Impact Statement, Project China Stone

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for other mines, Adani has already obtained water permits for additional water take that is not mentioned in the referral. Water Permit 617345 allows the take of 250ML from the Belyando River for mine construction and Water Permit 614017 allow the take of 8050ML from Mistake Creek for mine construction⁵.

We believe that referring the NGWS without providing full details of the entire water take is contrary to the objects of the EPBC Act because it will allow the proponent to avoid a full impact assessment of the proposed action on MNES. We request that you exercise your discretion under s 74A EPBC Act to reject the referral or request Adani to provide further information about the extent of impacts to surface water resources that are likely to result from supplying additional billions of litres of fresh water to mines in the area under s 76(2) EPBC Act.

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Threatened species surveys inadequate

Threatened species surveys conducted for the project by Adani are inadequate. They appear to have conducted only 6 days of site inspections – one three day period in December 2016 and one three day period in May 2-15. This is vastly inadequate both in duration and in seasonality, particularly for a project that has a 500ha disturbance and proposes over 110km of pipeline installation.

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The DoEE protected matters tool identifies one Listed Threatened Ecological Community and 13 Listed Threatened Species as being MNES that are likely to occur within the impact area of the NGWSP. The Matters of NES include:

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The weaknesses of the surveys described above are particularly inadequate in light of Adani's own analysis that there is important or critical habitat present for at least 3 species – Ornamental Snake, Black-throated Finch and Koala.

Adani admit that there is 137.43 hectares of habitat suitable for the Ornamental Snake within the footprint of the project, including important habitat for the species, and that the habitat '*is almost certain to be used for foraging and breeding given the species occurs there*'. However, despite that evidence which clearly triggers the requirements for significant impact contained in the relevant Significant Impact Guidelines, they claim that there will not be a significant impact.

Similarly, Adani themselves acknowledge that there is important habitat for the Black-throated Finch and the Koala within the project footprint, but again claim that there will not be a significant impact. We contend that the conclusions reached by Adani for these two species is also inconsistent with Significant Impact Guidelines.

In relation to the Black Throated Finch, we note that Stage B of the pipeline crosses potential Black-Throated Finch Habitat in a number of locations before heading north at Mistake Creek.⁶ Construction of the pipeline will require clearing of a corridor prior to construction. The proposed route of the NGWS may require clearing of Black Throated Finch habitat which will have a significant impact on the species as set out in the criteria in the EPBC Significant Impact Guidelines for critically endangered and endangered species.⁷

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Furthermore, despite identifying a number of additional species that have the potential to occur, including the Yakka Skink, Red Goshawk, Australian Painted Snipe and Painted Honeyeater, Adani go no further in genuinely assessing likelihood or habitat for the species. This is manifestly inadequate for a project of this size and impact.

Far smaller, similar projects have been declared controlled actions in the past

A comparison with previous similar development proposals in Central Queensland indicates that far smaller projects have been declared as controlled actions by the Department of Environment and Energy for likely impacts on exactly the same species which are at issue with the NGWS.

The Olive Downs Project Water Pipeline (EPBC 2017/7868) is, just like the NGWS, water supply infrastructure to supply a coal mine. The Olive Downs pipeline proposal was for a 19km pipeline, 15m in width, which encompassed a total footprint of 30 hectares. This is only a quarter the length of the NGWS pipeline and half the width. Therefore, the total footprint of the NGWS project is 16 times that of the Olive Downs pipeline.

The species that were likely to be impacted by the Olive Downs pipeline included the Ornamental Snake, the Squatter Pigeon, the Koala and the Greater Glider. All four of those species are known or likely, or have the potential, to occur in the NGWS project. Like Adani, the Olive Downs proponent claimed that the project was unlikely to have a significant impact on these species and was not a controlled action.

However, the Department of Environment and Energy declared the action was a controlled action and that it required assessment and approval under the EPBC Act before it could proceed. Listed threatened species and communities were the stated controlling provision.

Therefore, it is incumbent on the Department to act consistently, and to implement the EPBC Act without fear or favour, which would require it to declare that the NGWS project is a controlled action for listed threatened species and communities, just as they did with the Olive Downs project.

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However, in making this statement, the proponent is restricting itself to Adani Infrastructure Pty Ltd, and is ignoring the environmental record of other, closely associated Adani companies and the environmental history of the company’s directors. The company has an identical ownership structure to Adani Mining Pty Ltd, the proponent of the Carmichael mine. Both are ultimately owned by Indian listed company Adani Enterprises Limited.

Adani Infrastructure Pty Ltd has two directors Jeyakumar Janakaraj and Samir Sevanti Vora. Janakaraj is also the head of Adani in Australia and Chief Executive Officer of Adani Mining Pty Ltd. Vora is also the Chief Operating Officer of Adani Mining Pty Ltd.¹¹ Janakaraj was previously Director of Operations at Konkola Copper Mines (KCM) which is not an Adani Group entity. In 2010, while Janakaraj was Director of Operations, KCM caused extensive pollution of a river near its operations in Zambia. The company pleaded guilty to the offence and was fined.¹²

Adani Mining have previously been investigated by the federal Department of the Environment for potential false and misleading conduct in failing to declare the environmental history of Jeyakumar Janakaraj during the environmental assessment of the Carmichael Mine and Rail Project. Department records show that during this investigation, the details of which were obtained by FOI, in addition to a number of overseas offences, Adani reported 11 environmental incidences in Australia involving Adani Mining Pty Ltd including some resulting in penalty infringement notices and fines.¹³

Adani company Abbot Point Bulk Coal Pty Ltd have been fined for breaching their licence at the Abbot Point coal terminal by releasing coal-laden water into the ocean. Just before

⁹ <https://www.theguardian.com/environment/2018/jun/15/great-barrier-reef-four-rivers-are-most-responsible-for-pollution>

¹⁰ North Galilee Water Scheme (NGWS) Project, EPBC Referral document, Pdf page 48
<http://epbcnotices.environment.gov.au/entity/annotation/2633c814-db6a-e811-817f-005056ba00a7/a71d58ad-4cba-48b6-8dab-f3091fc31cd5?t=1528755820874>

¹¹ <https://www.adani.com/about-us/one-vision-one-team>

¹² [The Adani Brief - Environmental Justice Australia](#)

¹³ Department of the Environment FOI 171001 documents titled “Summary of information provided by Adani in response to a request relating to their environmental history, Annexure 5” pages 5-1 to 5-5

Cyclone Debbie in Queensland, the company was granted a special licence allowing them to pollute well above normal limits during severe weather. Yet, even with that licence, the Queensland Government found that Adani discharged wastewater that exceeded their pollution licence by 800%. Adani were fined \$12,000 for the offence¹⁴.

Adani Infrastructure Pty Ltd should be required to disclose the environmental breaches described above and any other environment incidents that have occurred across all associated entities within the Adani Group to the Federal Government.

¹⁴ Adani are currently appealing the fine.

25th June 2018

Referrals Gateway
Environment Assessment Branch
Department of the Environment
GPO Box 787
Canberra ACT 2601
By email: epbc.referrals@environment.gov.au

Dear Sir/Madam,

Proposed Action: North Galilee Water Scheme (NGWS) Project
Reference Number: 2018/8191

Please accept this submission on behalf of WILVOS Volunteers Association Inc. (WILVOS) to the EPBC referral for the North Galilee Water Scheme (NGWS) proposed by Adani Infrastructure Pty Ltd (2018/8191) (Adani).

Wildlife Volunteers Association Inc. (WILVOS) has provided rescue and rehabilitation services to native fauna of the Sunshine Coast since 1995. WILVOS is a volunteer group with approximately 290 members. Our Association holds collective concerns regarding the potential impacts of the NGWS project. As Chairperson of our organisation and with over 25 years experience in this field, I support the view that the Carmichael mine project carries concerning risks of significant impacts to wildlife habitat and to the continued health, safety and survival of our unique Australian native species, including 13 threatened species.

We recommend that you declare the NGWS as a controlled action under s 67 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBCAct) because it will have, or is likely to have an impact on matters of national environmental significance (MNES).

Adani claims in their referral documents that the NGWS project is not a controlled action. Contrary to that conclusion, it is clear that:

1. The NGWS project must be assessed under the water trigger because:
 - a. the NGWS project is designed solely to facilitate extraction of coal from the Carmichael coal mine, therefore it is an action that involves “large coal mining development” as defined under s 24D of the EPBCAct; and
 - b. there is a real chance or possibility that it will have a significant impact on water resources in the Belyando Suttor sub-catchment.
2. The NGWS is also likely to have a significant impact on a number of threatened species and communities, including the Black Throated Finch, Ornamental Snake and the Koala.
3. Projects affecting the same threatened species with a far smaller footprint have been declared as controlled actions in the past by the Department of Environment and Energy.

4. The potential impact of the Suttor River water take and the associated infrastructure on the Great Barrier Reef World Heritage Area has not been considered by the proponent.

Recommendations

We recommend that you:

1. Declare the NGWS project a controlled action with controlling provisions of:
 - Listed threatened species and communities
 - A water resource in relation to coal seam gas development and large coal mining development
 - World Heritage properties
 - Great Barrier Reef Marine Park
2. Require the full extent and impacts of the project on MNES to be properly assessed under the EPBC Act via a full Environmental Impact Statement.
3. Obtain expert advice on the water impacts of the project from the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC).
4. Require the proponent to fully disclose the environmental compliance record of all associated companies both here and overseas in order for the public to properly understand the compliance history of the Adani group.
5. Recognise that the action is part of a larger action proposing to take far greater volumes of surface water than identified in the referral, by:
 - Exercising your discretion under s74A of the EPBC Act to reject the referral, or
 - Utilising your powers under s76 (2) of the EPBC Act to require Adani to provide further information about the full extent of impacts to surface water, including the proposal to supply other coal mines from the NGWS and other existing water permits held by Adani for construction purposes in the catchment.

Project Summary

The NGWS project is located approximately 160km north-west of Clermont in Central Queensland.

In times of flood, Adani plan to harvest water from the Suttor River downstream of its confluence with the Belyando River. The water will then be stored in a nearby upgraded dam then piped to the mine.

The project consists of:

- flood water harvesting infrastructure on the Suttor River
- a 10 GL (billion litre) dam (the upgrade of a 2GL dam is proposed)
- pumping facilities and a 4km pipe linking the harvester to the dam
- a 110km pipeline with pumping stations connecting the dam to the proposed Carmichael coal mine.

Adani provide a total disturbance footprint for the NGWS of 508.98 hectares. Adani estimate that construction of the NGWS will run from January 2019 to March 2020.

Adani holds a water licence entitling it to take 12.5 billion litres a year from the Suttor River at the location of the proposed water harvester.¹ This was obtained from the Queensland Government in March 2017 with the water being allocated from a State strategic reserve.

Water Resources

Section 24D of the EPBC Act provides as follows:

“(1) A constitutional corporation, the Commonwealth or a Commonwealth agency must not take an action if:

(a) the action involves:

- (i) coal seam gas development; or*
- (ii) large coal mining development; and*

(b) the action:

- (i) has or will have a significant impact on a water resource; or*
- (ii) is likely to have a significant impact on a water resource.”*

The term “large coal mining development” is defined in section 528 as:

“any coal mining activity that has, or is likely to have, a significant impact on water resources (including any impacts of associated salt production and/or salinity):

- (a) in its own right; or*
- (b) when considered with other developments, whether past, present or reasonably foreseeable developments”.*

In their referral, Adani state that the NGWS project does not constitute large coal mining development for the purposes of the EPBCA, and therefore that it is not a controlled action for that provision. In an attachment to the referral, Adani state that ‘*Activities relevant to the water trigger are those that form part of the process of extracting coal and not merely be associated with it*’.

However, the NGWS most certainly does constitute coal mining activity for the purposes of the EPBC Act and as such, it should be considered a controlling provision for the action. We set out below the evidence as to why the NGWS is large coal mining development for the purposes of s 24D of the EPBC Act.

The Suttor River water take and infrastructure has not been assessed previously

In the original Environmental Impact Statement (EIS) documents for the Carmichael Coal Mine, Adani stated that the expected average water demand of the Carmichael mine would be in the order of 12 billion litres (12GL) per annum. This represents the additional water that the project would require on top of that resulting from operational activities such as pit dewatering and on-site rainwater management.

In the original EIS (2012), Adani claimed that this additional water would be sourced from on-site sources and from bores to be drilled along nearby creeks. By the time of the SEIS (late 2013), Adani had modified its plans to include a flood harvesting scheme near to the

¹ Water Act 2000, Water Licence Reference 617268, Expiry 30/06/2077, issued to Adani Infrastructure Pty Ltd

mine site on the Belyando River with a capacity equal to the mine's total additional water needs.²

It was only after the SEIS that Adani moved towards supplying the needs of the mine from flood harvesting of the Suttor River. So, neither the proposed take of water from the Suttor River, nor the associated infrastructure, was considered or assessed under the original EIS for the project.

The NGWS has been formally recognised as part of the Adani Combined Project

The NGWS has been explicitly recognised as being part of the Adani Combined Project by the Queensland Government. In October 2016, the Queensland Minister for State Development, Planning and Infrastructure declared the Adani Combined Project to be both 'critical infrastructure' and a 'prescribed project' under the *State Development and Public Works Organisation Act 1971* (Qld). The NGWS was listed as comprising a key component of that project.

The volume of water take is likely to constitute a significant impact

The take from the Suttor River of up to 12.5GL per year for the NGWS project is likely to constitute a significant impact on water resources because it amounts to more than 50% of the total strategic reserve for the relevant sub-catchment under the *Queensland Water Plan (Burdekin Basin) 2007*.

Water take and infrastructure does constitute a 'coal mining activity'

The term 'coal mining activity' in the definition of 'large coal mining development' includes activities such as water extraction that form part of a large scale development for the mining of coal. The term is not restricted to 'coal mining' only, as appears to have been concluded by Adani.

When the 'water trigger' was introduced by way of the *Environmental Protection and Biodiversity Conservation Amendment Act 2013* (Cth), the then Minister for Sustainability, Environment, Water, Population and Communities in his second reading speech referred, amongst other things, to the "irreversible depletion.....of our surface and groundwater resources".

The relevant *Bills Digest*, which was laid before Parliament before the Bill was enacted, considered the impacts of large scale coal mining on water resources. These included the use of water 'for processing and dust suppression and other mining activities' as a necessity of coal production. In considering a particular coal mine, the *Digest* describes operational water use of 21GL per year from surface and sub-surface sources as 'an appreciable amount' compared to a total annual extraction of around 550GL.

Therefore, it is clear that the correct statutory construction of the EPBC Act is that the extraction of water for use in dust suppression and processing does constitute a coal mining activity, especially when read in the context of the objects of the legislation. Indeed, the

² Carmichael Coal Mine and Rail Project SEIS (Nov 2013), Updated Mine Project Description, Appendix B, P. 96-97

reference to the water supply required to operate the mine in the original EIS for the Carmichael coal mine supports that conclusion – it is an integral part of the coal mining activity and without it, the mine cannot operate.

We note that the relevant Significant Impact Guidelines 1.3 (Coal Seam Gas and Large Coal Mining Developments - impacts on water resources) are quoted by Adani as supporting their argument that water extraction and infrastructure does not constitute a coal mining activity. We note that the non-statutory guidelines do not supplant the law. Most notably, the guideline is not a relevant consideration for the Minister in deciding whether the NGWS project is a controlled action and which provisions are controlling provisions under s 75(1) EPBC Act.

The Guidelines state that extraction of CSG or coal must form part of the activity and not merely be associated with it, and specify that *“where referred along with new or modified extraction of CSG or coal, the following activities will form part of the extractive process: water supply for use in the extraction of CSG or coal.....However, these activities will not independently be CSG or coal mining development where there is no new or modified extraction of CSG or coal”*.

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In its EPBC referral for the NGWS, Adani claims that *“The Proponent (Adani Infrastructure Pty Ltd) has adhered to its regulatory responsibilities in association with its activities. The Proponent has not been the subject of any environmental legal proceedings that have resulted in fines or prosecution.”*¹⁰

However, in making this statement, the proponent is restricting itself to Adani Infrastructure Pty Ltd, and is ignoring the environmental record of other, closely associated Adani companies and the environmental history of the company’s directors. The company has an identical ownership structure to Adani Mining Pty Ltd, the proponent of the Carmichael mine. Both are ultimately owned by Indian listed company Adani Enterprises Limited.

Adani Infrastructure Pty Ltd has two directors Jeyakumar Janakaraj and Samir Sevanti Vora. Janakaraj is also the head of Adani in Australia and Chief Executive Officer of Adani Mining Pty Ltd. Vora is also the Chief Operating Officer of Adani Mining Pty Ltd.¹¹ Janakaraj was previously Director of Operations at Konkola Copper Mines (KCM) which is not an Adani Group entity. In 2010, while Janakaraj was Director of Operations, KCM caused extensive pollution of a river near its operations in Zambia. The company pleaded guilty to the offence and was fined.¹²

Adani Mining have previously been investigated by the federal Department of the Environment for potential false and misleading conduct in failing to declare the environmental history of Jeyakumar Janakaraj during the environmental assessment of the Carmichael Mine and Rail Project. Departmental records show that during this investigation, the details of which were obtained by FOI, in addition to a number of overseas offences, Adani reported 11 environmental incidences in Australia involving Adani Mining Pty Ltd, including some resulting in penalty infringement notices and fines.¹³

⁹<https://www.theguardian.com/environment/2018/jun/15/great-barrier-reef-four-rivers-are-most-responsible-for-pollution>

¹⁰ North Galilee Water Scheme (NGWS) Project, EPBC Referral document, Pdf page 48
<http://epbcnotices.environment.gov.au/entity/annotation/2633c814-db6a-e811-817f-005056ba00a7/a71d58ad-4cba-48b6-8dab-f3091fc31cd5?t=1528755820874>

¹¹ <https://www.adani.com/about-us/one-vision-one-team>

¹² [The Adani Brief - Environmental Justice Australia](#)

¹³ Department of the Environment FOI 171001 documents titled “Summary of information provided by Adani in response to a request relating to their environmental history, Annexure 5” pages 5-1 to 5-5

Adani company Abbot Point Bulk Coal Pty Ltd have been fined for breaching their licence at the Abbot Point coal terminal by releasing coal-laden water into the ocean. Just before Cyclone Debbie in Queensland, the company was granted a special licence allowing them to pollute well above normal limits during severe weather. Yet, even with that licence, the Queensland Government found that Adani discharged wastewater that exceeded their pollution licence by 800%. Adani were fined \$12,000 for the offence¹⁴.

Based on the information in this Submission, we believe it is incumbent upon the EPBCA referral assessment team to ensure that this project of Adani Infrastructure Pty Ltd must be required to disclose the environmental breaches described above and any other environment incidents that have occurred across all associated entities within the Adani Group to the Federal Government.

Sincere regards,

**s47F OAM
(Chair of WILVOS Volunteers Association Inc.)**

¹⁴ Adani are currently appealing the fine.



To: Referrals Gateway
Environment Assessment Branch
Department of the Environment
GPO Box 787
Canberra ACT 2601

Via email: epbc.referrals@environment.gov.au

Submission from 350.org Ltd (Australia)

25/06/2018

Proposed Action: Adani Infrastructure Pty LTD North Galilee Water Scheme (NGWS)

Reference Number: EPBC Ref. 2018/8191

Please accept this submission on behalf of 350.org Australia to the EPBC referral for the North Galilee Water Scheme (NGWS) proposed by Adani Infrastructure PTY Ltd (2018/8191). 350.org Australia is writing in support of the Environmental Defenders Office, Queensland, with regard to the action proposed above.

Who are we?

I am writing on behalf of 350.org with 70,000 supporters in Australia focused on addressing climate change here and around the world. 350.org Australia aims to speed up the reduction of greenhouse gas emissions that threaten our planet with climate change. We work in Australia and around the world to build a global movement working together to demand action to end our dependence on fossil fuels and rapidly move to clean energy for a safe climate future.

The number 350 means climate safety: to preserve a livable planet, scientists tell us we must reduce the amount of CO₂ in the atmosphere from its current level of 410 parts per million to below 350 ppm.

We believe the opening of the Galilee Basin for coal extraction threatens to push emissions levels well beyond the safe limit we need to return to and by allowing it there will be a destruction of freshwater resources, precious wildlife and permanent detrimental effects to the Great Barrier Reef. Opening up the gates of the Galilee Basin will draw billions of tonnes of local groundwater

for coal extraction instead of providing drinking water to large segments of the Queensland population. Moreover, 3 million cubic meters of reef sea floor will be dug up and will be dumped into the internationally significant Caley Valley Wetlands, home to 40,000 birds including rare and threatened species.

Since the signing of the Paris Climate Agreement, scientific experts have made it clear that there can be no new coal, oil or gas projects if we are to meet our emissions targets globally in order to ensure a livable planet. Allowing the Carmichael mine, and in fact a whole new coal development region in the Galilee Basin, to be opened up and to do so with water resources that are already under extreme pressure due to existing demand and climate change impacts such as drought, sets a dangerous precedent. Information on our need to end new coal, oil and gas projects can be found in Oil Change International and 350.org's report "[The Sky's Limit](#)".

Why should the action be assessed under the EPBC Act?

The proposed action should be assessed under the EPBC Act as it is likely to have a **significant impact/s** on the following matters of national environmental significance for the following reasons:

1. **Water resources** - Adani plans to take 10 billion litres of river water. The granting of an unlimited 60-year water licence to the Carmichael mine in the Galilee Basin, has put coal extraction before drinking water to the larger part of Queensland. The Great Artesian Basin, that provides this water resource, is one of the largest underground water reservoirs in the world and underlies 22 % of Australia's land area. Its aquifers supply water to around 200 towns and settlements. However, at the current state coal mining holds just over 1% of the water licences linked to the Artesian Basin but accounts for 10% of water extraction. Allowing coal extraction to go on will resolutely have vital effects on human, plant and animal communities that rely on the basin's water resources. For more see report "[Draining the Lifeblood](#)".
2. **Great Barrier Reef National Park** - Not only of national concern but of international relevance, the world heritage property of The Great Barrier Reef will be greatly affected if coal extraction will continue to occur in the region. The action does not correctly describe the effects of continuing coal extraction in the Galilee basin, because it does not state that there will be any direct or indirect impact on World Heritage properties as a result of the activities undertaken in the basin. For more see research on "[Coal Cumulative Impacts and The Great Barrier Reef](#)".
3. **Climate Change** - If the activities undertaken in the Galilee basin were seen as a country of its own, it would emit more than 1.3 times Australia's current annual emissions and it would rank in the top 15 emitting countries in the world. Burning coal increases the incidence and severity of extreme weather, which will have direct impacts on the people and industries of Australia through increasing bushfires, floods and heatwaves. To protect not only Australia, but the world, from worsening climate change the burning of coal must rapidly be phased out. For more see report by the climate council "[Risky Business: Health, Climate and Economic Risks of the Carmichael](#)".

What is the action?

The NGWS project is located approximately 160km north-west of Clermont in Central Queensland. In times of flood, Adani plan to harvest water from the Suttor River downstream of its confluence with the Belyando River. The water will then be stored in a nearby upgraded dam then piped to the mine.

The project consists of:

- flood water harvesting infrastructure on the Suttor River
- a 10 GL (billion litre) dam (the upgrade of a 2GL dam is proposed)
- pumping facilities and a 4km pipe linking the harvester to the dam
- a 110km pipeline with pumping stations connecting the dam to the proposed Carmichael coal mine.

Adani provides a total disturbance footprint for the NGWS of 508.98 hectares. Adani estimates that construction of the NGWS will run from January 2019 to March 2020.

Adani holds a water licence entitling it to take 12.5 billion litres a year from the Suttor River at the location of the proposed water harvester.¹ This was obtained from the Queensland Government in March 2017 with the water.

What do we recommend?

We recommend that you declare the NGWS as a controlled action under s 67 of the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC ACT) because it will have, or is likely to have an impact on matters of national environmental significance (MNES).

Adani claims in their referral documents that their action is not a controlled action. This is based on field assessments undertaken to evaluate what impact the water scheme may have on the region. In so doing, they have found that at least 23 species are likely to be affected by the construction of the NGWS. Yet they still deem the action to be apt for commencement. But Adani Ltd has failed to assess what larger, long-term and cumulative effects that the water scheme will allow happen to the climate and the environment if the action is accepted. This is made evident by the reports neglect of the impacts that the action will have on: the availability and accessibility of water resources, and the Great Barrier Reef World Heritage Area. The project is primarily designed to facilitate extraction- and is described to be likely to expand extraction in the future²- of coal from the Charmichael coal mine, and must therefore be assessed under the water trigger

¹ Water Act 2000, Water Licence Reference 617268, Expiry 30/06/2077, issued to Adani Infrastructure Pty Ltd.

² Adani PTY Ltd North Galilee Water Scheme Submission #3254, issued by Australian Government Department of Environment and Energy. Section 1: 1.16.1.

as the action then falls under the category as involving “large coal mining development” as defined under s 24D of the EPBC Act.

Adani plans to take **10 billion litres of river water** and seeks to **avoid a full federal EIA**. If the federal government was to activate the water trigger, the scheme would undergo a higher level of scrutiny than that applied by local and state assessments, including input from an independent expert scientific committee. It is necessary that the action be assessed using a **full environmental impact assessment** that is thoroughly reviewed by scientists for the reason that **Adani’s commitments do cause a matter of national significance** as suggested above.

The action has been excepted from public scrutiny in negotiations for water licences due to November 2016 amendments to existing laws³ which, in turn suggests that Adani is not considering matters that involve future generations and other species access to natural resources and a stable climate. The action should not be treated as an isolated matter. Instead, it should be evaluated and understood as being part of a larger matter of concern. Adani’s Ltd water scheme is just the first step to opening up the whole of the Galilee Basin for coal mining. Now more than ever, do we need a full and rigorous assessment of the opening up of the Galilee Basin, under **our environmental laws** to ensure the future of **our water**, the Great Barrier reef and a safe climate.

Therefore we want:

- The action to be declared as a controlled action to protect listed threatened species, communities and the climate
- Require the action be properly assessed under the EPBC Act via a full Environmental Impact Statement
- Obtain expert advice on the water impacts of the projects from the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development
- Require the proponent to fully disclose the environmental compliance record of all associated companies both in Australia and overseas in order for the public to properly understand the history of Adani
- Recognizing that the action is part of a larger action that has international knock on ramifications.

Concluding remarks

We believe that the referral will have a significant impact on the climate and that Adani Infrastructure Pty LTD NGW scheme is a controlled action that needs to be assessed quite specifically. Based on the report provided, assessments of the project have not been all encompassing and have left out relevant elements that are proven to cause strain to natural resources, world heritage listed marine parks and the environment of not only commonwealth land, but ultimately also over the rest of the world by increasing the effects of climate change.

³ ‘Government passes water reforms, exempts Adani from scrutiny’. Environmental Defenders Office. https://www.edoqld.org.au/water_reforms_exemption_public_scrutiny_adani


s47F

s47F, CEO, 350.org Ltd

Suite 8, Lev 3, 50 Reservoir Street, Surry Hills, NSW 2010

s47F



25 June 2018

Referrals Gateway
Environment Assessment Branch
Department of the Environment
GPO Box 787
Canberra ACT 2601

Proposed Action: North Galilee Water Scheme (NGWS) Project
Reference Number: 2018/8191

To the Department of the Environment,

I am writing to you on behalf of the Australian Conservation Foundation (“ACF”).

The ACF is Australia’s national environment organisation. We represent a community of more than 500,000 people who are committed to achieving a healthy environment for all Australians. For more than 50 years, the ACF has been a strong advocate for Australia’s forests, rivers, people and wildlife. ACF is proudly independent, non-partisan and funded by donations from our community.

Thank you for the opportunity, under s 74(3), to allow the ACF to comment on whether the proposed action should be assessed under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (“the EPBC Act”).

Recommendations

The ACF recommends that:

1. The NGWS is declared a controlled action, for the purposes of s 67 of the EPBC Act because it will have, or is likely to have, a significant impact on matters of national environmental significance (“MNES”).
2. The impacts of the proposed action on MNES should be rigorously assessed under the EPBC Act via a full Environmental Impact Statement (“EIS”).
3. The following controlling provisions for the proposed action should apply:
 - a. A water resource, in relation to coal seam gas development and large coal mining development (sections 24D & 24E);



- b. Listed threatened species and communities (sections 18 & 18A);
- c. World Heritage properties (sections 12 & 15A); and
- d. Great Barrier Reef Marine Park (sections 24B & 24C).

Overview

The proposed action, the North Galilee Water Scheme (“NGWS”) project, is located approximately 160 km North-West of Clermont in Central Queensland. The proponent is Adani Infrastructure Pty Ltd (“Adani”), a fully-owned subsidiary of the Adani Group. The total disturbance area for the project is 508.98 ha. Adani estimate that construction will run from January 2019 to March 2020.

The NGWS involves water harvesting and transportation infrastructure to collect flood water from the Suttor River, of the Burdekin Basin catchment, in Central Queensland. The water will be stored in a 10 GL dam (upgraded from 2.2 GL), before being pumped along an approximately 110 km pipeline to the site of the proposed Carmichael coal mine. Adani is currently authorised to take 12.5 GL of surface water from the Suttor River and 8 GL from Mistake Creek, in the Belyando-Suttor Subcatchment.

The proponent intends to use this water for the primary purpose of mining operations at the Carmichael mine. The referral application also contemplates that the NGWS could be used to supply water to other coal mines in the Galilee Basin including Alpha North and China Stone.

Prior Assessment of NGWS

The original EIS documents for the Carmichael coal mine project stated an anticipated surface water demand of 12 GL per year in addition to dewatering and on-site rainwater harvesting. This water to be sources from on-site sources and bores drilled along nearby creeks. By the time of the Supplementary EIS (“SEIS”), the surface water plans had changed to incorporate a flood harvesting scheme at the Belyando River, nearby to the mine site.¹ The EIS and SEIS were assessed during the approval process for the Carmichael mine.

The proposal to harvest water from the Suttor River was not considered in the EIS or SEIS. It follows that the proposed action has not been assessed under the EPBC Act. Arguably the proponent’s decision to refer the NGWS evidences their understanding of this fact.

Significant Impact on MNES

(a) A water resource, in relation to ... large coal mining development (sections 24D & 24E)

¹ Adani Mining Pty Ltd, ‘Carmichael Coal Mine and Rail Project SEIS – Updated Mine Project Description’ (2013) app B, p 96-7.



(i) Statutory interpretation

The 'water trigger' comprises of two-limbs. First, the action must 'involve large coal mining development'.² Second, the action must have or be likely to have 'a significant impact on a water resource'.³ Relevantly, 'large coal mining development' is defined as 'any coal mining activity that has, or is likely to have, a significant impact on water resources'.⁴

The proponent states that the NGWS does not constitute a large coal mining development and is therefore not a controlled action. In a supporting document to the referral application, Adani state that 'activities relevant to the water trigger are those that form part of the process of extracting coal and not merely be associated with it'.⁵ The question of whether the water trigger should apply therefore hinges on the interpretation of 'coal mining activity'.

We note that the relevant Department *Significant Impact Guidelines* provide that only extractive activities fall within the scope of 'coal mining activities' and 'large coal mining developments'.⁶ However, this narrow interpretation of the EPBC Act is of minor relevance to the process of statutory interpretation. The High Court has repeatedly underscored that the task of interpretation requires close consideration of the words of the statute, within the context of the purpose of the legislation.⁷

On the matter of interpretation, Kiefel J has observed that the EPBC Act ought to be interpreted 'consistent with the high public policy apparent in the objects of the Act' and 'no narrow approach should be taken to the interpretation of legislation having objects of this kind'.⁸ These objects include, *inter alia*, 'to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance'.⁹

Considering the specific purposes of the water trigger, during the second reading speech, the Minister referred, *inter alia*, to the 'irreversible depletion ... of our surface and groundwater resources'.¹⁰ The relevant *Bills Digest* also considered the impacts of large coal mining developments

² *Environment Protection and Biodiversity Conservation Act 1999* (Cth) s 24D(1)(a)(ii).

³ *Ibid* s 24D(1)(b).

⁴ *Ibid* s 528.

⁵ Adani Infrastructure Pty Ltd, 'Referral Application – MNES No Impact Summary' (2018) p 3.

⁶ Commonwealth Department of the Environment, 'Significant Impact Guidelines 1.3 – Coal Seam Gas and Large Coal Mining Developments – Impacts on Water Resources' (2013) s 3.4.

⁷ See, eg, *Alcan (NT) Alumina Pty Ltd v Commissioner of Territory Revenue* (2009) 239 CLR 27.

⁸ *Queensland Conservation Council Inc v Minister for Environment and Heritage* [2003] FCA 1463, [40].

⁹ *Environment Protection and Biodiversity Conservation Act 1999* (Cth) s 3(1)(a).

¹⁰ Commonwealth, *Parliamentary Debates* House of Representatives, 13 March 2013, p 1846 (Anthony Burke).



on water resources including the use of water ‘for processing and dust suppression and other mining activities’ as necessary for coal production.¹¹

Having regard to the objects of the EPBC Act and purpose of the water trigger, sections 24D and 24E are intended to capture activities that form part of a large-scale coal mining development. In effect, while the activity must be connected to (i.e. ‘involve’) a large coal mining development it is not limited to the act of extraction.

A narrower interpretation of these sections that only captures coal extraction activities would clearly undermine the purpose of the legislation. It would result in major infrastructure, that is fundamental for coal mining activities and which may have a significant impact on water resources, not being assessed under the EPBC Act. This interpretation would encourage proponents to divide-up their projects, with the intention of avoiding appropriate scrutiny under the water trigger.

(ii) Application to the NGWS

It is not contentious that the Carmichael coal mine is a large coal mining development. The NGWS is required to supply water to the Carmichael coal mine. This water will be used on-site for activities such as coal-washing, longwall coal mining operations, dust and fire suppression. These activities, and therefore the NGWS, clearly ‘involve’ a large coal mining development for the purposes of the EPBC Act.

The proposed water-take of up to 20.5 GL per year from the Suttor River and Mistake Creek amounts to more than 50% of the total ‘state purposes’ strategic reserve for the Belyando-Suttor Subcatchment.¹² This clearly constitutes a significant impact requiring further assessment under the water trigger.

(b) Listed threatened species and communities (sections 18 & 18A)

(i) Referral application based on inadequate surveys

In the referral application, Adani state that the NGWS will impact on listed threatened species and communities, but that these impacts are not likely to be significant and therefore the project does not require further assessment. However, the threatened species surveys conducted on-site for the project are inadequate. They appear to have been conducted over short durations which, given the scale of disturbance (508.98 ha), would fail to consider significant temporal and seasonal variations.

Further, regarding the surveying that was conducted, very little information is provided as to the techniques that were used and where they were applied. Based on the information that is available,

¹¹ Department of Parliamentary Services (Cth), *Bills Digest*, No 108 of 2012-13, 13 May 2013, p 12.

¹² See *Water Plan (Burdakin Basin) 2007* (Qld) s 32(a).



we have no confidence that systematic surveys of flora and fauna took place. This underscores the need for a full EIS.

(ii) Referral application identifies likely significant impacts

Adani's referral application identifies that there is important or critical habitat present for at least three listed threatened species – Ornamental Snake, Black-Throated Finch and Koala. Specifically, 137.43 ha of suitable habitat for the Ornamental Snake falls within the project footprint and this 'is almost certain to be used for foraging and breeding'. Under the relevant *Significant Impact Guidelines*, this constitutes 'critical habitat' and actions that will 'adversely affect habitat critical to the survival of a species' should be considered significant impacts.¹³

Similarly, the referral application acknowledges the presence of important habitat for the Black-Throated Finch and Koala that is likely to be disturbed but conclude that there will not be a significant impact. These conclusions are not sufficiently supported by the evidence presented in the referral application. Further investigation of the project's impact on listed threatened species should be conducted via an EIS.

(c) World Heritage properties (sections 12 & 15A) and Great Barrier Reef Marine Park (sections 24B and 24C)

The referral application states that the proposed action will have no impact on the Great Barrier Reef. However, the Suttor River and Mistake Creek feed the Burdekin River. The Burdekin catchment is an important catchment for the Great Barrier Reef. Recent research has identified that the Burdekin River is one of just four rivers that are most likely to affect water quality on the Great Barrier Reef.¹⁴ Given the sensitivity of the Great Barrier Reef to changes in water quality, the proposed action must be rigorously assessed via a full EIS to identify and minimise downstream impacts.

For more information:

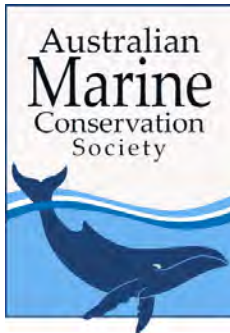
Christian Slattery | Campaigner | P: 03 9345 1226 | E: christian.slattery@acf.org.au

The Australian Conservation Foundation is Australia's national environment organisation. We stand up, speak out and act for a world where reefs, rivers, forests and wildlife thrive.

www.acf.org.au

¹³ Commonwealth Department of the Environment, 'Significant Impact Guidelines 1.1 – Matters of National Environmental Significance' (2013) p 9.

¹⁴ Nicholas H Wolff et al, 'Contribution of Individual Rivers to Great Barrier Reef Nitrogen Exposure with Implications for Management Prioritisation' (2018) 133 *Marine Pollution Bulletin* 30.



Australian Marine Conservation Society

PO Box 5815 West End QLD 4101, ph: 07 3846 6777 fax: 07 3846 6788

email: amcs@amcs.org.au website: www.marineconservation.org.au

By Email: epbc.referrals@environment.gov.au

Dear EPBC Referrals Team,

RE: AMCS submission on North Galilee Water Scheme (NGWS) Project

This letter forms our submission on the referral made by Adani Infrastructure Pty Ltd (**Adani**) under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**), being for:

- 2018/8191: ADANI INFRASTRUCTURE PTY LTD/Transport - Water/Various lots/Queensland/North Galilee Water Scheme, 160km northwest of Clermont, Qld

The Australian Marine Conservation Society (**AMCS**) is the leading charity devoted solely to caring for Australia's oceans and their wildlife. AMCS has over 200,000 members and supporters in Australia whom we represent and work with on key marine issues. AMCS has worked to safeguard the Great Barrier Reef for almost half a century. AMCS has played a key role in many of the most significant steps taken to secure the future of the Reef, including the ban on coral mining and petroleum exploration, the development of Marine Park zoning schemes and the listing of the GBR as a World Heritage Area. Protection of the Great Barrier Reef remains one of AMCS's core objectives.

AMCS appreciates the opportunity to provide comment on the above Referral.

Summary

AMCS recommend that you declare the NGWS as a controlled action under s 67 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) because this is a proposal that has not been assessed before and is likely to have an impact on matters of national environmental significance (**MNES**). AMCS submits that this project be subject to the highest level of assessment given the significant risks it poses to Matters of National Environmental Significance. The impacts to the Great Barrier Reef World Heritage Area and Marine Park and the associated threatened and migratory species must be considered.

The cumulative impacts on the Great Barrier Reef World Heritage Area (GBRWHA) have not been considered

There is overwhelming evidence that many of the values that collectively comprise outstanding universal value (OUV) of the GBRWHA have deteriorated since 1981. The Reef is exposed to many direct and indirect human induced threats, including agriculture run off, fishing, shipping, urban and industrial development and climate change. The cumulative impact of all these activities, along with naturally occurring impacts such as cyclones and outbreaks of coral predators and disease, has caused a massive decline in the presence and resilience of the habitats and species of the Great Barrier Reef.

In its 39th session in July 2015, the World Heritage Committee noted that the overall outlook for the Reef is poor, and that climate change, poor water quality, and coastal development are major threats to the region's habitats, species, and ecosystem processes¹. During the Committee's discussions, four countries specifically mentioned the cumulative impacts of these threats².

The committee did not list the Reef as “in danger” at the 2015 meeting, however it did put the government on notice. The WHC requested that the Australian Government demonstrate how it will implement its long-term plan (Reef 2050) designed to restore the values for which the Reef was listed as World Heritage, and then to report again in 2019. Managing cumulative impacts is a major underpinning theme of the Reef 2050 Plan and requires all threats to the Reef to be assessed as a whole.

When approving the Carmichael Coal Mine project, the Minister found that the proponent’s proposed action may have indirect impacts on the GBRWHA via impacts through watercourses due to reduction in downstream flow. However, the Minister did not consider the cumulative impacts of the project with the flood harvesting proposed in the NGWS project.

Cumulative impacts must be a consideration in any development application that will impact the values of the Great Barrier Reef World Heritage Area. The significant impact guidelines for the Great Barrier Reef World Heritage Area, identify changes to natural water regimes as examples of possible significant impacts arising from actions/activities likely to occur in or adjacent to the Great Barrier Reef World Heritage. It also refers to mining operations, dams and/or other infrastructure that may have downstream impacts on the GBRWHA. Given the importance of addressing cumulative impacts as part of Reef 2050 and the concerns of the World Heritage Committee, the Australian government cannot approve any development that will impact the Great Barrier Reef without a full EIS process that addresses the cumulative impacts that this project will have on the Reef and its associated threatened and migratory species.

The Suttor River water take and infrastructure has not been assessed previously

In the original Environmental Impact Statement (EIS) documents for the Carmichael Coal Mine, Adani stated that additional water would be sourced from on-site sources and from bores to be drilled along nearby creeks. By the time of the SEIS (late 2013), Adani had

¹ *World Heritage Committee. (2015). Decision 39 COM 7B.7. United Nations Educational, Scientific and Cultural Organization (UNESCO), Paris, France, pp. 68-69.*

http://whc.unesco.org/download.cfm?id_document=137710&type=doc.

² <https://theconversation.com/not-out-of-hot-water-yet-what-the-world-thinks-about-the-great-barrier-reef-42945>

modified its plans to include a flood harvesting scheme near to the mine site on the Belyando River with a capacity equal to the mine's total additional water needs.

It was only after the SEIS that Adani moved towards supplying the needs of the mine from flood harvesting of the Suttor River. Neither the proposed take of water from the Suttor River, nor the associated infrastructure, has been considered or assessed under the original EIS for the project.

The environmental record of all Adani companies needs to be disclosed

In its EPBC referral for the NGWS, Adani states that Adani infrastructure Pty Ltd has *“not been the subject of any environmental legal proceedings that have resulted in fines or prosecution.”*

However, the proponent is restricting itself to Adani Infrastructure Pty Ltd, and is ignoring the environmental record of other, closely associated Adani companies and the environmental history of the company's directors. The company has an identical ownership structure to Adani Mining Pty Ltd, the proponent of the Carmichael mine. Both are ultimately owned by Indian listed company Adani Enterprises Limited.

Adani Infrastructure Pty Ltd has two directors Jeyakumar Janakaraj and Samir Sevanti Vora. Janakaraj is also the head of Adani in Australia and Chief Executive Officer of Adani Mining Pty Ltd. Vora is also the Chief Operating Officer of Adani Mining Pty Ltd. Janakaraj was previously Director of Operations at Konkola Copper Mines (KCM) which is not an Adani Group entity. In 2010, while Janakaraj was Director of Operations, KCM caused extensive pollution of a river near its operations in Zambia. The company pleaded guilty to the offence and was fined.

Adani Mining have previously been investigated by the federal Department of the Environment for potential false and misleading conduct in failing to declare the environmental history of Jeyakumar Janakaraj during the environmental assessment of the Carmichael Mine and Rail Project. Department records show that during this investigation, Adani reported 11 environmental incidences in Australia involving Adani Mining Pty Ltd including some resulting in penalty infringement notices and fines.

Adani company Abbot Point Bulk Coal Pty Ltd have been fined for breaching their licence at the Abbot Point coal terminal by releasing coal-laden water into the Great Barrier Reef World Heritage Area. The company exceeded their special temporary emissions licence by 800% and were fined \$12,000 for the offence.

Adani Infrastructure Pty Ltd should be required to disclose the environmental breaches described above and any other environment incidents that have occurred across all associated entities within the Adani Group to the Federal Government.

Sincerely,

s47F

Dr s47F

Great Barrier Reef Campaigner
Australian Marine Conservation Society
4/145 Melbourne St
South Brisbane 4101



Stop Adani Sunshine Coast | Email: StopAdani.SunshineCoast@gmail.com

21st June 2018

Referrals Gateway
Environment Assessment Branch
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Canberra ACT 2601
By email: epbc.referrals@environment.gov.au

Proposed Action: North Galilee Water Scheme (NGWS) Project
Reference Number: 2018/8191

Please accept this submission on behalf of Stop Adani Sunshine Coast to the EPBC referral for the North Galilee Water Scheme (**NGWS**) proposed by Adani Infrastructure Pty Ltd (2018/8191) (**Adani**).

Stop Adani Sunshine Coast has over 500 active members who are concerned that development of the Galilee Basin and associated infrastructure is proceeding without proper environmental approvals and protections. Our members include some who have lived and others who have visited the Belyando River, Mistake Creek and Suttor River catchments and are aware of the ecological value of the region, which includes a significant number of endangered fauna species.

We recommend that you declare the NGWS as a controlled action under s 67 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) because it will have, or is likely to have an impact on matters of national environmental significance (**MNES**).

Adani claims in their referral documents that the NGWS project is not a controlled action. Contrary to that conclusion, it is clear that:

1. The NGWS project must be assessed under the water trigger because:
 - a. the NGWS project is designed solely to facilitate extraction of coal from the Carmichael coal mine, therefore it is an action that involves “large coal mining development” as defined under s 24D of the EPBC Act; and

- b. there is a real chance or possibility that it will have a significant impact on water resources in the Belyando Suttor sub-catchment.
2. The NGWS is also likely to have a significant impact on a number of threatened species and communities, including the Black Throated Finch, Ornamental Snake and the Koala.
3. Projects affecting the same threatened species with a far smaller footprint have been declared as controlled actions in the past by the Department of Environment and Energy.
4. The proponent has not considered the potential impact of the Suttor River water take and the associated infrastructure on the Great Barrier Reef World Heritage Area.

Recommendations

We recommend that you:

1. Declare the NGWS project a controlled action with controlling provisions of:
 - Listed threatened species and communities
 - A water resource in relation to coal seam gas development and large coal mining development
 - World Heritage properties
 - Great Barrier Reef Marine Park
2. Require the full extent and impacts of the project on MNES to be properly assessed under the EPBC Act via a full Environmental Impact Statement.
3. Obtain expert advice on the water impacts of the project from the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (**IESC**).
4. Require the proponent to fully disclose the environmental compliance record of all associated companies both here and overseas in order for the public to properly understand the compliance history of the Adani group.
5. Recognise that the action is part of a larger action proposing to take far greater volumes of surface water than identified in the referral, by:
 - Exercising your discretion under s74A of the EPBC Act to reject the referral, or
 - Utilising your powers under s76 (2) of the EPBC Act to require Adani to provide further information about the full extent of impacts to surface water, including the proposal to supply other coal mines from the NGWS and other existing water permits held by Adani for construction purposes in the catchment.

Project Summary

The NGWS project is located approximately 160km north-west of Clermont in Central Queensland.

In times of flood, Adani plan to harvest water from the Suttor River downstream of its confluence with the Belyando River. The water will then be stored in a nearby upgraded dam then piped to the mine.

The project consists of:

- flood water harvesting infrastructure on the Suttor River

- a 10 GL (billion litre) dam (the upgrade of a 2GL dam is proposed)
- pumping facilities and a 4km pipe linking the harvester to the dam
- a 110km pipeline with pumping stations connecting the dam to the proposed Carmichael coal mine.

Adani provide a total disturbance footprint for the NGWS of 508.98 hectares. Adani estimate that construction of the NGWS will run from January 2019 to March 2020.

Adani holds a water licence entitling it to take 12.5 billion litres a year from the Suttor River at the location of the proposed water harvester.¹ This was obtained from the Queensland Government in March 2017 with the water being allocated from a State strategic reserve.

Water Resources

Section 24D of the EPBC Act provides as follows:

“(1) A constitutional corporation, the Commonwealth or a Commonwealth agency must not take an action if:

(a) the action involves:

- (i) coal seam gas development; or*
- (ii) large coal mining development; and*

(b) the action:

- (i) has or will have a significant impact on a water resource; or*
- (ii) is likely to have a significant impact on a water resource.”*

The term “large coal mining development” is defined in section 528 as:

“any coal mining activity that has, or is likely to have, a significant impact on water resources (including any impacts of associated salt production and/or salinity):

- (a) in its own right; or*
- (b) when considered with other developments, whether past, present or reasonably foreseeable developments”.*

In their referral, Adani state that the NGWS project does not constitute large coal mining development for the purposes of the EPBCA, and therefore that it is not a controlled action for that provision. In an attachment to the referral, Adani state that ‘Activities relevant to the water trigger are those that form part of the process of extracting coal and not merely be associated with it’.

However, the NGWS most certainly does constitute coal mining activity for the purposes of the EPBC Act and as such, it should be considered a controlling provision for the action. We set out below the evidence as to why the NGWS is large coal mining development for the purposes of s 24D of the EPBC Act.

The Suttor River water take and infrastructure has not been assessed previously

In the original Environmental Impact Statement (EIS) documents for the Carmichael Coal Mine, Adani stated that the expected average water demand of the Carmichael mine would be in the order of 12 billion litres (12GL) per annum. This represents the additional water that the project

¹ Water Act 2000, Water Licence Reference 617268, Expiry 30/06/2077, issued to Adani Infrastructure Pty Ltd

would require on top of that resulting from operational activities such as pit dewatering and on-site rainwater management.

In the original EIS (2012), Adani claimed that this additional water would be sourced from on-site sources and from bores to be drilled along nearby creeks. By the time of the SEIS (late 2013), Adani had modified its plans to include a flood harvesting scheme near to the mine site on the Belyando River with a capacity equal to the mine's total additional water needs.²

It was only after the SEIS that Adani moved towards supplying the needs of the mine from flood harvesting of the Suttor River. So, neither the proposed take of water from the Suttor River, nor the associated infrastructure, was considered or assessed under the original EIS for the project.

The NGWS has been formally recognised as part of the Adani Combined Project

The NGWS has been explicitly recognised as being part of the Adani Combined Project by the Queensland Government. In October 2016, the Queensland Minister for State Development, Planning and Infrastructure declared the Adani Combined Project to be both 'critical infrastructure' and a 'prescribed project' under the *State Development and Public Works Organisation Act 1971* (Qld). The NGWS was listed as comprising a key component of that project.

The volume of water take is likely to constitute a significant impact

The take from the Suttor River of up to 12.5GL per year for the NGWS project is likely to constitute a significant impact on water resources because it amounts to more than 50% of the total strategic reserve for the relevant sub-catchment under the *Queensland Water Plan (Burdekin Basin) 2007*.

Water take and infrastructure does constitute a 'coal mining activity'

The term 'coal mining activity' in the definition of 'large coal mining development' includes activities such as water extraction that form part of a large scale development for the mining of coal. The term is not restricted to 'coal mining' only, as appears to have been concluded by Adani.

When the 'water trigger' was introduced by way of the *Environmental Protection and Biodiversity Conservation Amendment Act 2013* (Cth), the then Minister for Sustainability, Environment, Water, Population and Communities in his second reading speech referred, amongst other things, to the "irreversible depletion.....of our surface and groundwater resources".

The relevant *Bills Digest*, which was laid before Parliament before the Bill was enacted, considered the impacts of large scale coal mining on water resources. These included the use of water 'for processing and dust suppression and other mining activities' as a necessity of coal production. In considering a particular coal mine, the *Digest* describes operational water use of 21GL per year from surface and sub-surface sources as 'an appreciable amount' compared to a total annual extraction of around 550GL.

² Carmichael Coal Mine and Rail Project SEIS (Nov 2013), Updated Mine Project Description, Appendix B, P. 96-97

Therefore, it is clear that the correct statutory construction of the EPBC Act is that the extraction of water for use in dust suppression and processing does constitute a coal mining activity, especially when read in the context of the objects of the legislation. Indeed, the reference to the water supply required to operate the mine in the original EIS for the Carmichael coal mine supports that conclusion – it is an integral part of the coal mining activity and without it, the mine cannot operate.

We note that the relevant [Significant Impact Guidelines 1.3](#) (Coal Seam Gas and Large Coal Mining Developments - impacts on water resources) are quoted by Adani as supporting their argument that water extraction and infrastructure does not constitute a coal mining activity. We note that the non-statutory guidelines do not supplant the law. Most notably, the guideline is not a relevant consideration for the Minister in deciding whether the NGWS project is a controlled action and which provisions are controlling provisions under s 75(1) EPBC Act.

The Guidelines state that extraction of CSG or coal must form part of the activity and not merely be associated with it, and specify that “*where referred along with new or modified extraction of CSG or coal, the following activities will form part of the extractive process: water supply for use in the extraction of CSG or coal.....However, these activities will not independently be CSG or coal mining development where there is no new or modified extraction of CSG or coal*”.

However, the NGWS is part of the activity of the Carmichael coal mine and the mine cannot operate without it. The need to supply the water was identified in the original coal mine proposal, and therefore it undoubtedly forms part of the activity and is not ‘merely associated with it’. This conclusion is supported by the fact that the NGWS has been formally identified as part of the Adani Combined Project by the Queensland Government.

The NGWS proposes to provide water to other mines currently under EPBC consideration

Adani notes that the NGWS could be used to supply water to other proposed coal mines in the surrounding area, but does not specify what volume of water will be supplied or how this will relate to 12.5GL they have earmarked as being needed for the Carmichael Coal Mine. It is notable that the water licence provided by the Queensland Government to Adani for the Suttor River take authorises take only for ‘*water supply for the Carmichael Coal Mine and Rail Project*’.

The company names the China Stone Coal Project as one of the mines it could supply. The Environmental Impact Statement for the China Stone Project states that the mine will need to source a significant portion of its water supply from off-site, especially in dry years. The project proponent, Macmines Austasia, plans to secure an external supply of up to 12.5 billion litres of water per annum.³ In its recent EPBC referral for the Alpha North Project, Waratah Coal notes that it too is planning to source water “through the NGWS being developed by Adani”.⁴

On the basis of this information we consider that this NGWS proposal is actually part of a much larger action. In addition to the additional water take mooted in the NGWS referral for other mines, Adani has already obtained water permits for additional water take that is not mentioned in the referral. Water Permit 617345 allows the take of 250ML from the Belyando River for mine

³ Page 13-25, Surface Water, Section 13, Draft Environmental Impact Statement, Project China Stone

⁴ Waratah Coal (2018) Alpha North Project, Initial Advice Statement, section 3.3.7 Water Supply, page 3-30

construction and Water Permit 614017 allow the take of 8050ML from Mistake Creek for mine construction⁵.

We believe that referring the NGWS without providing full details of the entire water take is contrary to the objects of the EPBC Act because it will allow the proponent to avoid a full impact assessment of the proposed action on MNES. We request that you exercise your discretion under s 74A EPBC Act to reject the referral or request Adani to provide further information about the extent of impacts to surface water resources that are likely to result from supplying additional billions of litres of fresh water to mines in the area under s 76(2) EPBC Act.

Threatened Species

Threatened species surveys inadequate

Threatened species surveys conducted for the project by Adani are inadequate. They appear to have conducted only 6 days of site inspections – one three day period in December 2016 and one three day period in May 2-15. This is vastly inadequate both in duration and in seasonality, particularly for a project that has a 500ha disturbance and proposes over 110km of pipeline installation.

There is very little information provided as to the nature or intensity of the surveys that were conducted. However, in Attachment D of the referral Adani refer to site assessments involving apparently visual ‘*assessment of fauna habitat values*’. In other parts of the referral, Adani make some reference to surveys for the Koala, Ornamental Snake and Black Throated Finch, but it is not clear if this is simply the ‘site assessments’ referred to in Attachment D. There is no information provided on what survey techniques were used for each species and where they were applied.

In light of the information that is available, it would seem that there were no systematic surveys for flora and fauna, and it seems unlikely that there were any extensive targeted surveys for relevant species using appropriate survey techniques.

Impacts on important habitat for threatened species by Adani’s own admission

The DoEE protected matters tool identifies one Listed Threatened Ecological Community and 13 Listed Threatened Species as being MNES that are likely to occur within the impact area of the NGWSP. The Matters of NES include:

⁵ It is unclear whether this permit has been renewed since its initial expiry in January 2018.

- Brigalow (*Acacia harpophylla* dominant and codominant) (Endangered);
- Red Goshawk (Vulnerable);
- Squatter Pigeon (southern) (Vulnerable);
- Painted Honeyeater (Vulnerable);
- Star Finch (eastern), Star Finch (southern) (Endangered);
- Southern Black-throated Finch (Endangered);
- Australian Painted Snipe (Endangered);
- Masked Owl (northern) (Vulnerable);
- Northern Quoll (Endangered);
- Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) (Vulnerable);
- Waxy Cabbage Palm (Vulnerable);
- Yakka Skink (Vulnerable);
- Ornamental Snake (Vulnerable);
- Curlew Sandpiper (Critically Endangered).

The weaknesses of the surveys described above are particularly inadequate in light of Adani's own analysis that there is important or critical habitat present for at least 3 species – Ornamental Snake, Black-throated Finch and Koala.

Adani admit that there is 137.43 hectares of habitat suitable for the Ornamental Snake within the footprint of the project, including important habitat for the species, and that the habitat '*is almost certain to be used for foraging and breeding given the species occurs there*'. However, despite that evidence which clearly triggers the requirements for significant impact contained in the relevant Significant Impact Guidelines, they claim that there will not be a significant impact.

Similarly, Adani themselves acknowledge that there is important habitat for the Black-throated Finch and the Koala within the project footprint, but again claim that there will not be a significant impact. We contend that the conclusions reached by Adani for these two species is also inconsistent with Significant Impact Guidelines.

In relation to the Black Throated Finch, we note that Stage B of the pipeline crosses potential Black-Throated Finch Habitat in a number of locations before heading north at Mistake Creek.⁶ Construction of the pipeline will require clearing of a corridor prior to construction. The proposed route of the NGWS may require clearing of Black Throated Finch habitat which will have a significant impact on the species as set out in the criteria in the EPBC Significant Impact Guidelines for critically endangered and endangered species.⁷

Furthermore, despite identifying a number of additional species that have the potential to occur, including the Yakka Skink, Red Goshawk, Australian Painted Snipe and Painted Honeyeater, Adani go no further in genuinely assessing likelihood or habitat for the species. This is manifestly inadequate for a project of this size and impact.

⁶ Based on Adani's own studies see: 'Carmichael Coal Mine and Rail Project' Volume 1, Section 11 Matters of MNES, Figure 11-4 Sheets 1-2.

⁷ Department of the Environment, 'Matters of National Environmental Significance: Significant Impact Guidelines 1.1 *Environment Protection and Biodiversity Conservation Act 1999* (Cth) 9.

Far smaller, similar projects have been declared controlled actions in the past

A comparison with previous similar development proposals in Central Queensland indicates that far smaller projects have been declared as controlled actions by the Department of Environment and Energy for likely impacts on exactly the same species which are at issue with the NGWS.

The Olive Downs Project Water Pipeline (EPBC 2017/7868) is, just like the NGWS, water supply infrastructure to supply a coal mine. The Olive Downs pipeline proposal was for a 19km pipeline, 15m in width, which encompassed a total footprint of 30 hectares. This is only a quarter the length of the NGWS pipeline and half the width. Therefore, the total footprint of the NGWS project is 16 times that of the Olive Downs pipeline.

The species that were likely to be impacted by the Olive Downs pipeline included the Ornamental Snake, the Squatter Pigeon, the Koala and the Greater Glider. All four of those species are known or likely, or have the potential, to occur in the NGWS project. Like Adani, the Olive Downs proponent claimed that the project was unlikely to have a significant impact on these species and was not a controlled action.

However, the Department of Environment and Energy declared the action was a controlled action and that it required assessment and approval under the EPBC Act before it could proceed. Listed threatened species and communities were the stated controlling provision.

Therefore, it is incumbent on the Department to act consistently, and to implement the EPBC Act without fear or favour, which would require it to declare that the NGWS project is a controlled action for listed threatened species and communities, just as they did with the Olive Downs project.

Potential impacts on the Great Barrier Reef

When approving the Carmichael Coal Mine project, the Minister found that the proponent's proposed action may have indirect impacts on the GBRWHA via impacts through watercourses due to reduction in downstream flow.⁸ However, the Minister did not consider the cumulative impacts of the project with the flood harvesting proposed in the NGWS project.

The significant impact guidelines for the Great Barrier Reef World Heritage Area, identify changes to natural water regimes as examples of possible significant impacts arising from actions/activities likely to occur in or adjacent to the Great Barrier Reef World Heritage. It also refers to mining operations, dams and/or other infrastructure that may have downstream impacts on the GBRWHA.

The Burdekin catchment in which the Suttor River is located is an important catchment of the Great Barrier Reef. Recent research has identified that the Burdekin River is one of just four rivers that are most likely to affect water quality into the GBR⁹. Therefore, any activity, such as flood harvesting in the catchment and associated infrastructure, should be considered likely to

⁸ Greg Hunt, 'Statement of Reasons for approval of a proposed action under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) EPBC 2010/5736 (14 October 2015) [35].

⁹ <https://www.theguardian.com/environment/2018/jun/15/great-barrier-reef-four-rivers-are-most-responsible-for-pollution>

have a significant impact unless or until extensive hydrological assessment and modelling has been conducted to prove otherwise.

Environmental Record

In its EPBC referral for the NGWS, Adani claims that *“The Proponent (Adani Infrastructure Pty Ltd) has adhered to its regulatory responsibilities in association with its activities. The Proponent has not been the subject of any environmental legal proceedings that have resulted in fines or prosecution.”*¹⁰

However, in making this statement, the proponent is restricting itself to Adani Infrastructure Pty Ltd, and is ignoring the environmental record of other, closely associated Adani companies and the environmental history of the company’s directors. The company has an identical ownership structure to Adani Mining Pty Ltd, the proponent of the Carmichael mine. Both are ultimately owned by Indian listed company Adani Enterprises Limited.

Adani Infrastructure Pty Ltd has two directors Jeyakumar Janakaraj and Samir Sevanti Vora. Janakaraj is also the head of Adani in Australia and Chief Executive Officer of Adani Mining Pty Ltd. Vora is also the Chief Operating Officer of Adani Mining Pty Ltd.¹¹ Janakaraj was previously Director of Operations at Konkola Copper Mines (KCM) which is not an Adani Group entity. In 2010, while Janakaraj was Director of Operations, KCM caused extensive pollution of a river near its operations in Zambia. The company pleaded guilty to the offence and was fined.¹²

Adani Mining have previously been investigated by the federal Department of the Environment for potential false and misleading conduct in failing to declare the environmental history of Jeyakumar Janakaraj during the environmental assessment of the Carmichael Mine and Rail Project. Department records show that during this investigation, the details of which were obtained by FOI, in addition to a number of overseas offences, Adani reported 11 environmental incidences in Australia involving Adani Mining Pty Ltd including some resulting in penalty infringement notices and fines.¹³

Adani company Abbot Point Bulk Coal Pty Ltd have been fined for breaching their licence at the Abbot Point coal terminal by releasing coal-laden water into the ocean. Just before Cyclone Debbie in Queensland, the company was granted a special licence allowing them to pollute well above normal limits during severe weather. Yet, even with that licence, the Queensland Government found that Adani discharged wastewater that exceeded their pollution licence by 800%. Adani were fined \$12,000 for the offence¹⁴.

Adani Infrastructure Pty Ltd should be required to disclose the environmental breaches described above and any other environment incidents that have occurred across all associated entities within the Adani Group to the Federal Government.

¹⁰ North Galilee Water Scheme (NGWS) Project, EPBC Referral document, Pdf page 48
<http://epbcnotices.environment.gov.au/entity/annotation/2633c814-db6a-e811-817f-005056ba00a7/a71d58ad-4cba-48b6-8dab-f3091fc31cd5?t=1528755820874>

¹¹ <https://www.adani.com/about-us/one-vision-one-team>

¹² [The Adani Brief - Environmental Justice Australia](#)

¹³ Department of the Environment FOI 171001 documents titled “Summary of information provided by Adani in response to a request relating to their environmental history, Annexure 5” pages 5-1 to 5-5

¹⁴ Adani are currently appealing the fine.

Sincerely,

s47F

(for Stop Adani Sunshine Coast)

Referrals Gateway
Environment Assessment Branch
Department of the Environment
GPO Box 787, Canberra ACT 2601

By email: epbc.referrals@environment.gov.au

Date: 25 June 2018

Subject: Submission in response to EPBC Proposed Action: Adani North Galilee Water Scheme. Reference Number: 2018/8191

Dear Mr Frydenberg MP,

On behalf of Business Services of Coast and Country Inc (Coast and Country), I thank the Minister for providing the opportunity to comment on this referral. The information below has been developed to support the Minister to declare the proposed Adani North Galilee Water Scheme to be a Controlled Action.

The purpose of this document is to outline Coast and Country's concerns to the application made by Adani Infrastructure Pty Ltd, for the North Galilee Water Scheme (Reference Number: 2018/8191) (ADANI INFRASTRUCTURE PTY LTD/Transport – Water/Various lots/Queensland/North Galilee Water Scheme, 160km northwest of Clermont, Qld) (**NGWS**), and to provide new information to address the deficiencies and omissions of the application.

In summary, the application made by Adani Infrastructure Pty Ltd for the NGWS is for a 110 km pipeline, expansion to an existing ring tank (dam), and the development of other things to support the extraction and delivery of 12.5 billion litres of water to the Carmichael Coal Mine.

Adani Infrastructure Pty Ltd have stated in the application that the project will not impact a water resource in relation to a coal mine¹. In doing so they say the Carmichael Coal Mine is operated by Adani Mining Pty Ltd, and the NGWS is that of Adani Infrastructure Pty Ltd. They also say Adani Infrastructure Pty Ltd proposes to...

“provide a secure and reliable water supply under a commercial agreement to the operators of the Carmichael Coal Project (CCP) and potentially in the future, other resource-extraction projects in the northern Galilee Basin²”.

What is clear, the Adani application fails to raise the project's impact to a water resource. Information below will clearly demonstrate the 12.5 billion litres annual take of water from the Suttor flood harvesting location is water for the extraction of coal at the Carmichael Coal Mine. This information will provides quotes and references from the Adani Carmichael Coal Mine and Railway Project EIS materials, and includes maps and schedules of other relevant information from various sources.

Further, this document will provide information as to the downstream locations that will be significantly impacted by the water take of the NGWS. This information will reference publicly available datasets of water bodies, and listed flora and fauna that will be significantly impacted by this water take. Provision of this information will demonstrate the omission of this impact from the 2018/8191 application.

What is evident, is the lack of information provided by the applicant to this fact; and in doing so provides a single of course of action that the Minister to decide the application for the North Galilee

1 Adani Infrastructure Pty Ltd (Adani), 'Submission #3254 - North Galilee Water Scheme (NGWS) Project', June 2018, sec. 5.1.9., <http://epbcnotices.environment.gov.au/>.

2 Adani Infrastructure Pty Ltd (Adani), sec. 1.2.

Water Scheme (Reference Number: 2018/8191) as a controlled action, and for the applicant to undertake a comprehensive Environmental Impact Statement (EIS).

To make this decision the Minister will consider varied information resources. The EPBC, s24D looks to protect water resources from coal seam gas development and large coal mining development. The Adani Carmichael Coal Mine meets the criteria for a large coal mine, through its nominated 60 million tonne per annual, thermal export target. Adani, through its various 100% owned subsidiaries of Adani Enterprises, operating in Australia, are constitutional corporations registered with the Australian Stock Exchange. Finally, as articulated within the Carmichael Coal Mine and Railway Project (CCMRP) SEIS Water Balance³, and as further extrapolated below, Adani will have a significant impact on a water resource. That impact will be caused by water take at the Belyando Junction extraction point noted within this application, and the secondary other extraction points directly linked to the NGWS that are omitted from the application, these being: 1) the Mistake Creek flood harvesting system, and 2) the Belyando River flood harvesting system.

Under such circumstances Coast and Country kindly requests the Honourable Minister to decided this project as a controlled action, and for the applicant to undertake a comprehensive EIS. To ensure the natural and financial values of the water resource are properly known, Coast and Country recommends an EIS terms of reference ensure the following considerations:

1. The current and future aspirational economic targets of existing water users within the Upper Belyando and Upper Suttor catchments are known and modelled for this impacted water resource;
2. The seasonal variation of both flora and fauna of the Upper Belyando and Upper Suttor catchments that will be impacted by NGWS water extraction, including targeting:
 - listed migratory species, listed EPBC species and breeding periods that are both within low flow periods and following high rainfall seasons;
 - all wetlands and waterholes, particularly those recognised as High Ecological Significance wetlands⁴, and those water holes that provide refugium services in times of low flow, and;
 - the Scartwater Aggregation⁵ DIWA nationally important wetland.
3. The impacts directly derived by this development on the water resource, but also the future impacts it will cause through its facilitation and likely expansion to accommodate at least two other Galilee Basin large coal mines that look to its opportunity (Project China Stone and the Alpha North Coal Mine Project);
4. Finally, long term climatic scenarios are modelled and for those models to consider the proposed and future water extraction brought on by the NGWS in relation to the water resource for those things listed in points 1 and 2 above.

Proper scientific assessment and seasonal variation of both flora and fauna is required. For this reason, Coast and Country recommends a multi year and multi seasonal based assessment to properly understand migration behaviours.

Organisation Background

Business Services of Coast and Country Inc (Coast and Country) is a natural resource management directed organisation. The organisation undertakes activities to ensure heavy industry developments proposed for the Burdekin Catchment and the Desert Uplands and Brigalow bioregions are properly understood. This includes engagement of specialists and experts across various disciplines to ensure proposed development is aligned to existing pastoral production needs, and sustainable natural resource management.

³ Adani Mining Pty Ltd, 'Carmichael Coal Mine and Rail Project', accessed 20 June 2018, <http://www.statedevelopment.qld.gov.au/assessments-and-approvals/carmichael-coal-mine-and-rail-project.html>.

⁴ Department of Environment and Science, 'Wetland Protection Series - Data | Queensland Government', n.d., <https://data.qld.gov.au/dataset/wetland-protection-series>.

⁵ Department of Environment and Science, 'Scartwater Aggregation DIWA Nationally Important Wetland — Facts and Maps', n.d., <https://wetlandinfo.ehp.qld.gov.au/wetlands/facts-maps/diwa-wetland-scartwater-aggregation/>.

Impacts to Water

Situation:

1. The CCMRP was first assessed under the EPBC and approved on the 24 July 2014, and then again on the 14 Oct 2015;
2. The Australian Government's Independent Expert Scientific Committee (IESC) assessed the EIS and SEIS of the CCMRP and provided advice to the Australian Government on the 15 January 2013. The IIESC report has not been reviewed against the surface water issues being proposed;
3. The IESC on two occasions noted concerns regarding the surface water related impacts, including groundwater Dependant Ecosystems, which the Lower Belyando and Lower Suttor River support;
4. The CCMRP EIS material modified the water needs throughout the EIS development process. In the early stage the developer sort to source permanent water from a bore field on Moray Downs Station, and around 24 GL per annum from flood harvesting from the Belyando River. In a later iteration the bore field was removed, and the Belyando River take dropped to 12.5 GL per annum;
5. The final AEIS was made public on 25 Nov 2013;
6. A water permit application for 2GL of water was part of the CCMRP EIS to supply the SP1 and SP2 railway line from the mine to the Moranbah junction;
7. A water permit for 8GL was approved in 2016 for extraction from the Mistake Creek to be stored at Disney Dam. This take was not assessed by the EPBC Minister;
8. The NGWS was first publicly announced around December 2014 through an online tendering EOI. The NGWS was stated as a project of Adani Mining pty Ltd. The EOI states: "Water is required to be supplied from the Scheme for the following purposes:....Operation of the CCMP";
9. Adani Infrastructure Pty Ltd ACN: 606 764 827 was registered with ASIC on the 30 June 2015⁶;
10. A 60 year 12.5 GL per annum water licence was granted to Adani on the 29 March 2017 for extraction of water from the Suttor River at the point within the NGWS. The stated Authorised Purpose is: "Water supply for the Carmichael Coal Mine and Rail Project".

Water Input and Demand

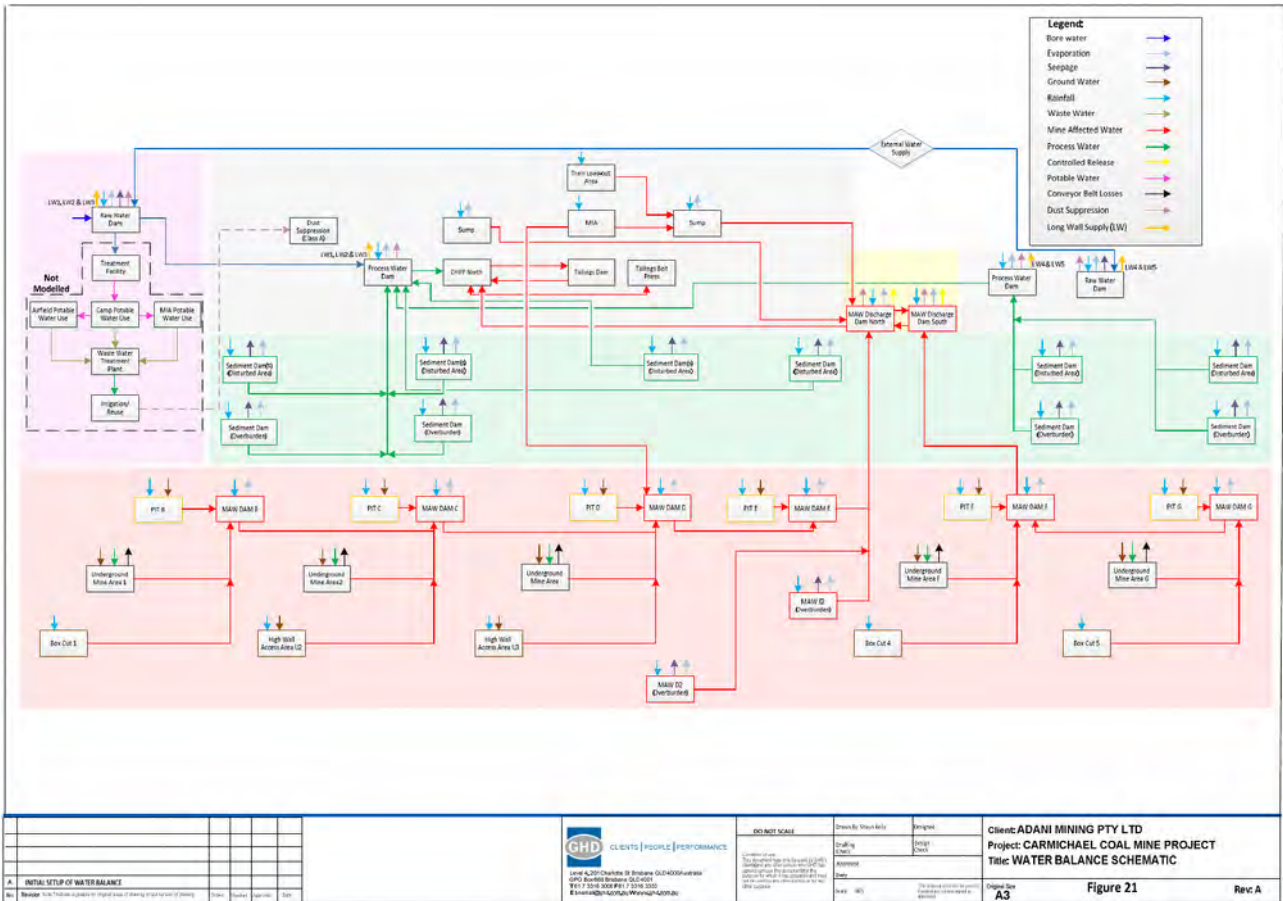
The water requirements of the mine, are roughly summarised below, and are best understood from review of the SEIS water management system schematic⁷, which is repeated and supported across the various SEIS and AEIS hydrology reports⁸. It must be noted that neither assessment included the infrastructure or water take now included in this NGWS. Taken from final Water Balance Schematic below, design elements take the primary water source from 'external sources' that flow into the Raw Water Dam, then the Process Water Dam, where from these points, amongst other things, supply both the Coal Handling Preparation Plants (CHPP) and the Long Wall Supply (1, 2, 3, 4, 5).

6 Australian Government, 'ABN Lookup 16 606 764 827', n.d., <https://abr.business.gov.au/ABN/View?abn=16606764827>.

7 GHD, 'Carmichael Coal Mine: K5 - 2013-11-14 SEIS V4.K5 - Updated Mine Hydrology Report', sPage 62.

8 Ausenco Services, 'Adani Carmichael Water Balance Model: Water Balance Modelling Review February 2014' (Adani, 28 February 2014), sPage 11.

Image 1. Adani SEIS K5 Figure 21 Water Balance Schematic



Water Inflows

According to the design above, the primary inputs that make up the external source, stem from: 1) External Water Supply; 2) Bore Water; and 3) Rainfall. A secondary source of input water is derived from Ground Water.

External Water Supply, is that derived from water sourced from local river flood harvesting systems, now known as the NGWS.

Rainfall (Clean Water) is restricted to that which falls within the mining lease, as all rain fall that falls outside of the lease to become overland flow will be diverted around the western, and highest elevation boundary to discharge points on the eastern side of the lease. As such the SEIS calculates this input to be minimal.

Bore Water was identified in early iterations of the EIS sought from a bore network to the East of the mining lease on Moray Downs Station Lot 662 on Plan SP282172 and then to the South East on Lignum Station Lot 1 on Plan SP164918. The notion of borewater extraction beyond the original EIS is nil. The SEIS and AEIS are silent to sourcing water from Bore Water. In September 2017 Adani submitted its Plan of Operations and within this a small 'advanced dewatering borefield' is planned. This field is made up of 40 dewatering bores and through a pipe system, will store water in a 250ML on-site dam. The bore field life span is only a few years until the ground water is depleted.

Ground Water calculations provided by the AEIS Water Balance Review echo the previous water balance models and validate the schematic. This shows Ground Water availability in the open cut pits and longwall mine panels over time decline as localised aquifers are depleted.

- The groundwater inflow to each of the 6 opencut pits ranges from 0 to 4.8 ML/d (4.8 ML/d is equal to 1.752 GL/y⁹. This is stated within the peer review report as: “Groundwater inflows to open cut pits (total inflow varies from 1,700 ML/year to 4,300 ML/year)”¹⁰
- The groundwater inflows to the underground mining area are calculated to show limited inflow for much of the operation. This is stated within the peer review report as: “Groundwater inflows to underground mines (total inflow varies from 0 ML/year to 5,700 ML/year)”¹¹.

Water Demand

- The CHPP demand peaks and maintains this peak for half of the mine life at 16 GL/y¹², see figure A2-4; This is stated within the peer review report as “The CHPP gross water requirement varies from 0 to 13,000 ML/year”¹³;
- Longwall mining requires water and is generally calculated at 2.25 ML/d for each longwall panel. This is stated within the peer review report as “The total longwall mining water demand varies from 0 to 3,285 ML/year (0 to 4 longwall panels being mined)”¹⁴;
- Water Storage dams for all water requirements (MAW, PW, RW, etc) is approximately 58 GL¹⁵;
- External Raw Water has been modelled to account for mine operations north and south of the Carmichael River. No information is provided as to where the Raw Water is taken from, other than the Water Balance Report noting extraction from the Belyando River and onsite collection;
- Construction water is required for a period of 8 years (2014-2022) and has been left out of the water balance, and it is stated this has been included within the water balance for dust suppression. Each year construction water is listed as 8,760ML/y¹⁶;

The water demand and water inflow points above clearly shows a short fall in onsite water, where this is taken up by the supply from the external water source. The SEIS water management system schematic clearly identifies the use of ‘external water’ and the use of a ‘bore field’. Later in the EIS this Bore Field is no longer required.

It is not the intention of this document to analyse the parameters of the Carmichael Coal Mine water balance. The information is provided to crystallise the fact:

1. Substantial water inputs are required to maintain the fundamental functions as part of extraction of coal at the Carmichael Coal Mine.
2. All historical and current water access planning for the Carmichael Coal Mine relies on external water supplies and that these waters are derived from flood harvesting from rivers and then piped to the mine site.
3. The bulk percentage of the External Water Supply as outlined throughout the complete EIS is that of the NGWS.

Within this schematic the NGWS is used directly for the CHPP and the Long Wall Mining and these are, according to the Significant impact guidelines 1.3: Coal seam gas and large coal mining developments - impacts on water resources (SIG)¹⁷ are for the purposes of water supply for use in

9 Ibid., sPage 31.

10 Ibid., sPage 92.

11 Ibid.

12 Ausenco Services, ‘Adani Carmichael Water Balance Model: Water Balance Modelling Review February 2014’, sPage 35.

13 GHD, ‘K2 - 2013-10-22 SEIS V4.K2 - Water Balance Report’, sPage 93.

14 Ibid., sPage 94.

15 Ibid.

16 GHD, ‘B - 2013-11-13 SEIS V4.B Updated Mine Project Description’, sPage 73.

the extraction of coal. Example 3 of the SIG identifies other things including the 'coal washing facility', where above shows the CHPP extensive water demand sourced from the external sources. Although the SIG is silent on long wall mining water issues, it is commonly known that underground mining is not possible without high water usage during the extraction processes.

Investigation by the Minister to the points above and the referring materials draws only one conclusion. The Carmichael Coal Mine is a very large mine and has been shown to cause negative impacts to endangered species habitat, ecosystems, and threatened ecological communities. It is proposed for the Desert Uplands Bioregion, where the name suggests - the region is climatically a low precipitation zone. Where the only proposed water supply for the Carmichael Coal Mine is water sourced externally and Adani has worked through its own structure to develop the NGWS. The NGWS water extraction point is over 100 Kms away from the mine at a location that supports water harvesting from three sub-catchments to ensure adequate water supply.

The developer is seeking to: 1) obfuscate the NGWS purpose and thus fails to provide any information related to the water resource, and through this seeks to mislead the EPBC Minister as to the nature of the project, and 2) through its own voluminous EIS clearly provide evidence of the external water supply, and thus the NGWS, is clearly required for the primary purpose of extraction of coal.

The EPBC and SIG outlines the need to consider cumulative impacts that includes the future, stated as "reasonably foreseeable development". This measure requires the Minister to include:

- The Project China Stone coal mine as part of the NGWS. The Macmines Project China Stone EIS was first made public on the 25 July 2015 and on the 8 March 2018 the EIS was accepted as final by the Queensland Coordinator General¹⁸. Project China Stone, through the EIS looks to source 12,500 ML per annum from external sources. Without naming the NGWS, it refers to "schemes being proposed to harvest water" and goes onto name the Belyando/Suttor River. Another telling sign of the water use of the Project China Stone, as with the Carmichael Coal Mine, is the required volume of water for coal extraction. At its peak the Project China Stone Coal Handling Preparation Plant requires 7,132 ML per annum and the underground long-wall is another 1,251¹⁹.
- A variation of this can be found within the Waratah Coal Alpha North Coal Project Initial Advice Statement (IAS), states more clearly, where its development schedule is based on access to and the development of the NGWS for water pipe connection²⁰. Although no water data is provided, the IAS provides that the project will development 40Mt per annum of product coal, and provides ROM figures for underground mining from various mine section. The entire project has the production capacity of 80Mt per year²¹. Taking into consideration the close proximity and mean annual rain figures, together with water utilisation to coal yield ratios of the Carmichael Coal Mine and Project China Stone, the Warratah project along with the other two will place considerable water demand via the NGWS.

Water Related Impacts

17 <https://www.environment.gov.au/system/files/resources/d078caf3-3923-4416-a743-0988ac3f1ee1/files/sig-water-resources.pdf>

18 <http://statedevelopment.qld.gov.au/assessments-and-approvals/china-stone-coal-project.html>

19 Table 13-1 Median Annual Water Balance Hansen Bailey, 'China Stone Coal Project. Surface Water 13' (MacMines Austasia Pty Ltd, 2015), vol. 13, <http://statedevelopment.qld.gov.au/assessments-and-approvals/china-stone-coal-project.html>.

20 3.3.1 Mine Schedule Waratah Coal Pty Ltd, 'Alpha North Coal Mine Project Initial Advice Statement' (Waratah Coal Proprietary Limited, 1 April 2018), 41, http://epbcnotices.environment.gov.au/_entity/annotation/5ddacf12-5e44-e811-ad33-005056ba00a7/a71d58ad-4cba-48b6-8dab-f3091fc31cd5?t=1525742043123.

21 1.4 Overview Waratah Coal Pty Ltd, 9.

The Adani Carmichael Coal Mine EIS GHD updated mine hydrology report acknowledges that “No catchments were considered outside of the site boundary”²² and goes on to outline the changes to the existing waterways (see image here²³)

The NGWS development was first publicly exposed on the 22 December 2014, through an advertised icngateway tender website. The project owner and expression of interest (EIO) are both stated as belonging to Adani Mining Pty Ltd²⁴. Section 2.2 provides the scope of the EIO to meet water demand for the: 1) Construction stage, and 2) operational stage. This section goes on to state the intention of the NGWS, including that for the Carmichael Coal Mine Project (CCMP):

“Water is required to be supplied from the Scheme for the following purposes:

- Construction water for off-site infrastructure to be constructed separately to support the CCMP, including rail, an airport, mine workers accommodation, and a mine access road with associated quarries;
- Development of the North Galilee Basin Rail (NGBR) project – a connection to the Port of Abbot Point and within the GBSDA;
- Development of the CCMP; and
- Operation of the CCMP.”²⁵

Importantly this section goes on to articulate the works, connection and purpose of the water. A map is provided, which in most cases is a mirror of and shows the same intent of the current EPBC application document map. Of particular interest is in relation to ‘Disney Dam’, where it says”

“Stage B is proposed to connect Disney Dam with the CCMP site”.

Stage B of the EIO goes on to state:

“Package 3: Storage CP: Moray Station Flood Harvesting dam. New 5 GL dam with intake facility and pump station”.

The relevance of these points returns to Water Demand section above. The Carmichael Coal Mine is 100% reliant on water from the NGWS extraction points for the construction and most importantly the operation of the mine. That being the extraction of coal.

As noted in the Situation section above from inception Adani have planned for the off-site external water to the operation of the mine, and for that water to be sourced from reliable catchments within the region. Progression to fulfil this plan has seen the following preliminary water permits and licence secured:

1. Water Permit 617345 under the Water Act 2000, issued 27 April 2017 to Adani Infrastructure Pty Ltd, allows the taking of water from Belyando River on or adjacent to land described as Lot 662 on SP106939 and Lot 5 on SP278705 (Moray Downs Station) to a maximum volume of 250 ML at a maximum instantaneous extraction rate of 35 L/s (3.02 ML/d), for the purpose of construction.
2. Water Permit 614017 under the Water Act 2000, issued 19 March 2015 to Adani Mining Pty Ltd, allows the taking of water from Mistake Creek on or adjacent to land described as Lot 637 on PH1980 (Elgin Downs Station) and Lot 4 on SP116046 (Disney Station) to a maximum volume of 8,050 ML, for the purpose of construction.
3. Water Licence 617268 under the Water Act 2000, issued 29 March 2017 to Adani Infrastructure Pty Ltd, allows the taking of water from Suttor River with the point of take on or adjacent to Lot 3 on SP278559 (Belyando Junction Station) to a maximum volume of

22 GHD, ‘Carmichael Coal Mine: K5 - 2013-11-14 SEIS V4.K5 - Updated Mine Hydrology Report’ (Adani, 14 November 2013), sPage 47.

23 Ibid., sPage 112.

24 Adani Mining Pty Ltd, ‘Expression of Interest North Galilee Water Scheme. Carmichael Mine Project.’ (ICNGateway, 22 December 2014), <https://gateway.icn.org.au/project/2910/carmichael-mine-project?st=projects&psid=1529562056>.

25 Adani Mining Pty Ltd, 5.

12,500 ML at a maximum instantaneous extraction rate of 11,600 L/s (1,002 ML/d), for the purpose of water supply for the Carmichael Coal Mine and Rail Project. Water will be taken from the Suttor River and transferred to an off-stream storage via the Belyando River Anabranch.

To highlight the commonalities held between the 2014 EOI NGWS and the 2018 EPBC NGWS, two maps below display:

1. The location of Stage A and Stage B to be greatly aligned;
2. The Belyando Junction extraction point to be the same;
3. The route of the pipeline is greatly aligned, but more defining is the primary start location and end location are the same.

Noted previously, Coast and Country reiterates its concern that is is the intention of the Adani EPBC application to obfuscate the true impact the NGWS will have on the water resource through extraction from the three locations, as seen above in the current licensing and permits, and the catchments, noted below.

Map 1: EOI Figure 1 NGWS proposed staging²⁶

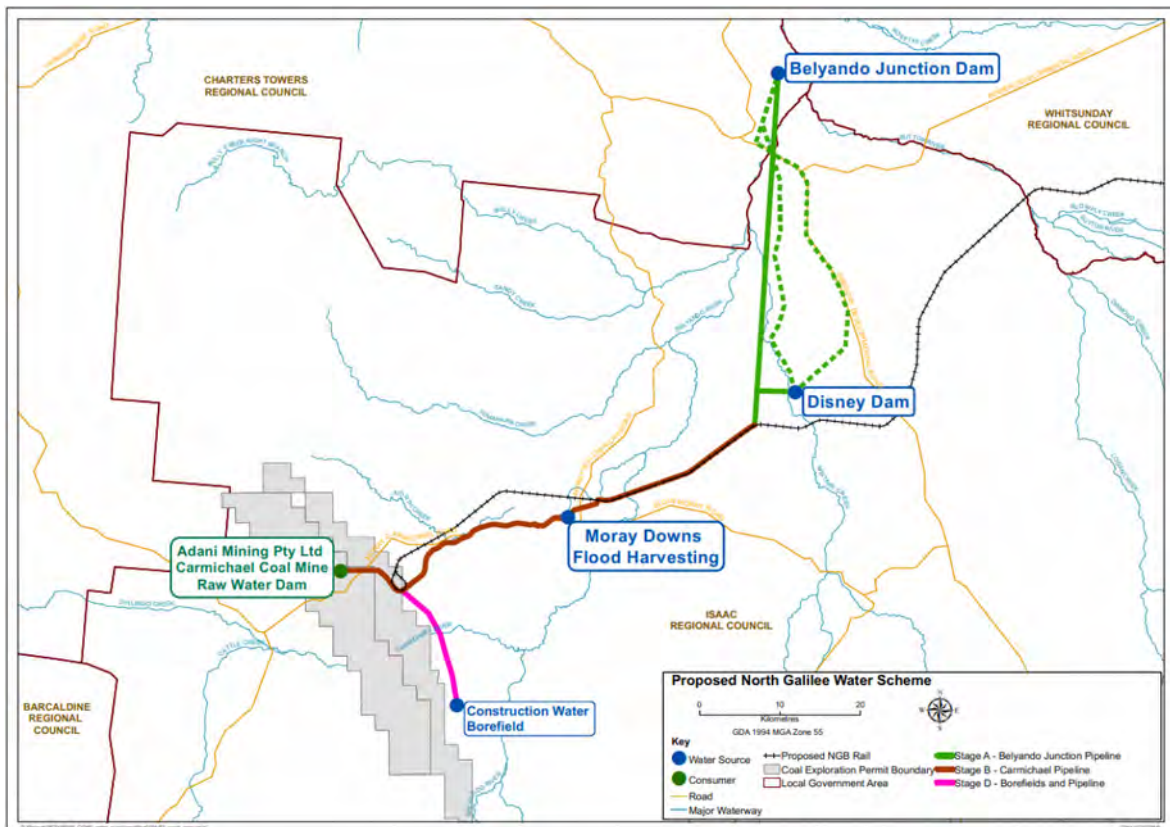
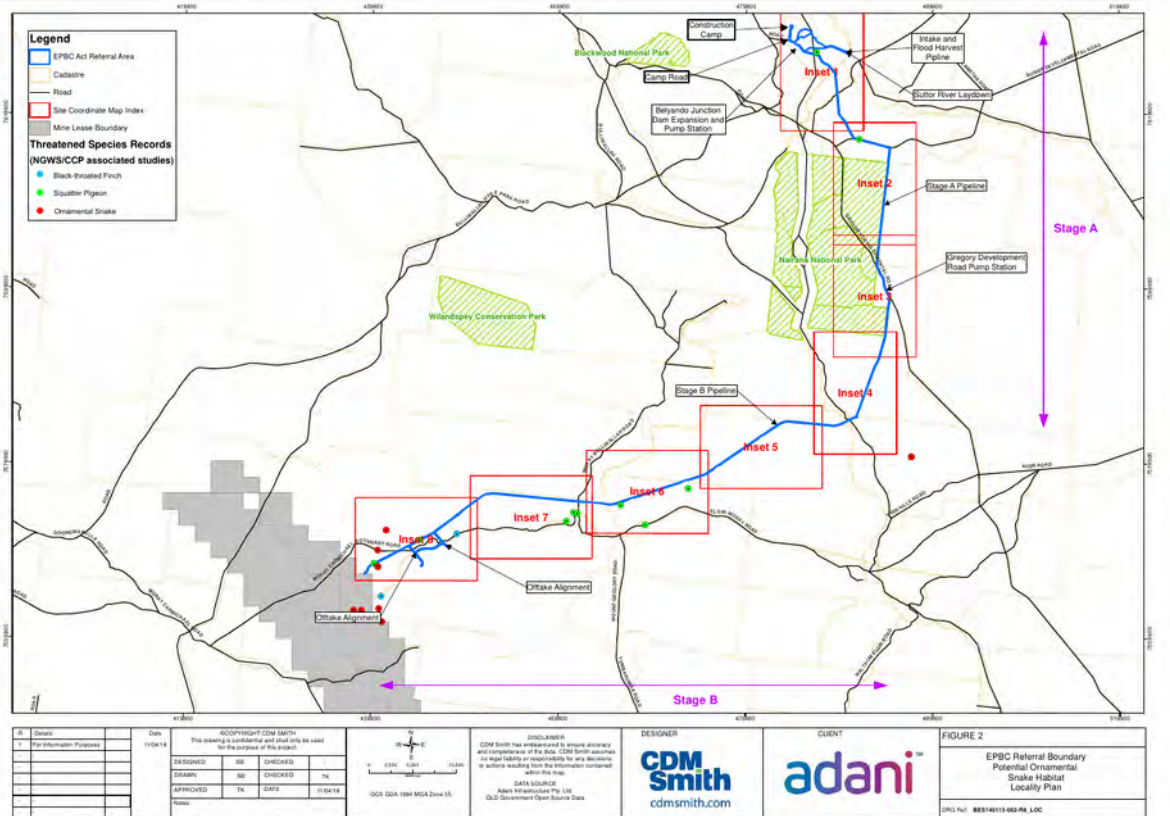


Figure 1: NGWS proposed staging

Map 2: EPBC Application Figure 2 Potential Ornamental Snake Habitat Locality Plan²⁷



In summary, the EPBC application fails to:

1. Reference or map the water extraction point at Mistake Creek (Disney Dam) and the water pipeline inter-connector.
2. Reference or map the water extraction point at Belyando River and the water pipeline inter-connector.

Through omission of the points above, the exact nature of the EPBC application is misleading; Adani claim the NGWS is not to be part of a large coal mine development, in doing so the application is silent on the fact that it will impact the water resources within the following downstream catchments:

1. The Sutor River – the Lower Sutor River²⁸ section between the Belyando Sutor confluence and the Burdekin Falls Dam;
2. Mistake Creek – the lower Mistake Creek²⁹ section flowing through the Nairana National Park;
3. Belyando River – the Belyando Floodplain the upper 50 km section of the Belyando River³⁰ before the confluence with the Sutor River.

27 CDMsmith, 'Referral - Attachment_b_fig_2_os_location_and_records' (Adani, n.d.), fig. 2, http://epbcnotices.environment.gov.au/_entity/annotation/bcd7fc3e-db6a-e811-817f-005056ba00a7/a71d58ad-4cba-48b6-8dab-f3091fc31cd5?t=1529566641712.

28 Queensland Department of Environment and Heritage, 'Lower Sutor River (Burdekin) Water Quality Improvement Plan Catchment — Facts and Maps', accessed 6 March 2017, <https://wetlandinfo.ehp.qld.gov.au/wetlands/facts-maps/wqip-lower-sutor-river-burdekin/>.

29 Queensland Department of Environment and Heritage, 'Mistake Creek (Burdekin) Water Quality Improvement Plan Catchment — Facts and Maps', accessed 6 March 2017, <https://wetlandinfo.ehp.qld.gov.au/wetlands/facts-maps/wqip-mistake-creek-burdekin/>.

30 Queensland Department of Environment and Heritage, 'Belyando Floodplain (Burdekin) Water Quality Improvement Plan Catchment — Facts and Maps', accessed 6 March 2017, <https://wetlandinfo.ehp.qld.gov.au/wetlands/facts-maps/wqip-belyando-floodplain-burdekin/>.

The Suttor River extraction can not be seen in isolation from approved flow reductions caused by the Carmichael Coal Mine. Historical records show that in times of regional scale multi-year drought, the Doongmabulla Springs provide base-flow to the Carmichael River, that maintains valuable flow and maintenance to the water holes and refugia into the Belyando and Suttor Rivers. Through the Carmichael Coal Mine EIS approval process, a base-flow water reduction was granted. That is, due to dewatering processes on the norther and south side of the Carmichael River, less water will flow into the Carmichael – Belyando system. This, along with the three NGWS extractions will cause an impact to ecosystems and greater impact in times of regional scale drought. Most concerning is the lack of assessment and modelling of the combined four Adani water reducing factors will have on the water resource. Together and including modelled climate change scenarios (longer drought periods, general reduction in both small and localised rainfall events, increased number of days over the average temperature, and changes to the seasonal rainfall events) the Minister should consider long term impacts to the environmental flows and to the sustainability of the existing farms to be impacted by the four water reduction factors of the NGWS and Carmichael Coal Mine combined.

Users and Wetlands

The Adani proposed NGWS and its Suttor River, Mistake Creek and Belyando River water extraction poses a serious risk to both ecosystem health through reduced and impacted environmental flows, and impacts to pastoral properties.

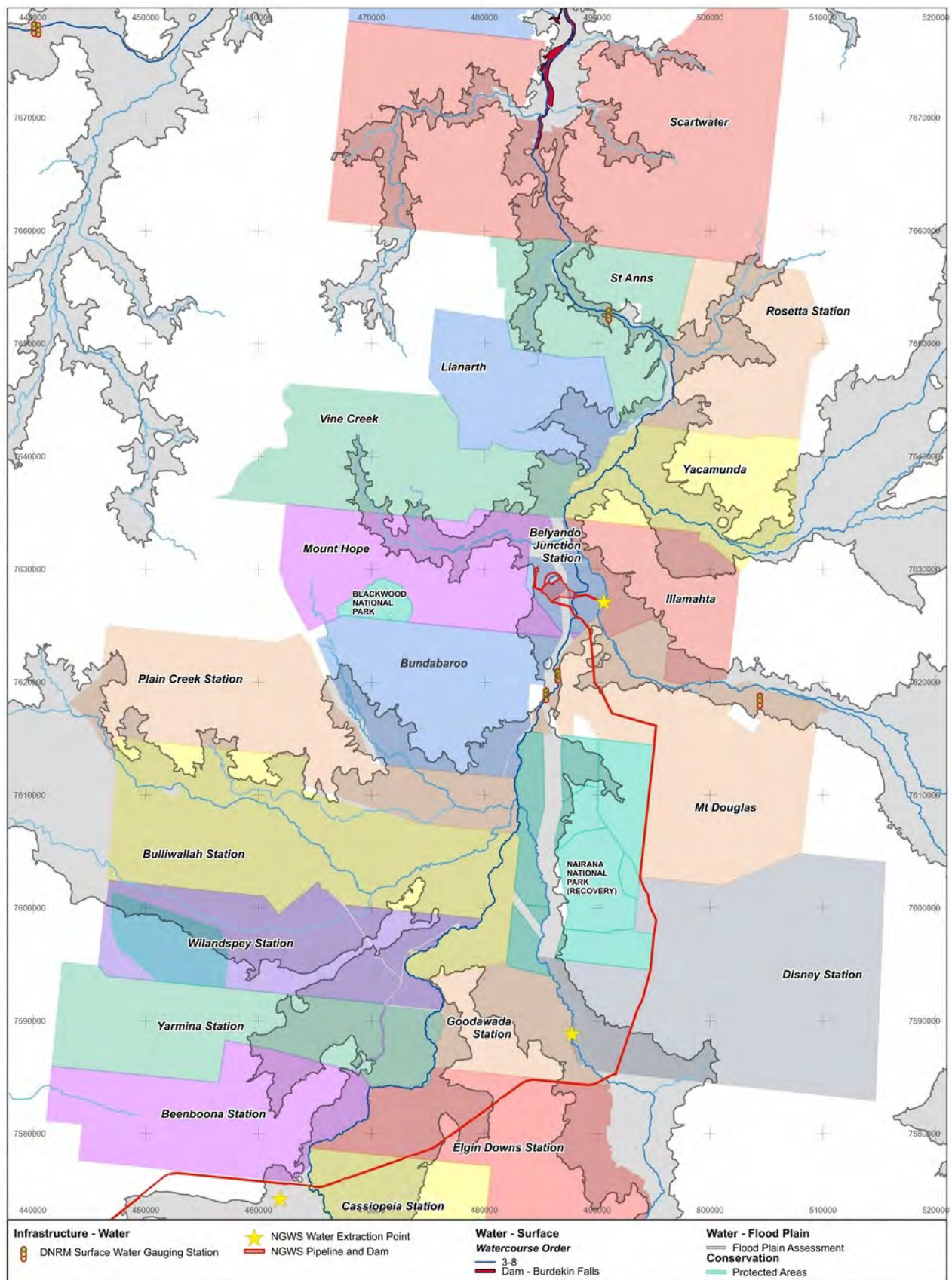
In total 18 low intensity cattle grazing properties and 2 higher intensity cattle properties are situated downstream from the proposed water extraction points, and all of these properties utilise river water as a business input. Some of the properties use the river water as house water. In dry times, following depletion of other on-site water sources, river water is used as house drinking water³¹. Downstream from the Suttor River extraction point, river water is supplemented with rain water much of the time or is used 100% exclusively for house drinking water³².

The map below displays the 20 rural properties that are downstream from the proposed Adani extraction point that form the impact zone for the NGWS. The map also displays the Queensland flood overlay.

31 Landholder, DaviesD, Personal Communication, 2018 2012.

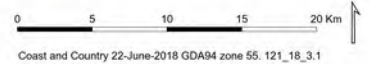
32 Scartwater Landholder, 27 March 2018.

Map 3: Carmichael Coal Mine NGWS Downstream Rural properties and Floodplain Overlay



Carmichael Coal Mine NGWS: Downstream Rural Properties and Floodplain Overlay

Data source: Qld Government Data Portal, Australian Government EPBC



Coast and Country 22-June-2018 GDA94 zone 55. 121_18_3.1

A review of the Queensland government groundwater bore database shows the limited extent of bore use by the properties that rely on the river water. Limited to no bore use is due to the lack of accessible water aquifers or due to the quality and quantity of available groundwater. As such these properties are reliant on two sources of water:

1. Rainwater and on property overland flow that is harvested through dams;
2. River water that is harvested through flooding lateral overland flow to fill dams, man made in-stream waterholes or through natural waterholes with stock access.

For this reason, access to reliable water resources is paramount for the success of these businesses.

In low flow periods and where flow remains within the banks of the system, water pools form, often as permanent water holes with support of groundwater baseflow. These pools are used by graziers for stock use during dry times. These pools are refugium for all forms of life, include insects, fish and other inland water species, localised and migratory birds, and mammals. These pools are also used by graziers for non stock needs and form part of the connection to life in tough dry times. Replenishment of refugia is key to the survivals of supported ecosystem.

No assessment of these in-stream permanent water holes in the Belyando, Mistake Creek and Suttor River has been undertaken. Only anecdotal evidence through conversations with farmers are the location of these water holes know. Identification of these waterholes should be part of the EIS process required for this EPBC controlled action decision.

In higher flow periods and where water breaks the banks of the system, water spreads out laterally over the flood plain. This water, dependant on the flow strength, spreads to both man made surface water dams, and natural wetlands, including gilgia, that maintain the ecosystems health.

During all flow periods, the river is part of plant seed dispersal (both native species and weeds), and supports species migration. Species rely on the river system as a food system, habitat, and provides protection through functional riparian zone to support species movement.

High Ecological Significance wetlands

Many natural wetlands and water related features are located downstream from the three extraction points, of particular interest are Queensland Matters of State Environmental Significance - High Ecological Significance wetlands³³ (HES):

1. Suttor River – 16 HES value wetlands that are either in-stream or flood plain dependant water bodies;
2. Mistake Creek – traverses roughly 20 Km through the middle of Nairana Nation Park, and supports 7 HES value wetlands that are either in-stream or flood plain dependant water bodies;
3. Belyando River – 12 HES value wetlands that are either in-stream or flood plain dependant water bodies; At its northern reach it also traverses rough 9 Km of the Nairana Nation Park, forming its western boundary. In times of flood, the river inundates the full 20 Km of Nairana Nation Park.

The table below represents those HES wetland downstream from the Suttor River extraction. These wetlands represent water bodies the Queensland Government has validated for their importance as Matters of State Environmental Significance. The table provides the wetland ID (FID_WPA) as provided through the dataset, and provides supporting information such as the geographic coordinates, and the property that it is located within. The naming convention utilising a

33 Queensland Government, 'Queensland Spatial Catalogue : Matters of State Environmental Significance - High Ecological Significance Wetlands - Queensland', n.d., <http://qldspatial.information.qld.gov.au/catalogue/custom/detail.page?fid={399493AE-5F42-4051-A16E-F9F1B6C1C25B}>.

common name of the water body, and an arbitrary name assigned for the purpose of this submission.

Table 1: Suttor River extraction and matters of state environmental significance - High ecological significance wetlands

FID_WPA	Property	Wetland Name	x	y
1905	State Land	Longweed Lagoon	146.864991356	-21.3955294267
1028	Vine Creek	Wetland 1	146.87092658	-21.3823065433
1736	Yacamunda Station	Wetland 1	146.890717413	-21.3750562741
5569	Yacamunda Station	Wetland 2	146.888010525	-21.3701754612
2489	Yacamunda Station	Wetland 3	146.910349295	-21.340489975
4781	State Land	Wetland 4	146.886705822	-21.3608863537
305	St Anns	Wetland 1	146.879858766	-21.1813312218
1484	St Anns	Wetland 2	146.878367518	-21.178926728
247	St Anns	Blackwater Lagoon	146.850251766	-21.1745852262
2599	St Anns	Wetland 4	146.873828326	-21.1697162814
4626	Scartwater	Wetland 1	146.87167328	-21.1665612871
2763	Scartwater	Wetland 2	146.879347209	-21.1587693318
3606	Scartwater	Scartwater Aggregation	146.861751021	-21.1152951958
166	Scartwater	Scartwater Lagoon	146.869436913	-21.1023895388
992	Scartwater	Wetland 5	146.86527205	-21.0869535968
4388	Vine Creek	North Longweed Lagoon	146.862549718	-21.3826346125

The table 2 below represents HES wetlands downstream from the Belyando River extraction point and the Mistake Creek extraction point, and other non HES wetlands that are of importance to grazing properties.

Table 2: Belyando and Mistake Creek and matters of state environmental significance - High ecological significance wetlands, and other water resource locations

FID_WPA	Name	x	y
	Wilandspey - Waterhole 1	146.787773441	-21.7133010926
	Nairana NP - Six Mile Waterhole	146.870624486	-21.6041723133
3895	Nairana NP - Waterhole Permanent	146.843345638	-21.6265917177
976	Nairana NP - Waterhole	146.874602769	-21.5730678488
	Wetland Ten Mile Lagoon 3	146.856878115	-21.6612619343
	Wetland Ten Mile Lagoon 2	146.856148714	-21.6658149012
	Wetland Ten Mile Lagoon 1	146.859503659	-21.6647516544
2889	Nairana NP - Waterhole	146.848291403	-21.6836156964
	Beenboona - River Waterhole Permanent	146.675010425	-21.8884543743
2009	Beenboona - Wetland	146.668714459	-21.8733179268
1600	Yarmina - Waterhole 1	146.737673023	-21.8131989642
	Bulliwallah - Waterhole 3	146.802114335	-21.7045098602
5275	Bulliwallah - Waterhole 2	146.810789728	-21.7020805771

2600	Bulliwallah - Waterhole 1	146.786733389	-21.7235994642
3251	Wetland	146.73519892	-21.8596550768
3156	Wetland	146.872461125	-21.5219370476
4172	Wetland	146.893451876	-21.4589375046
5597	Wetland	146.927607722	-21.4707258791

Suttor River Extraction – Downstream

Situation:

- There are 9 rural properties downstream from the Suttor River extraction point before the Burdekin Falls Dam area. They are:
 - Belyando Junction
 - Illamahta
 - Mount Hope
 - Rosetta Station
 - Scartwater
 - St Anns
 - Vine Creek
 - Yacamunda
 - Queensland Stock Route
- The Suttor River extraction point is upstream from Belyando Gauging Station (Belyando and Gregory Highway Station) and just downstream from the St Anns gauging station;
- The Belyando Junction property holds various Water Licences, where the primary licence is for 5570 ML per annum. Where extraction is only available water once the rivers daily flow exceeds 14688 ML per day³⁴.
- St Anns River Gauging Station is downstream from the Belyando Junction extraction point, and includes the flow and gauging throughput from the: 1) Belyando River from the Belyando Crossing Gauging Station and the, and 2) the Suttor River at Bowen Developmental Road Gauging Station.

Coast and Country would like raise to the attention of the Minister the threat to the Scartwater Aggregation, a wetland within the Directory of Important Wetlands in Australia (DIWA), from the Suttor River water extraction. The Scartwater Aggregation is just 50 Kms downstream from the extraction point.

Previous Assessments

Section 1.14 of the Adani EPBC application relies the environmental impact assessment undertaken for its water license, where it states:

Grant of a Water Licence from the Strategic Reserve of unallocated water in Sub-catchment E of the Burdekin Basin (Suttor River) – extracting 12.5 GL per annum (reference 617268). The assessment by the Queensland Department of Natural Resources, Mines and Energy (DNRME) involved targeted public consultation (including with downstream users), assessment of potential riparian impacts, assessment of water source and demand, and modelling of the take against environmental flow objectives.

³⁴ Water Licence ID 96640A (including: 96640A; 96641A; 96642A; 96755A; 96756A). Condition: 2.44/The taking of water under this authorisation is permitted only when the flow of water exceeds 14,688 megalitres per day at the Department's Gauging Station Suttor River at St Anns (120303A) or at such other times as the chief executive may permit.; 2.69/The daily volumetric limit that may be taken under this licence is 478 megalitres.

In so much the Adani EPBC application relies on a Queensland Government 2016 Department of Natural Resources and Mines report titled: Targeted environmental review for a specification of a water product for the release of unallocated water from the strategic reserve in the Belyando-Suttor subcatchment area E of the Water Plan (Burdekin Basin) 2007³⁵ (DNRM Environment Review). In making this statement it infers the EPBC Minister should take this assessment for its own. Review of the DNRM Environment Review shows flaws that should cause concern for the Minister and the protection of EPBC related matters.

The DNRM Environment Review assessed the potential risk to ecological processes of downstream floodplain lagoons from DNRM's proposed water product. The assessment focused on the threat to "maintaining refugia associated with waterholes and lakes", specified in the Water Plan (Burdekin Basin) 2007 as a general ecological outcome for watercourses of the Belyando-Suttor subcatchment E (Queensland Government, 2017, p. 10-11). Also, the Burdekin Basin Water Plan 2007 specifies that environmental management rules must consider "replenishment of refuge pools", and "lateral connectivity between rivers in the plan area and their adjacent riverine environments including floodplains".

The value of refugial lagoon habitat can be threatened by the hydrological phenomena of reduced frequency of filling, and increased duration of the interval between spells of inundation, which the DNRM Environment Review termed 'spell'.

The DNRM Environment Review did not assess the risk to instream (i.e. within the channel) ecological processes, on the basis that the passflow threshold of 2,592 ML/d was high enough that instream processes would not be impacted any more than they are under existing entitlement conditions. This assumes that 'instream' flows are those that occupy the lower part of the channel, because a flow of 2,592 ML/d would be largely contained within the channel, although some low lying lagoons and anabranches could become connected at flows of this rate. Information presented below calls into question this approach.

DNRM Environment Review assessed impacts to only four wetland areas (lagoons) downstream of Belyando Junction, prioritised on the basis of literature review, known conservation significance, and representativeness. It is important to understand that these are not the only ecologically valuable wetlands in the system, nor are they the only valuable ecological assets. In fact there is little to no information on the conservation significance of the four water holes.

DNRM Environment Review did not include a description of the IQQM modelling assumptions used. To determine the surface area of each wetland over time, the model must have included a daily water balance for each waterhole. This would have required assumptions about losses in the form of evaporation and seepage. The DNRM Environment Review acknowledged the approximate nature of the estimates of cease to flow level, but they were based on best available knowledge. It is recommended to the EPBC Minister that these figures are known, and the EPBC applicant undertake such research as part of the EIS, and it not limited to just these four water bodies but all HES water resources impacted by the project,

The modelling results indicted that for the two waterholes at the highest elevations in the landscape, Longweed and Blackwater lagoons, the scenario of DNRM's proposed water product (Adani Water Licence 617268 with the condition of a passflow threshold of 2,592 ML per day), compared to the current scenario, would result in a 25% and 19% (respectively) reduction in the frequency of filling events, a 29% and 25% (respectively) increase in the mean duration of spells between filling events, and 84% and 32% (respectively) increase in the maximum duration of spells between filling events.

The assessment looked to quantify the risk to the impacted wetlands and ability to maintain ecosystem health and maintenance of refugial quality outcomes. The two waterholes at the highest

35 Bernie Cockayne, David Sternberg, and Gary Luck, 'Targeted Environmental Review for a Specification of a Water Product for the Release of Unallocated Water from the Strategic Reserve in the Belyando-Suttor Subcatchment Area E of the Water Plan (Burdekin Basin) 2007' (Department of Natural Resources and Mines, August 2016).

elevations in the landscape, Longweed and Blackwater lagoons, following the implementation of the Adani water resource impact were at high risk, with the number of years at high risk increased from ~32% to ~40% for Longweed Lagoon and ~36% to ~45% for Blackwater Lagoon.

For both lagoons this represents a significant shift in the wetlands ability to maintain proper ecological function. Particularly in times of sustained drought, and the inclusion of the Adani extraction these water holes are at high risk of failing to maintain ecosystem function. Such impacts will result in degraded services to both the environment and farm water utility and general biodiversity function.

It should be noted at this point the DNRM Environment Review did not consider long term impacts from climatic change to the Belyando Suttor: modelling did not factor in the 60 year life of the water licence against the reduced system water resulting from climate change. Even without this fundamental inclusion, in real terms this higher level of risk will result in:

1. Lower potential of the water holes to provide valued water for farm business maintenance;
2. Higher potential of water holes going dry or water toxification, impacting on availability of water reliant vegetation, birds and animals, including EPBC listed species;
3. Higher potential of water holes going dry or the water toxifying, impacting on access to water and food sources by migratory species supported through EPBC conventions.

The DNRM Environment Review regarded the modelled hydrological changes at the two higher elevation waterholes to represent the potential risk of all the downstream lagoon aquatic ecosystems, and other long-lived floodplain water-dependent ecosystems such as floodplain vegetation communities, including some of concern and endangered remnant regional ecosystems. It is important to note the assessment did not consider the exact nature of the changes to the hydraulic function to the floodplain caused by the Adani water extraction. It did not assess impacts to vegetation and birds and animals, including EPBC listed species or migratory species supported through EPBC conventions.

Reliance on Poor Assessment

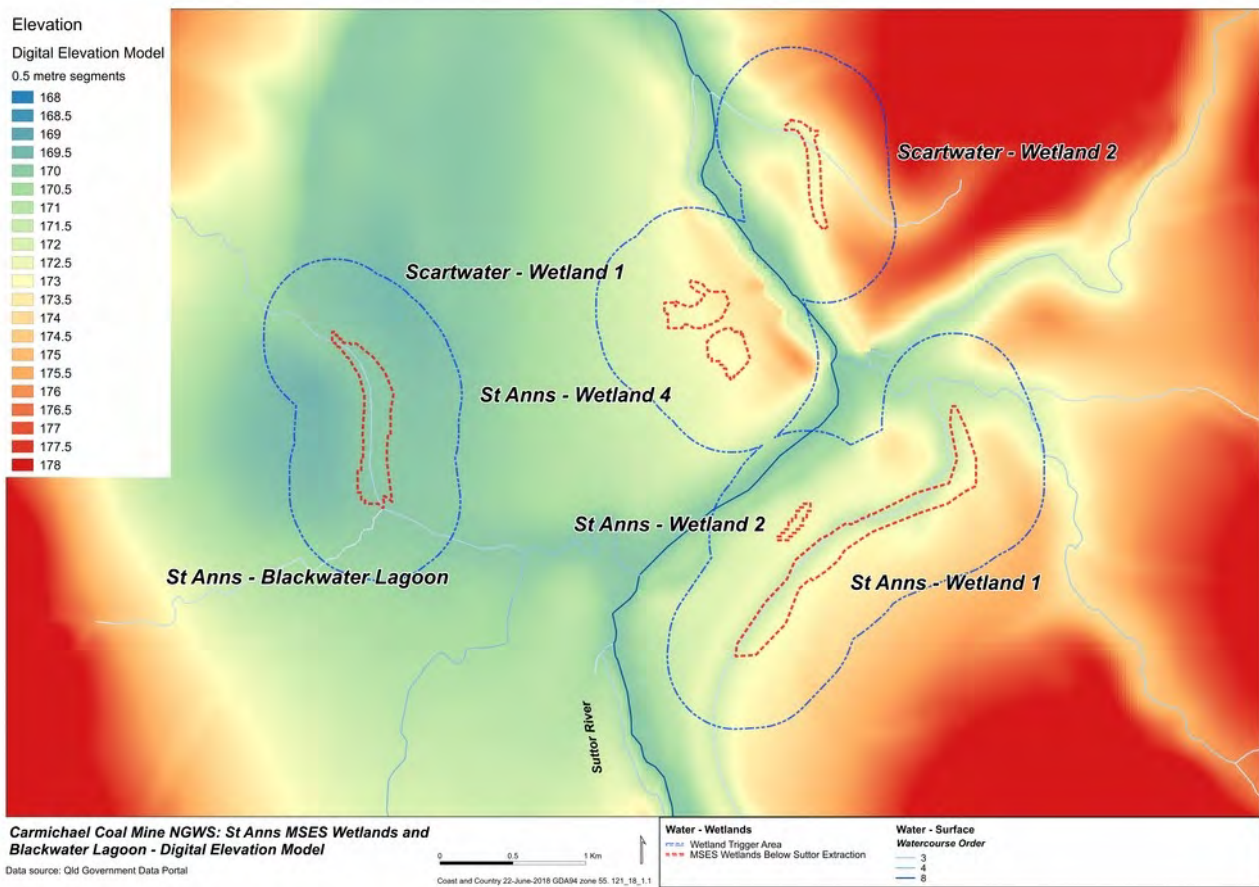
As mentioned above a foundation of the DNRM Environment Review is based on a selection of waterholes based on a set of the criteria that included 'highest elevations' as a practice of limiting research scope. From this Blackwater and Longweed Lagoons along with two other wetlands were studied. A independent review by Coast and Country has shown this foundational activity to be incorrect, and in doing so, renders potential for 15 HES wetlands without proper consideration and at risk, including the DIWA's Scartwater Aggregation.

One example identified in map 5 below highlights this error through analysis using SRTM Digital Elevation Model product³⁶ of the Suttor River, Blackwater Lagoon and a cluster of wetlands on St Anns Station and Scartwater Station. The map displays 0.5 metre segments of elevation to denote land form, including the low lying interconnection between the main Suttor River and the Blackwater Lagoon. It also displays the high bank to the east of St Anns Wetland 4 and Scartwater Wetland 1 to reveal these wetlands are perched and elevated metres above Blackwater Lagoon. Through this evidence, it is clear that recharge and flushing events of the St Anns Wetland 4 and Scartwater Wetland 1 will require a higher water level within the Suttor River than that modelled for Blackwater Lagoon.

In raising this issue it is clear these wetlands will suffer greater impact than modelled for Blackwater Lagoon. It is clear the environmental values of this water resource were not considered in the 2016 DNRM assessment. These wetland may support EPBC listed species.

36 Queensland Government, 'Queensland Spatial Catalogue : Queensland Government Digital Elevation Model - 25metre - Burdekin Catchment - Data Package', n.d., <http://qldspatial.information.qld.gov.au/catalogue/custom/search.page?q=%22Digital%20elevation%20model%20-%2025metre%20-%20Burdekin%20catchment%20-%20data%20package%22>.

Map 5: NGWS St Anns MSES Wetlands and Blackwater Lagoon - Digital Elevation Model - 25metre - Burdekin catchment.



Reliance on Limited Scope

The Adani EPBC application relies on a limited assessment within the DNRM Environment Review and other referenced reports to address its impacts to the water resource. A key gap within the DNRM Environment Review is the failure to address changes to the hydraulic function of the floodplain cause by the Adani water extraction. The limited assessment of four water bodies, provides no scope to quantify impacts to:

1. Surrounding ecosystems that rely on lateral movement of water across the floodplain, to replenish gilgia, maintain seed dispersal and the provision of deep soil moisture and aquifer saturation;
2. Grazing pasture that rely on lateral movement of water across the floodplain to maintain grass growth when flood water from higher catchment rainfall moves down the system.

Ornamental Snake habitat

The example below provides some understanding of this impact through a simple analysis of the Ornamental Snake habitat and its extent within the known floodplain boundaries.

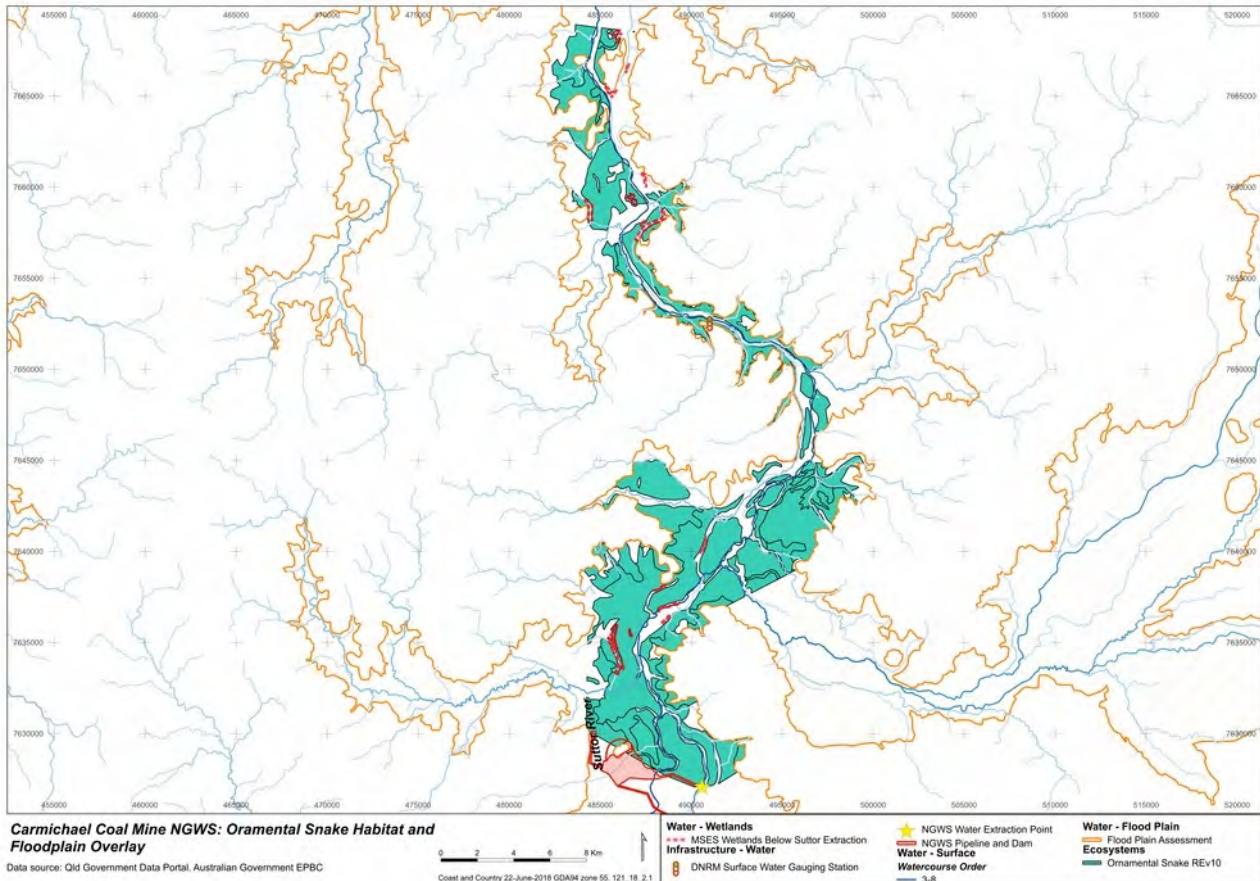
The search compared known habitat as stated in the SPRAT profile, being those found to have cracking clays, and was extrapolated against the Queensland floodplain assessment overlay. Based on Queensland regional ecosystems (RE) five REs were used in this example: 11.4.3, 11.4.6, 11.4.8, 11.4.9, 11.3.3, 11.5.16³⁷.

37 Department of the Environment and Commonwealth of Australia, 'Denisonia Maculata — Ornamental Snake - Species Profile and Threats Database', n.d., http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1193.

The extrapolation used an arbitrator bounding box applied to limit the extent of the floodplain assessment overlay to between the Adani proposed Suttor River water extraction point and the northern river boundary of Scartwater Station. Where lower order streams entered the primary river floodplain, the feature was truncated. This methodology provides only a simple characterisation of the probable extent in certain conditions

Roughly 139 square Km of potential Ornamental Snake habitat will be impacted to changes in the floodplain by the Adani Suttor River water extraction. It is unclear the extent and nature of the impact, and is best addressed through further ongoing assessment and modelling. It is recommended the EPBC Minister require this work to be undertaken through the proposed EIS.

Map 6: Carmichael Coal Mine NGWS Ornamental Snake Habitat and Floodplain Overlay



Changes to the floodplain from the NGWS are unknown and have not been quantified by the developer and no information is available to this within the EPBC application. The 139 square Km potential Ornamental Snake habitat is likely to be impacted by the NGWS. As such, it is also likely that such impacts will be caused to other MNES listed EPBC species. No assessment has been undertaken to quantify the impacts to MNES caused by changes to the Suttor River water flow in flood times, or times where the water within the channel exceeds channel banks and water moves laterally across the landscape.

Black Throated Finch

As with above, the example below provides some understanding of impact through a simple analysis of the Black Throated Finch habitat and its extent within the known floodplain boundaries.

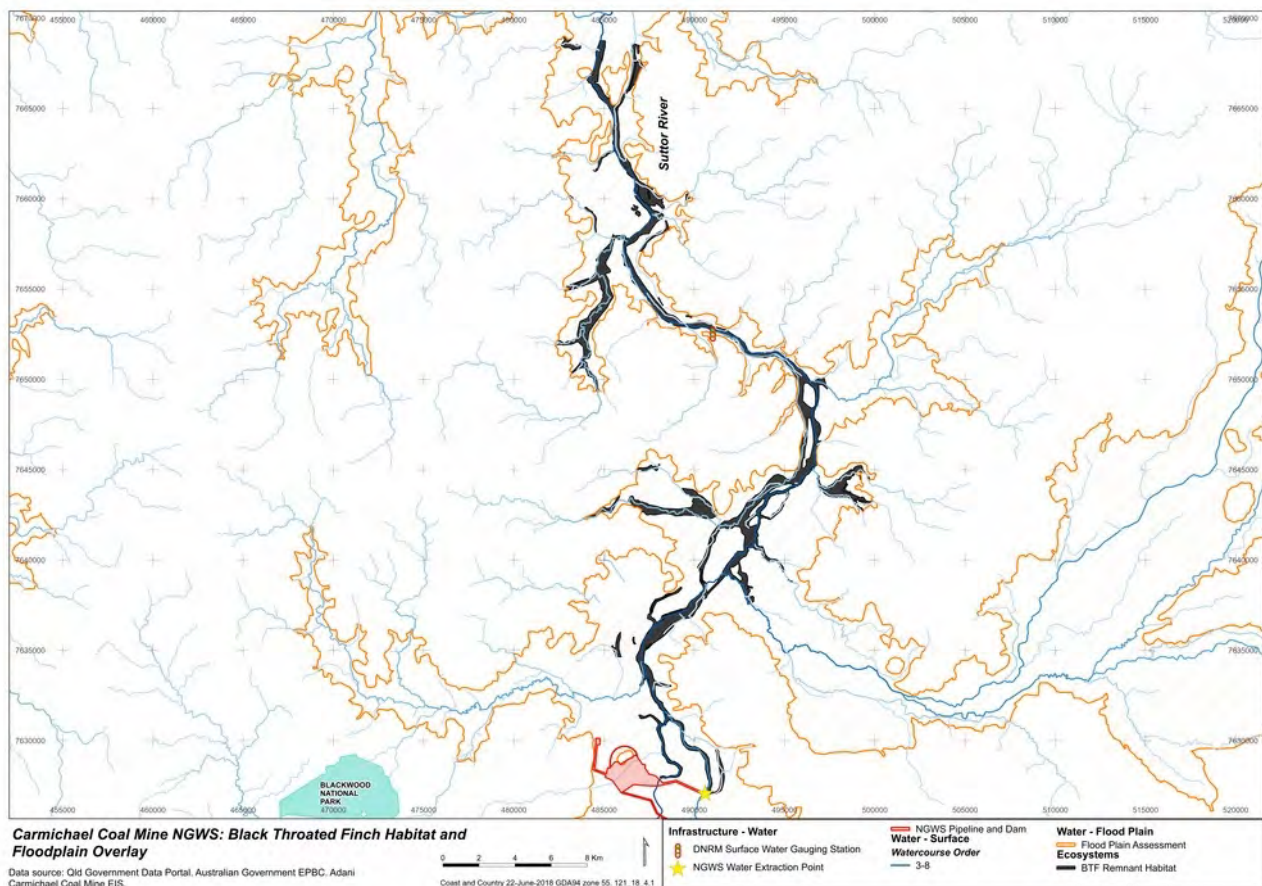
The search compared known habitat as stated in the SPRAT profile, and those REs listed by Adani within the EIS Biodiversity Offset Strategy, and was extrapolated against the Queensland floodplain assessment overlay.

The methodology was as above with the Ornamental Snake, where a simple extrapolation used an arbitrator bounding box applied to limit the extent of the floodplain assessment overlay to between the Adani proposed Sutor River water extraction point and the northern river boundary of Scartwater Station.

Roughly 41.8 square Km of potential Black Throated Finch habitat will be impacted to changes in the floodplain by the Adani Sutor River water extraction. It is unclear the extent and nature of the impact, and is best addressed through further ongoing assessment and modelling.

Through provision of these two examples, it is clear impacts to EPBC listed species from the proposed extraction of water under this application are unknown. No modelling has taken place. For this reason Coast and Country requests the EPBC Minister require this work to be undertaken through a comprehensive EIS, and for this work to be undertaken prior to approval, and for the study to cover multiple seasons to ensure the proper extent and nature of the impact is known.

Map 7: Carmichael Coal Mine NGWS Black Throated Finch Habitat and Floodplain Overlay



No part of EPBC application, the DNRM Environment Review or any other Adani assessment provides information to enable proper assessment of the changes in the water resource and the implications to EPBC listed plant and animal species known to the Sutor River downstream from the Adani extraction point.

Finally, no part of EPBC application, the DNRM Environment Review or any other Adani assessment provides information to enable proper assessment of the changes in the water resource and the implications to grazing pasture, and long term financial implications to those grazing businesses.

Appendix 2, 3, 4 below provide tabled lists of plant and animal species that are known in these areas. As a minimum, a proper environmental impact assessment is required to assess the nature and extent of impact to the species outlined in the appendix 2, 3, 4. The tables includes information of the conservation status, locality, and other information such a international convention the species is identified with. These are:

- Appendix 2: EPBC MNES. MNES Species found within the Regional of Interest – Lower Suttor and Lower Belyando;
- Appendix 3: Nairana National Park – Species Listings. Species of conservation significance as taken from the Queensland Government Nairana Area Management Statement 2013;
- Appendix 4: Queensland Government WildNet Species Density Grid - Belyando Suttor.

Mistake Creek Extraction – Downstream

Situation:

- There are 10 rural properties between the Mistake Creek extraction point and the Suttor River extraction point. They are:
 - Belyando Junction Station
 - Bulliwallah Station
 - Bundabaroo
 - Goodawada Station
 - Illamahta
 - Mount Hope
 - Mt Douglas
 - Plain Creek
 - Queensland Stock Route
 - Nairana National Park
- The Nairana National Park is downstream from the extraction point, where Mistake Creek flows through the middle of the park (see Map 3);
- Downstream from the extraction point to the confluence of the Belyando River is roughly 7 surface water bodies, including HES wetlands that are within the flood plain and likely to rely on flooding for flushing, and water harvesting and storage.
 - It is likely some of these that receive flood waters, at times will receive less flood waters following an extraction event (see Map 3);
- Downstream from the extraction point are various HES wetlands of interest within the Nairana National Park and floodplain are Ten Mile Lagoon and Six Mile Waterhole;
- Nairana National Park hosts 21 regional ecosystems. Five of the 21 regional ecosystems are listed as endangered, eight are listed as of concern and all 22 regional ecosystems have low representation in protected area estate³⁸;
- The Nairana National Park is home to and range land for many known and protected species. These are listed in Appendix 3 below;
- The 2013 Qld Government Department of National Parks, Recreation, Sports and Racing (DNPRSR) management statement for the park stated: “There may be other species of conservation significance; further surveys would assist in their identification”³⁹. This is best interpreted as “we don't know what there because it hasn't been surveyed”.
- There are also 14 bird species listed in international agreements that are likely to occur or whose habitat occurs in the area (Bonn, CAMBA, JAMBA, ROKAMBA).

A segment of the Lower Belyando flood plain spans into the Nairana National Park and at the confluence of Mistake Creek and the Belyando River, the floodplain is very wide, and in places supports wetlands due to the backing up of water.

38 Department of National Parks, Recreation, Sport and Racing, 'Nairana National Park: Nairana Area Management Statement 2013', Fact Sheet, (2013), sPage 2, <http://www.nprsr.qld.gov.au/managing/plans-strategies/statements/pdf/nairana.pdf>.

39 Ibid., sPage 3.

Nairana National Park supports many HES wetlands and waterholes. Of note are a cluster of three waterholes that are located within a small fenced area known as Ten Mile lagoon or Police Camp. This site is state land, and known for its aboriginal and non aboriginal historical significance. Historical reports the 3 waterholes providing relief in the 1902 and 1915 droughts that the region suffered.

As previously noted, no part of EPBC application or any other Adani license or permit application or assessment provides information to enable proper assessment of the changes in the water resource and the implications to listed plant and animal species known to Mistake Creek downstream from the Adani extraction point at Disney Dam.

Finally, no part of EPBC application or any other Adani assessment provides information to enable proper assessment of the changes in the water resource and the implications to grazing pasture, and long term financial implications to those grazing businesses.

Belyando River Extraction – Downstream

Situation:

- There are 15 rural properties downstream from the Belyando River extraction point and the Suttor River extraction point. They are:
 - Beenboona Station
 - Bulliwallah Station
 - Bundabaroo
 - Cassiopeia Station
 - Dawson Vale Station
 - Elgin Downs Station
 - Goodawada Station
 - Moray Downs Station
 - Mt Douglas
 - Plain Creek
 - Twin Hills Reserve
 - Wilandspey
 - Yarmina Station
 - Queensland Stock Route
 - Nairana National Park
- The Nairana National Park is downstream from the extraction point, where the river and its anabranch flow along the park's western edge and through the park itself (see Map 3);
- The Belyando River extraction point is within the Belyando floodplain area. Between the extraction point and the Belyando Gauging Station (Belyando and Gregory Highway Station) are roughly 9 HES wetlands, some that rely on a wide flood plain and others that are closer to the river;
- Downstream from the extraction point to around the Belyando River gauging Station is roughly 24 surface water reservoir and ponds that are within the flood plain and likely to rely on flooding for flushing, and water harvesting and storage.
 - It is likely some of these that receive flood waters, at times will receive less flood waters following an extraction event;
- Downstream from the extraction point are various HES wetlands, with two known as Billillbania Lagoon and Younadgina Lagoon. The Qld Government's Wetland Info identifies four palustrine wetland ecosystems, and several lacustrine wetlands that dry.
- Downstream from the extraction point are wetlands of interest within the Nairana National Park and floodplain are Ten Mile Lagoon and Six Mile Waterhole;
- Directly downstream from the extraction point within or close to the riparian zone are areas of endangered ecosystems of concern. These areas increase around and within the

floodplain of the Nairana National Park where their status changes to endangered and endangered ecosystems⁴⁰;

- Other values related to Nairana National Park are those that are outlined in the document section above for Mistake Creek.

As previously noted, no part of EPBC application or any other Adani license or permit application or assessment provides information to enable proper assessment of the changes in the water resource and the implications to EPBC listed plant and animal species known to the Belyando River downstream from the Adani extraction point at the Belyando River.

Finally, no part of EPBC application, the DNRM Environment Review or any other Adani assessment provides information to enable proper assessment of the changes in the water resource and the implications to grazing pasture, and long term financial implications to those grazing businesses.

Baseline Research

Coast and Country would like raise to the attention of the Minister the threat to the nationally listed Greater Glider from water extraction from the Suttor River.

In 2016 Coast and Country initiated a two year study to develop a baseline understanding of the Lower Belyando River and Lower Suttor River catchments. The purpose of this work is to develop a baseline profile of the Belyando River, Suttor River and Mistake Creek watercourses and their supported ecosystems, including a scientific understanding of the waterholes and HES wetlands and their importance as related to EPBC species, and the Queensland *Nature Conservation Act 1992* (NAC) species, and EPBC migratory birds.

This work is not complete and research findings are yet to be published. It is the intention of Coast and Country to make this information available to public and directly to interested institutions where required.

Much of the Burdekin Basin's Belyando Suttor (E) subcatchment area maintains sound ecological function. Some of the landscape has been transformed by grazing and agricultural improvements, such as tree clearing, and surface water damming. Parts of the Belyando - Suttor River catchments related to this submission have received little research attention and little is known of their ecological function, and available species data is patchy.

What should be of interest to the EPBC Minister in relation to the NGWS are significant findings in relation to the extent and populations of the listed Greater Glider and Waxy Cabbage Palm. Both species are found in numbers down stream from from the Suttor River extraction point. Most importantly the Greater Glider is found in a abnormal large population size in and around a cluster of HES wetlands on the Suttor River.

Greater Glider

To substantiate the population in relation to regional distribution, 15 surveys⁴¹ were undertaken near the proximity of the large population, and to a maximum distance of 150 Km upstream from each of the three extraction points (Suttor River, Mistake Creek, and Belyando River). These surveys were roughly 25 Km to 50 Km apart (dependant and constrained by property access) over a 18 month period and sought to identify the extent to which the population was found upstream from the Suttor River population.

⁴⁰ Qld Gov RE Data Derec Davies, 'Calculation and Assessment'.

⁴¹ Commonwealth of Australia. and Department of Environment, 'Petauroides Volans — Greater Glider', n.d., http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=254.

The population is seen as significant due to the nature of the environmental constraints of the species. That being:

1. North of the population is the Burdekin Falls Dam, due to water inundation caused by the dam, all natural vegetation and riparian vegetation that would support the species has been displaced by dam waters, and vegetation clearing;
2. No population was found south of the Belyando Crossing or the Suttor River Extraction.

This emerging science is of relevance to the NGWS application because the population discussed is bound to a very small track of Suttor River riparian, which is downstream from the proposed NGWS extraction point. As mentioned the population is abnormally large, which raises the issue of what external factor support the population. Access to water, food, and suitable habitat vegetation form part of the primary considerations, all of which are likely to be impacted by the NGWS EPBC application that is before the Minister.

It is recommended the EPBC Minister investigate this population for its significance to the health and long term contribution to species maintenance.

Conclusion

Coast and Country again thanks the Minister for providing the opportunity to comment on the NGWS EPBC application.

Throughout this document various concerns have been raised in relation to information omissions, errors, and data gaps. Most importantly maps and area calculations have been provided that show floodplain areas that support EPBC listed species that will be impacted through impacts to the water resource.

Also this submission has made firm recommendations to support the Ministers decision, that being the NGWS is a controlled action and a comprehensive EIS must be undertaken.

Coast and Country is able to provide further assistance, and access to its resources including those maps and data used in this submission.

Please don't hesitate to contact me via the details below.

Regards

A redacted signature consisting of the text 's47F' in a bold, black, sans-serif font, centered within a grey rectangular box.

s47F
Coast and Country

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Queensland.

Appendix 2: EPBC MNES

MNES Species found within the Regional of Interest – Lower Suttor and Lower Belyando

Species Name	Location	EPBC Status	Migratory	Convention
Australian Painted Snipe	Lower Suttor/Lower Belyando	E	No	no
Curlew Sandpiper	Lower Suttor/Lower Belyando	Critical E	Yes	Bonn C/J/R
Fork-tailed Swift	Lower Suttor/Lower Belyando		Yes	C/J/R
Greater Glider	Lower Suttor/Lower Belyando	V	No	no
Koala	Lower Suttor/Lower Belyando	V	No	no
Latham's Snipe, Japanese Snipe	Lower Suttor/Lower Belyando		Yes	Bonn J/R
Masked Owl (northern)	Lower Suttor/Lower Belyando	V	No	no
Oriental Cuckoo, Horsfield's Cuckoo	Lower Suttor/Lower Belyando		Yes	C
Ornamental Snake	Lower Suttor/Lower Belyando	V	No	no
Osprey	Lower Suttor/Lower Belyando		Yes	Bonn
Quassia	Lower Suttor/Lower Belyando	V		
Red Goshawk	Lower Suttor/Lower Belyando	V	No	no
Southern Black-throated Finch	Lower Suttor/Lower Belyando	E	No	No
Squatter Pigeon (southern)	Lower Suttor/Lower Belyando	V	No	No
Star Finch (eastern), Star Finch (southern)	Lower Suttor/Lower Belyando	E	No	no
Waxy Cabbage Palm	Lower Suttor/Lower Belyando			
Yakka Skink	Lower Suttor/Lower Belyando	V	No	No
Yellow Wagtail	Lower Suttor/Lower Belyando		Yes	C/J/R
Black-faced Monarch	Lower Suttor ONLY		Yes	Bonn
Ghost Bat	Lower Suttor ONLY	V	No	No
Mount Cooper Striped Lerista	Lower Suttor ONLY	V	No	no
Northern Quoll, Digul	Lower Suttor ONLY	E	No	No

Salt Water Crocodile	Lower Suttor/Lower Belyando		No	Bonn
Freshwater sawfish <i>Pristis</i> spp.				
Wetland Info Data and Nairana Species List				
Painted Honey Eater	Nairana	V		
Northern Hairy Nosed Wombat	Nairana	E		
Mash Sandpiper (<i>Tringa Stagnatilis</i>)	Nairana		Yes	Bonn/C/J/R
White Throated Needle Tail	Nairana		Yes	R
Little Curlew and Curlew sandpiper				

Appendix 3: Nairana NP – Species Listings

Species of conservation significance

Nairana Area Management Statement 2013

Scientific name	Common name	NCA status	EPBC status	Back on Track status
Plants				
<i>Acacia ramiflora</i>		Least concern	Vulnerable	Low
Animals				
<i>Denisonia maculata</i>	ornamental snake	Vulnerable	Vulnerable	Medium
<i>Egernia rugosa</i>	yakka skink	Vulnerable	Vulnerable	Medium
<i>Ephippiorhynchus asiaticus</i>	black-necked stork	Near threatened		Low
<i>Erythrotriorchis radiatus</i>	red goshawk	Endangered	Vulnerable	High
<i>Geophaps scripta scripta</i>	squatter pigeon	Vulnerable	Vulnerable	Medium
<i>Grantiella picta</i>	painted honeyeater	Vulnerable		High
<i>Lophoictinia isura</i>	square-tailed kite	Near threatened		Low

<i>Neochmia ruficauda ruficauda</i>	star finch	Endangered	Endangered	
<i>Nettapus coromandelianus</i>	cotton pygmy-goose	Near threatened		Low
<i>Notaden bennettii</i>	crucifix toad	Least concern		Medium
<i>Phascolarctos cinereus</i>	koala	Special least concern	Vulnerable	Low
<i>Poephila cincta cincta</i>	black-throated finch	Endangered	Endangered	High
<i>Rostratula australis</i>	Australian painted snipe	Vulnerable	Vulnerable	Medium

Species listed in international agreements

Nairana Area Management Statement 2013

Scientific name	Common name	Bonn	CAMBA	JAMBA	ROKAMBA
<i>Apus pacificus</i>	fork-tailed swift	-	Yes	Yes	Yes
<i>Ardea modesta</i>	great egret	-	Yes	Yes	-
<i>Ardea ibis</i>	cattle egret	-	Yes	Yes	-
<i>Gallinago hardwickii</i>	Latham's snipe	Yes	Yes	Yes	Yes
<i>Haliaeetus leucogaster</i>	white-bellied sea-eagle	-	Yes	-	-
<i>Hirundapus caudacutus</i>	white-throated needletail	-	Yes	Yes	Yes
<i>Hirundo rustica</i>	barn swallow	-	Yes	Yes	Yes
<i>Macronectes giganteus</i>	southern giant-petrel	Yes	-	-	-
<i>Merops ornatus</i>	rainbow bee-eater	-	-	Yes	-
<i>Monarcha melanopsis</i>	black-faced monarch	Yes	-	-	-
<i>Myiagra cyanoleuca</i>	satin flycatcher	Yes	-	-	-
<i>Rostratula australis</i>	Australian painted snipe	-	Yes	-	-
<i>Sternula albifrons</i>	little tern	Yes	Yes	Yes	Yes
<i>Symposiarchus trivirgatus</i>	spectacled monarch	Yes	-	-	-

Appendix 4: Queensland Government WildNet Species Density Grid - Belyando Suttor

SCIENTIFIC	COMMON_NAM	TAXON_AUTH	NCA_STATUS
<i>Neochmia ruficauda</i>	star finch	(Gould, 1837)	C
<i>Corvus orru</i>	Torresian crow	Bonaparte, 1851	C
Asteraceae			C
<i>Sclerolaena tetracuspis</i>	brigalow burr	(C.T.White) A.J.Scott	C
<i>Eucalyptus whitei</i>	White's ironbark	Maiden & Blakely	C
<i>Acacia hyaloneura</i>		Pedley	C
<i>Abutilon oxycarpum</i> var. <i>subsagittatum</i>		Domin	C
<i>Erythroxylum australe</i>	cocaine tree	F.Muell.	C
<i>Cincloramphus mathewsi</i>	rufous songlark	Iredale, 1911	C
<i>Zornia floribunda</i>		S.T.Reynolds & A.E.Holland	C
<i>Boiga irregularis</i>	brown tree snake	(Merrem, 1802)	C
<i>Passiflora aurantia</i> var. <i>aurantia</i>		G.Forst.	C
<i>Rostellularia adscendens</i>		(R.Br.) R.M.Barker	C
<i>Basilicum polystachyon</i>		(L.) Moench	C
<i>Paspalidium gracile</i>	slender panic	(R.Br.) Hughes	C
<i>Philemon citreogularis</i>	little friarbird	(Gould, 1837)	C
<i>Glinus lotoides</i>	hairy carpet weed	L.	C
<i>Melopsittacus undulatus</i>	budgerigar	(Shaw, 1805)	C
<i>Citrus glauca</i>		(Lindl.) Burkill	C
<i>Heteropogon contortus</i>	black speargrass	(L.) P.Beauv. ex Roem. & Schult.	C
<i>Leptochloa digitata</i>		(R.Br.) Domin	C
<i>Maireana microphylla</i>		(Moq.) Paul G.Wilson	C

<i>Urochloa reptans</i>		(L.) Stapf	C
<i>Cracticus nigrogularis</i>	pied butcherbird	(Gould, 1837)	C
<i>Enneapogon</i>			C
<i>Digitaria breviglumis</i>		(Domin) Henrard	C
<i>Sida trichopoda</i>		F.Muell.	C
<i>Malurus lamberti</i>	variegated fairy-wren	Vigors and Horsfield, 1827	C
<i>Eucalyptus drepanophylla</i>		F.Muell. ex Benth.	C
<i>Eragrostis</i>			C
<i>Chrysopogon fallax</i>		S.T.Blake	C
<i>Melaleuca pallescens</i>		Byrnes	C
<i>Dinebra decipiens</i> var. <i>asthenes</i>		(Roem. & Schult.) P.M.Peterson & N.Snow	C
<i>Exocarpos latifolius</i>		R.Br.	C
<i>Chamaecrista absus</i> var. <i>absus</i>		(L.) H.S.Irwin & Barneby	C
<i>Cenchrus ciliaris</i>		L.	
<i>Rhynchosia minima</i> var. <i>australis</i>		(Benth.) C.Moore	C
<i>Eurema hecabe</i>	large grass-yellow	(Linnaeus, 1758)	
<i>Diospyros humilis</i>	small-leaved ebony	(R.Br.) F.Muell.	C
<i>Sclerolaena tricuspis</i>	giant red burr	(F.Muell.) Ulbr.	C
<i>Eucalyptus howittiana</i>	Howitt's box	F.Muell.	C
<i>Geijera salicifolia</i>	brush wilga	Schott	C
<i>Sida aprica</i> var. <i>aprica</i>		Domin	C
<i>Leiopotherapon unicolor</i>	spangled perch	(Gunther, 1859)	

Adani Infrastructure's North Galilee Water Scheme (NGWS) Project;

EPBC 2018/8191

June 2018



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Healthy planet, healthy people.

DEA Scientific Committee

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[Redacted content]

Proposed action

North Galilee Water Scheme (NGWS) Project; EPBC 2018/8191¹

Comment from Doctors for the Environment Australia

Introduction

Doctors for the Environment Australia (DEA) is an independent, non-government organisation of medical doctors in all Australian States and Territories. Our members work across all specialties in community, hospital and private practices. We work to minimise public health impacts and address the diseases, local, national and global, caused by damage to our natural environment.

DEA's primary role is to highlight the vital link between human health and the environment. We recognise the invaluable role that healthy ecological systems have in providing humans with clean air and water, fertile soils and their cultural and societal significance, and that human health and our future wellbeing depends on maintaining and protecting our environment. There are immediate and long-term costs to be considered if this critical link is ignored. Currently **60% of the Earth's vital ecosystems are degraded and under severe and unsustainable pressure.**² As some regions of Queensland become drier, it is essential to sustainably manage our water resources to ensure future generations have sufficient potable water, irrigation for agriculture and functioning natural ecosystems.

Since 2011, DEA has made three previous submissions to Government on the Carmichael mine proposal which detail the health impacts of water usage and also the effects of runoff to the Great Barrier Reef and exacerbation of climate change which will impact on Australia.³

Recommendations

1. That the North Galilee Water Scheme (NGWS) project is a controlled action under s 67 of the amended Environment Protection and Biodiversity Conservation Act of 2013, with controlling provisions of:
 - a. Water resource in relation to Coal Seam Gas or large coal mining development
 - b. Great Barrier Reef Heritage Area
 - c. Nationally threatened species and ecological communities
2. Obtain expert advice from the Independent Expert Scientific Committee on Coal Seam Gas (CSG) and Large Mining Development (IESC) on the likely cumulative environmental impacts and impacts on water resources of this project.

3. Require a Social and Environmental Impact Statement (EIS) to assess the full impacts on Matters of National Environmental Significance and any potential impacts on human health and wellbeing.
4. Require Adani Infrastructure Pty Ltd to fully disclose the environmental compliance record of the parent company and any other affiliated companies.

Background

Impact on water

The NGWS should be a controlled action and require assessment under the water trigger (EPBC Act amendment in 2013) for the following reasons:

1. The NGWS forms an essential part of the Carmichael Coal Project (CCP), and thus clearly constitutes coal mining activity – necessitating its assessment under the EPBC water trigger.

The term “large coal mining development” is defined in section 528 as: “any coal mining activity that has, or is likely to have, a significant impact on water resources (including any impacts of associated salt production and/or salinity):

- (a) in its own right; or
- (b) when considered with other developments, whether past, present or **reasonably foreseeable developments”.**

Adani plans on harvesting water from the Suttor River in the order of 12.5GL per year and then transporting it to its Carmichael Coal Project (CCP). In their **own words:** “The construction and operation of all mining projects, large and small, require a secure and reliable water supply. The CCP requires offsite water supply infrastructure for the extraction, storage and delivery of water for the operation phase as there is insufficient onsite water available to meet **the total demand.**”⁴ The CCP cannot operate, i.e. extract and process coal without this water, therefore the NGWS should be considered as a part of the **CCP and thus constitutes a “large coal mining development”.**

2. The Suttor-Belyando Sub-catchment forms a part of the complex water systems of the Burdekin Dry Tropics which flow into and therefore potentially impacts on the wellbeing of the already vulnerable Great Barrier Reef Heritage Area.⁵ This has not been mentioned or assessed in the proposal documents submitted by Adani. Given that the Burdekin River contributes the single largest source of suspended sediment to the Great Barrier Reef, the potential impact of changed flows on the health of the Great Barrier Reef needs to be thoroughly assessed.

3. The impact of the water take from the Suttor River also needs assessment regarding the effect on downstream ecological systems and human use of this water. The Suttor River management falls under the Queensland Government Water Plan (Burdekin Basin) 2007,⁶ which sets out a framework for water use **including maintaining “the natural variability of flows that support the habitats of native plants and animals and migratory birds in the watercourses, floodplains, wetlands, lakes and springs”**. **It also states the catchments’ importance to supporting “productivity in the receiving waters of the Great Barrier Reef and inshore reefs”, and the many human uses this greater catchment provides, including irrigated agriculture and drinking water.** It is therefore important that the full impact of the water take in the NGWS is assessed, taking into account any potential downstream impact.
4. The region is home to several vulnerable and endangered species, and an important habitat for at least three species (the Ornamental Snake, the Black-Throated Finch and the Koala) **has been identified within the project’s area.** The presence of threatened species within the project area means that this project is likely to have potentially significant impacts on matters of national environmental significance, thus making it a controlled action and requiring a full and thorough assessment. In this instance, where data is lacking, the precautionary principle should be engaged (s391 of the EPBC Act). Of note, the only EIS conducted by Adani for the NGWS was for a Material Change of Use (MCU) council permit for Stage B (storage and pipeline) of the project. Additionally, there is the risk of cumulative impact on vulnerable ecologies from other large mining projects in the same area.
5. The NGWS could also potentially be offered for use by other mining concerns however the proponents do not clearly state how much water would be made available to other projects, how many projects it expects to supply, or if this would mean increasing their take of 12.5GL per year. This means that the NGWS forms part of much larger coal mining actions, and therefore adds further weight to the need for full assessment under the water trigger.
6. Adani Infrastructure Pty Ltd is part of a larger group of companies including Adani Mining Pty Ltd (the proponent of the CCP) and Abbot Point Bulk Coal Pty Ltd, all of which are ultimately owned by the company Adani Enterprises Limited. Given the close relationship of these companies, full disclosure of any environmental legal proceedings resulting in fines or prosecution should be taken into account. There are several confirmed breaches of environmental matters by these companies, as well as concerns with the validity of hydrological monitoring. For example, the Groundwater Dependent Ecosystem Management Plan relating to extraction of ground water for the CCP was reviewed by independent experts and has showed serious scientific flaws and data gaps.⁷
7. **In their assessment of Adani’s Carmichael Coal Mine and Rail Infrastructure Project (EPBC 2010/5736),** the Independent Expert Scientific Committee advised that regional cumulative impacts be thoroughly assessed and be used to influence scheduling of further development phases, of which NGWS is clearly one.⁸

Impact on human health:

Human health and the health of the environment is intricately linked. In a region already vulnerable to drought, any potential negative impact on water availability and quality may have adverse effects on the livelihoods and subsequent mental health and social and community functioning of affected people. In the absence of a full social and environmental impact assessment these impacts are difficult to predict though likely to be significant.

The Great Barrier Reef, in addition to its intrinsic value as a World Heritage Area, supports the health of communities living near it by providing food, employment, protection from coastal erosion and many other essential ecosystem services. Mental health and wellbeing is also intricately connected to access to natural ecosystems. As the health of the Great Barrier Reef is already suffering from the impacts of climate change, pollution and other threats, any potential further impact resulting from the NGWS and related mining activities needs to be thoroughly and independently investigated.

The direct health impacts of coal mining and the secondary health impacts of climate change are well documented – and it is essential that the NGWS, which forms part of the CCP and potentially other coal mining developments, is assessed taking into account the larger implications of the related projects. See related DEA factsheets for more detail on these health impacts^{9,10} and **DEA's Adani's Carmichael Coal Mine and Health: Fact Sheet**¹¹.

References

¹ Referrals Gateway, Environment Assessment Branch Department of the Environment GPO Box 787 Canberra ACT 2601

By email: epbc.referrals@environment.gov.au

² WHO - Health and Environment Linkages Initiative. <http://www.who.int/heli/en/>.

³ Submissions to the Carmichael Coal Mine and Rail Project EIS and Supplementary EIS <https://www.dea.org.au/submissions-to-the-carmichael-coal-mine-and-rail-project-eis-and-supplementary-eis-healthy-planet-healthy-people-dea/>

⁴ North Galilee Water Scheme (NGWS) Project. In: Energy DotEa, editor.: Australian Government Department of Environment and Energy; 2018.

⁵ NQ Dry Tropics Burdekin Dry Tropics NRM plan <http://nrm.nqdrytropics.com.au/our-region/our-priorities/>.

⁶ Water Plan (Burdekin Basin) 2007. Queensland Water Act 2000.

<https://www.legislation.qld.gov.au/view/pdf/2017-09-02/sl-2007-0189>

⁷ Currell MJ, Werner AD, McGrath C, Webb JA, Berkman M. Problems with the application of hydrogeological science to regulation of Australian mining projects: Carmichael Mine and Doongmabulla Springs. Journal of Hydrology. 2017; 548: 674-82. <https://doi.org/10.1016/j.jhydrol.2017.03.031>

⁸ **Advice to decision makers on Adani's Carmichael Coal Mine and Rail Infrastructure Project (EPBC 2010/5736)**. 2012.

⁹ DEA (2017). The Health Toll of Coal. <https://www.dea.org.au/the-health-toll-of-coal-fact-sheet/>

¹⁰ DEA (2016). Climate Change and Health in Australia Factsheet. <https://www.dea.org.au/climate-change-and-health-in-australia-fact-sheets/>

¹¹ **DEA (2017). Adani's Carmichael Coal Mine and Health: Fact Sheet** <https://www.dea.org.au/adanis-carmichael-coal-mine-and-health/>

25th June 2018

Environment Assessment Branch
Department of the Environment
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Canberra ACT 2601
epbc.referrals@environment.gov.au

Dear Sir/ Madam,

Re: EBPC Referral -2018/8191 Adani Infrastructure Pty Ltd/Transport – Water, various lots/ Queensland/ North Galilee Water Scheme, 16

I write on behalf of Gecko Environment Council Assoc. Inc. (Gecko) which is a not-for-profit environment association founded in 1989 and has been active for the past 29 years in protecting the environmental values and ecological sustainability of the Gold Coast, Queensland and, when appropriate, nationally. Gecko's Mission is *"To actively promote, conserve and restore the natural environment and improve the sustainability of the built environment of the Gold Coast region in partnership with our member groups and the wider community."*

It is with great concern that Gecko has read this request by Adani to undertake the piping of 10 billion litres of water from the Suttor River to a flood storage facility for use in the Adani Carmichael mine, should this ever come to fruition.

Adani already has permission from the Queensland Government to unlimited access to groundwater aquifers in the Galilee Basin and does not need this additional water. Gecko is totally opposed to the access to the aquifer and our members are equally opposed to syphoning off flood waters from the Suttor River.

Climate change and the precautionary principle.

Australia is a land of droughts and most of the Queensland western areas are in a prolonged drought now. Climate scientists advise us that it is highly likely that droughts will be more common, more severe and longer lasting as climate change takes hold in Australia. The precautionary principle to which the Commonwealth and all States are signatory under the 1992 Intergovernmental Agreement on Sustainability, must be applied in this application.

Poor water system management.

Use of water for a coal mine is surely the most wasteful and distasteful way of using an essential resource and will mean the water is lost to the river system forever. Our rivers and those wildlife dependent on their ecosystems rely on floods for replenishment and simply to keep functioning. We already have an example of extremely poor management of our main river system, the Murray Darling, and this should not be repeated in relation to the Suttor River.

Primary production depends on reliable water.

Our farmers are dependent on water to grow crops and livestock and they are already concerned about the impact of Adani's licence to extract unlimited volumes of water from the Basin aquifer. This additional take of surface water increases the rightful concerns of our primary producers to the possibility of insufficient water left for their use. Primary production is not only essential to produce

our food for domestic consumption it also provides income from trade and should not be jeopardized by Adani. By contrast the Adani coal mine is highly likely to become a stranded asset as the world transitions to a fossil fuel free future in order to contain climate change. It is simply untenable and unethical to consider ruining a river system for the benefit of this coal mine.

Clearing of Vegetation.

Gecko members note that over 170 ha of native vegetation will be cleared for the pipeline and the storage dam adding to the already destructive nature of this proposed coal mine. It also appears that part of a wetland will be filled in for part of the infrastructure at a time when all Australian wetlands are under pressure to remain viable and fresh water wetlands in particular. Once again the precautionary principle should be invoked here to assist in arresting the very serious decline in Australia's biodiversity.

Native Title.

Although Adani is claiming in its application that it has agreements with Native Title holders Gecko is fully aware that there is still a court decision pending on just this matter. No decision should be made on this application until the Native Title disputes are fully resolved.

Greenhouse gas emissions.

The Carmichael mine will generate unacceptably high levels of greenhouse gas emissions on site in its construction and production. In addition, by shipping the low grade coal overseas to be burnt, it will add to the global budget of greenhouse gases. This additional infrastructure with the necessary pumping of water for over 60 klms will add even more emissions from this mine. At a time when many countries around the world are working hard to reduce greenhouse gas emissions for the benefit of all humanity, Adani should not be allowed to exacerbate this situation for its own profit.

Adani profits.

It is noted that Adani intends that some of this water pumped and stored from the Suttor River could be used for other mine developments in the Galilee Basin. Gecko can only assume from this that Adani is hoping to increase its profits from this exercise by on-selling the water "stolen" from the Suttor River and other users of this river system.

The environmental record of this company overseas and in India in particular, is not a good one and this must be taken into account in assessing this application as part of the EPBC Unit's duty of care and due diligence. Australia does not want to be left with the clean-up costs of damage to its environment as a result of this proposed mine, if indeed it could ever be rehabilitated.

Gecko requests that if this application cannot be refused out right, then it must be subject to a full environmental impact assessment under the EPBC Act.

Yours sincerely

 s47F

s47F
Campaign Coordinator.
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s47F .

19 June 2018

Referrals Gateway
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Proposed Action: North Galilee Water Scheme

Reference Number: 2018/8191

I am writing on behalf of Greenpeace Australia Pacific (GPAP). Greenpeace is a global independent environmental organisation that uses investigations, advocacy and non-violent creative confrontation to achieve a just and healthy planet. GPAP has around 550,000 supporters whom we engage on a regular basis on matters of public interest. We appreciate the opportunity, under section 74(3), to comment on whether the proposed action should be assessed under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) ("**EPBC Act**").

1. Summary

In summary, our submission states that:

- (a) The proponent accepts that the purpose of the project is to supply water to the Carmichael Coal Project (CCP), and therefore we submit that the project will necessarily have a significant and unacceptable impact on a water resource for a coal mine.
- (b) The Carmichael Coal and Rail Project did not identify the source of water for dust suppression and so that a cumulative impact assessment was not undertaken.
- (c) The project will have a significant impact on matters of national environmental significance including threatened species, as well as a potential impact on the Great Barrier Reef World Heritage Area which should have been assessed under the precautionary principle.
- (d) The proponent has failed to declare their environmental history.
- (e) The project is a component of a larger action, in that it is intending to supply far greater volumes of water to multiple coal projects, and the Minister should use his discretion to reject the proposal.

2. Background

The project is located approximately 160km north-west of Clermont.

Adani plan to harvest water from the Suttor River downstream of its confluence with the Belyando River in times of flood. The water will then be stored in a nearby upgraded dam then piped to the mine.

The project consists of:

- flood water harvesting infrastructure on the Suttor River
- a 10 GL (billion litre) dam (the upgrade of a 2GL dam is proposed)
- pumping facilities and a 4km pipe linking the harvester to the dam
- a 110km pipeline with pumping stations connecting the dam to the proposed Carmichael coal mine.

Adani estimate that construction of the NGWS will run from January 2019 to March 2020. Adani holds a water license entitling it to take 12.5 billion litres a year from the Suttor River at the location of the proposed water harvester. 1 This was obtained from the Queensland Government in March 2017 with the water being allocated from a State strategic reserve.

Adani Infrastructure is part of the Adani Group, who have previously obtained an EPBC exemption for the Carmichael Coal and Rail Project and also own the Abbot Point Coal Terminal. Adani say that the North Galilee Water Scheme is required to meet the demands of the Carmichael Coal Project as well as other mines in the region including China Stone.

3. Significant impact on a water resource for a large coal mining development

The proponent intends to extract up to 12.5GL of surface water from the Suttor River, which feeds a number of DIWA wetlands as well as providing habitat for 24 threatened fauna and 32 threatened flora species and ecological communities. Given the volume of water proposed to be extracted during the lifetime of the project, there can be no doubt that the extraction will constitute a significant impact which has not been previously assessed due to the proponent's failure to include this component of the Adani Combined Project in its previous EPBC referral.

The proponent claims that the project does not form part of a large coal mining development, although as the proponent acknowledges, the project is critical to the Carmichael Coal Project, which was assessed by the Independent Expert Scientific Committee, who found severe deficiencies in the Carmichael Project even before the impacts of the North Galilee Water Scheme are factored in. The proponent notes: "The CCP requires water to service the construction and operational phases. Not developing the NGWS was not considered an option as without the NGWS Project, the water extraction licence would be sterilised."

Section 24D of the EPBC Act says that a person must not take an action if that action "involves" a large coal mining development and that action is likely to have a significant impact on water resources. In his second reading speech, then Minister Tony Burke indicated that the amendments were introduced "so that the full impacts of those projects on water resources can be assessed". Nowhere in the Act, the second reading speech or any of the explanatory memoranda does the legislation allow for it to be read down to exclude projects where the coal mining component had been separately assessed. The Department's approach in previous referrals in relation to Nathan Dam and Olive Downs are untenable in the light of the Act. The executive does not have the power to circumvent the clear intention of Parliament.

On Question 2.9 of their referral, the Proponent has answered "No" to the question "Is the project likely to have ANY **direct or indirect** impact on a water resource related to coal/gas/mining?" (emphasis added). This statement is incorrect and requires further explanation by the proponent.

The proponent refers to the Significant Impact Guidelines (Coal Seam Gas and Large Coal Mining Developments – impacts on water resources) in support of their claim. While not having the force of law, the Significant Impact Guidelines relevantly provide:

“The EPBC Act requires the assessment of a referred action as a whole. As such, where an action referred to the Department includes both extraction of a CSG development or large coal mining development and associated infrastructure then the significance of the whole of the referred action on water resources would be considered at the assessment stage.”

Allowing proponents to avoid the water trigger and a proper assessment of the cumulative impacts of their projects by splitting approvals in the way that Adani appears to have done would completely undermine the intent of the EPBC Act, and could even be seen to be an abuse of process. The proponent should have alerted the government at the time of the referral of the Carmichael Coal and Rail Project that it was a component of a larger action.

Accordingly, the Minister should consider impacts on a water resource a controlling provision for the purposes of the EPBC Act and refer the Project to the Independent Expert Scientific Committee for assessment.

4. Listed threatened species and ecological communities

The referral identifies a number of matters of national environmental significance that are likely to be impacted by the project, including Brigalow Ecological Community, the Southern Black-Throated Finch and the Koala, but it appears that there has been very little surveying of the project area at intervals throughout the year that would match up with migratory and breeding seasons for threatened species.

The referral also fails to consider downstream impacts given a possible interactivity between different aquifers in the region, and fails to properly apply the precautionary principle in assessing impacts on potentially impacted species.

The proponent has also failed to consider impacts on the Great Barrier Reef World Heritage Area, notwithstanding that the Burdekin catchment is a significant input into the Great Barrier Reef in relation to water quality. This was accepted during the assessment for the Carmichael Coal Project, even without consideration of the considerably increased impacts arising from the North Galilee Water Scheme.

Accordingly, the Minister should declare the Great Barrier Reef World Heritage to be a controlling provision for the purposes of the EPBC assessment, and use his power under section 76 of the EPBC Act to require the proponent to provide more information about matters of national environmental significance. This should include intensive field studies covering the entire migration period for species likely to appear in the project impact area.

5. Environmental record of the proponent

The proponent claims that they have not been the subject of fines or prosecution due to failure to comply with environmental laws or regulations. Adani Infrastructure is a subsidiary of the Adani Group. Following a breach of a temporary emissions license and the release of large amounts of coal fines into the ocean near the Caley Valley Wetlands, Adani Abbot Point Bulk Coal (a subsidiary of Adani Ports and Special Economic Zones, which is part of the Adani Group and intends to take coal from the Carmichael Coal Project), was fined \$12,000. This is one of a number of environmental infringements by Adani Group companies including Adani Mining.

Jeyakumar Janakaraj is both a director of Adani Infrastructure and CEO of Adani Mining, two of the companies comprising the Adani Combined Project of which this element is part.

The Adani Group also have a significant environmental history internationally. Accordingly, Adani Infrastructure should be required to disclose offences by other companies in the Adani Group, and at least those companies that form part of the Adani Combined Project.

6. Component of a larger action

The proponent points out in their referral "There is potential in the future for the NGWS to supply additional resource-extraction projects that are located in the surrounding region and have already been subject to the State and Commonwealth approvals process or are undergoing that process. These potentially include projects such as the China Stone Coal Project (located north of the CCP mine lease). At this stage there are no such water supply agreements in place or in the process of approval (to the best of the proponent's knowledge) and the current State Government approved water licence for the NGWS is sufficient to supply the CCP only."

Given the significant additional impacts that these projects would have, including a more than doubling of the water removed from the surface aquifer, it seems evident that this project is a component of a larger action and therefore the Minister will need to use his power in section 74A to refuse the project as a component of a larger action in order to allow a cumulative impact assessment to be undertaken.

8. Conclusion and Recommendations

It is very unfortunate that the proponent failed to include this scheme in the original Carmichael referral as this has led to an intolerable situation of "approval creep". The cumulative impacts of this project combined with others in the Adani Combined Project are clearly unacceptable and we would submit that the Minister would have no difficulty in rejecting the project on that basis. The Minister can also decide that the project is the component of a larger action as the proponent has intimated. In any event, the Minister should not be making decisions about the controlling provisions until proper site surveys at appropriate points in the year have been conducted and adequate information provided to the Department about impacts on matters of national environmental significance, the Great Barrier Reef, water resources and the proponent's environmental history. If this project proceeds to the next stage, impacts on a water resource as well as the Great Barrier Reef should be considered controlling provisions.

Please do not hesitate to contact me if you have any questions regarding this submission.

Kind regards,

s47F

Campaigner

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25 June 2018

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Proposed Action: North Galilee Water Scheme

Reference Number: 2018/8191

I am writing as a person who has concerns about adverse impacts on biodiversity and the people who live in the Galilee Basin. I am the retired former coordinator of Mackay Conservation Group and over the past decade have worked with land owners there concerned about its conservation and protection, especially of the Bimblebox nature refuge. I was involved in getting fauna and flora surveys organized in the region and am aware of just how sensitive that environment is to changes in ground and surface water supplies. I appreciate the opportunity, under section 74(3), to comment on whether the proposed action should be assessed under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) ("**EPBC Act**").

1. Summary

In summary, my submission states that:

- (a) Under the EPBC Act water resources are a matter of national environmental significance, in relation to coal seam gas and large coal mining development. The proponent accepts that the purpose of the project is to supply water to the Carmichael Coal Project (CCP), and is likely to have significant and unacceptable cumulative impacts on a water resource. What these impacts are and their level of significance have not been fully identified or addressed.
- (b) The project has the potential to significantly impact on matters of national environmental significance (MNES) including threatened species, an endangered Threatened Ecological Community as well as the Great Barrier Reef World Heritage Area which should have been assessed under the precautionary principle. These downstream impacts have not been identified and comprehensively assessed.
- (c) At 247,000 square kilometres, and with 27,750 million tonnes of coal in the region the Galilee Basin has the potential to become the largest coal-producing region in Queensland. The EPBC Act requires the significance of the impacts of an action to be considered with other developments, whether past, present or reasonably foreseeable. In general, this would indicate that proposed CSG or coal mining in an area of high water use would be more likely to involve a significant impact on a water resource. The project is a component of a larger action, in that it states it may supply far greater volumes of water to planned multiple large scale coal projects in a low and highly variable rainfall region, where there is little available information on surface and groundwater supplies and their interconnectivity, and dewatering operations will operate at a scale and rate that cumulatively are at high risk of significantly reducing groundwater reserves and river flows. The Minister should use his discretion to reject the proposal.
- (d) The proponent has failed to declare their environmental history.

Recommendations

We recommend that you:

1. Declare the NGWS project a controlled action with controlling provisions of:
 - Listed threatened species and communities
 - A water resource in relation to coal seam gas development and large coal mining development
 - World Heritage properties
 - Great Barrier Reef Marine Park
2. Require the full extent and impacts of the project on MNES to be properly assessed under the EPBC Act via a full Environmental Impact Statement.
3. Obtain expert advice on the water impacts of the project from the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (**IESC**).
4. Require the proponent to fully disclose the environmental compliance record of all associated companies both here and overseas in order for the public to properly understand the compliance history of the Adani group.
5. Recognise that the action is part of a larger action proposing to take far greater volumes of surface water than identified in the referral, by:
 - Exercising your discretion under s74A of the EPBC Act to reject the referral, or
 - Utilising your powers under s76 (2) of the EPBC Act to require Adani to provide further information about the full extent of impacts to surface water, including the proposal to supply other coal mines from the NGWS and other existing water permits held by Adani for construction purposes in the catchment.

2. Background

The project is located approximately 160km north-west of Clermont within the Lower Suttor River catchment which is part of the Burdekin River Basin (Figs.1, 2,3).^{1,2}



Fig.1 Location of the NGWS project in the Burdekin River Basin downstream of the junction of the Belyando and Suttor Rivers.

¹ Sources: Burdekin Water Resources Plan Map
² www.nqdrytropics.com.au/wqip2016



Fig.2 Location of the North Galilee Water Scheme in relation to the confluence of the Upper Suttor and Belyando Rivers

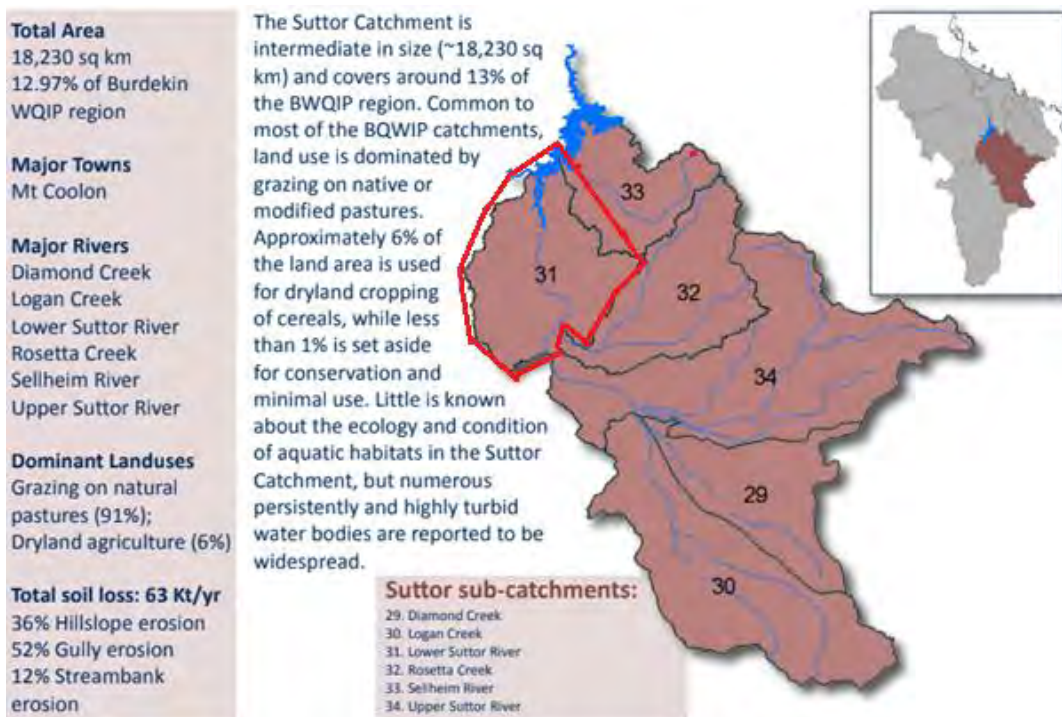


Fig.3 Location of project in the lower Suttor River catchment

Less than 1% of the Suttor catchment is set aside for conservation and minimal use and little is known about the ecology and condition of aquatic habitats in the Suttor catchment but numerous and persistently and highly turbid water bodies are reported to be widespread.² There appear to be no conservation areas within the lower Suttor River catchment.

The area of the lower Suttor sub-catchment is 2,689.0 km². Wetlands comprise just 4.9% of this sub-catchment, reflecting its low rainfall.

Long-term rainfall records at Mt. Douglas³ southeast of the NGWS range between 217.4-1146.6mm/yr. The mean is 586.3 mm/yr and the median is 545.9 mm/yr.

Adani plan to harvest water from the Suttor River downstream of its confluence with the Belyando River in times of flood. The water will then be stored in a nearby upgraded dam then piped to the mine.

The project consists of:

1. flood water harvesting infrastructure on the Suttor River
2. a 10 GL (billion litre) dam (the upgrade of a 2GL dam is proposed)
3. pumping facilities and a 4km pipe linking the harvester to the dam
4. a 110km pipeline with pumping stations connecting the dam to the proposed Carmichael coal mine.

Adani estimate that construction of the NGWS will run from January 2019 to March 2020.

Adani holds a water license entitling it to take 12.5 billion litres a year from the Suttor River at the location of the proposed water harvester. This was obtained from the Queensland Government in March 2017 with the water being allocated from a State strategic reserve.

3.The volume of water take is likely to constitute a significant impact

The take from the Suttor River of up to 12.5GL per year for the NGWS project is likely to constitute a significant impact on water resources because it amounts to more than 50% of the total strategic reserve for the relevant sub-catchment under the Queensland *Water Plan (Burdekin Basin) 2007*.

4.The North Galilee Water Scheme (NGWS) is required to meet the demands of the Carmichael Coal Project as well as other coal mines planned in the region.

Adani Infrastructure is part of the Adani Group, who have previously obtained an EPBC exemption for the Carmichael Coal and Rail Project and also own the Abbot Point Coal Terminal. Adani say that the North Galilee Water Scheme (NGWS) is required to meet the demands of the Carmichael Coal Project as well as other mines in the region including China Stone.

5.Rainfall and stream flow variability

Rainfall variability is high for the Belyando and lower Suttor Rivers and moderate to high for the upper Suttor River between Jan-Feb the main breeding months for wildlife (Fig.).

² Suttor WQIP Atlas Factsheet August 2016.pdf

³ BoM Station: Mt Douglas Number: 34022 Opened: 1912 Now: Open Lat: 21.52° S Lon: 146.87° E Elevation: 170 m

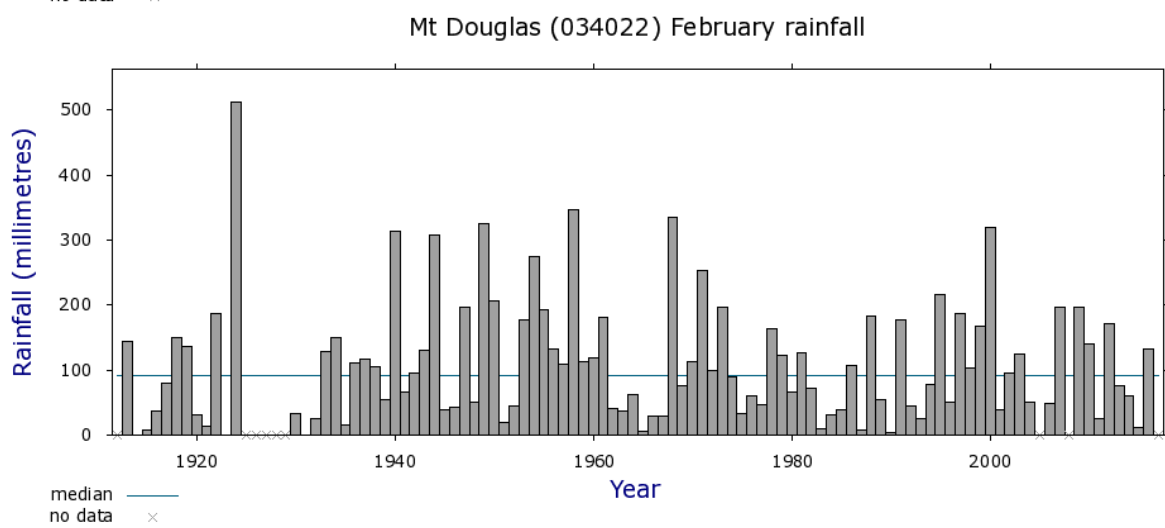
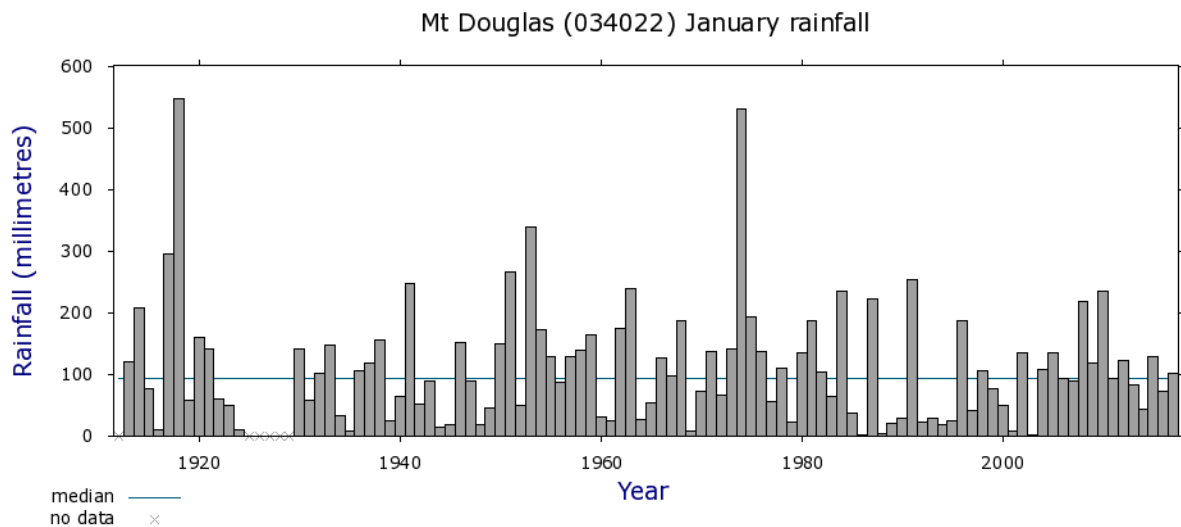


Fig. 4 Highest rainfall months January and February at closest monitoring site to GBWS

So riparian ecosystems would have evolved to manage moderate to high variability in rainfall and river flows but if the frequency of longer dry periods increases or the frequency of well above average river flows in Jan and Feb (the main wildlife breeding season) declines, producing very high to extreme variability in the Suttor River flows, the resilience of these ecosystems will be stressed. The NGWS pumping of 12.5 GL/yr of water for up to 90 years will increase such variability.

How much variability can be tolerated by riparian and aquatic biodiversity before the impacts become significant?

6. Pumping impacts on water temperatures and turbidity

Pumping large volumes of water can also affect water temperatures and increase turbidity which in turn can affect aquatic breeding success and numbers.

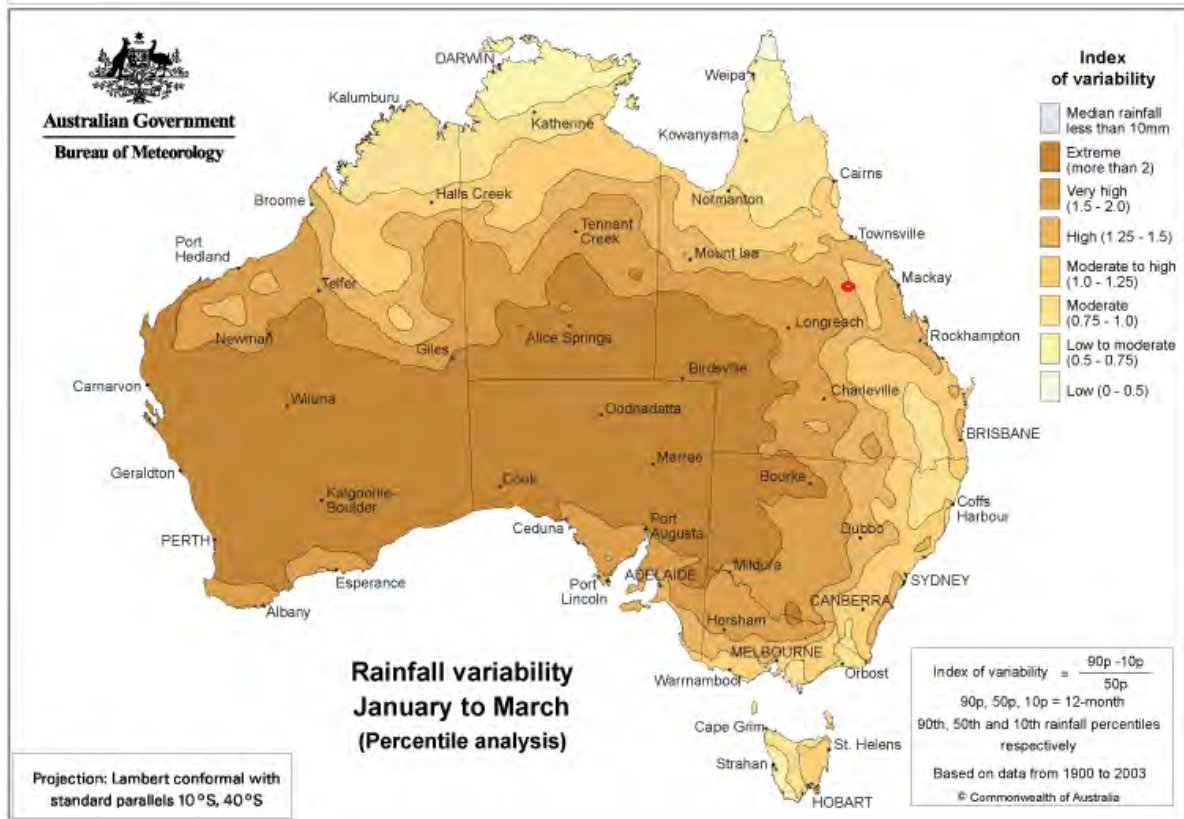
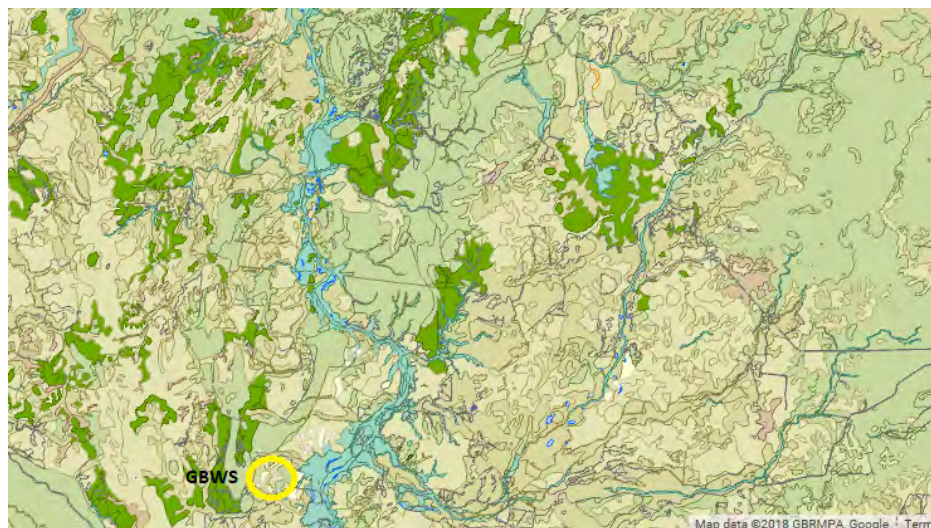


Fig. 5 Rainfall variability in highest rainfall months

7. Riverine wetlands in the Lower Suttor River

Wetlands Info maps the Suttor River downstream from the GBWS as primarily Eucalypt open forests to woodlands on floodplains interspersed with wetlands (Fig.).



- Regional ecosystem mapping—remnant
- 2—Eucalypt open forests
- 3—Eucalypt woodlands to open forest
- 4—Eucalypt open forests to woodlands on floodplains
- 5—Eucalypt dry woodlands on inland depositional plains
- 6—Eucalypt low open woodlands usually with spinifex understorey
- 7—Callitris woodland—open forests
- 8—Melaleuca open woodlands on depositional plains
- 9—Acacia aneura (mulga) dominated open forests, woodlands and shrublands
- 10—Other acacia dominated open forests, woodlands and shrublands
- 15—Wetlands (swamps and lakes)

Fig. 6 main vegetation types south of the GBWS

Riverine wetlands comprise 60% (74.1 km²) of the Lower Suttor River sub-basin wetlands and artificial and highly modified wetlands comprise 37.7% (46.5 km²) (Table 1)⁴.

37.7% of the all wetland habitats are already artificial or highly modified.

In the whole Suttor River catchment highly modified wetlands comprise 19.34% of the total riverine and highly modified wetlands compared to 38.56% in the Lower Suttor River sub-catchment.

Additional taking of the large volume of surface water for the 60 mtpa Carmichael coal mine operations for 90 years will place more strain on existing wetlands and their biodiversity. Even more taking for additional large mines will certainly have major significant impacts.

Table 1 Areas of catchment wetland types in the Lower Suttor River

Lower Suttor River (Burdekin) water quality improvement plan catchment wetland area by habitat 2013

Habitat	Area (km ²)	% wetlands area	% total area
Coastal and sub-coastal non-floodplain tree swamp—Melaleuca spp. and Eucalyptus spp.	0.2	0.1%	0.0%
Coastal and sub-coastal floodplain tree swamp—Melaleuca spp. and Eucalyptus spp.	1.8	1.5%	0.1%
Coastal and sub-coastal floodplain grass, sedge, herb swamp	0.9	0.7%	0.0%
Artificial and highly modified wetlands (dams, ring tanks, irrigation channels)	46.5	37.7%	1.7%
Riverine	74.1	60.0%	2.8%
Total	123.4	100.0%	4.6%

8. Referring the NGWS without providing full details of the entire water take

Adani notes that the NGWS could be used to supply water to other proposed coal mines in the surrounding area, but does not specify what volume of water will be supplied or how this will relate to 12.5GL they have been allocated from the Strategic Reserve for the Carmichael Coal Mine. The water licence provided by the Queensland Government to Adani for the Suttor River take authorises take only for ‘*water supply for the Carmichael Coal Mine and Rail Project*’.

The take from the Suttor River of up to 12.5GL per year for the NGWS project is likely to constitute a significant impact on water resources because it amounts to more than 50% of the total strategic reserve for the relevant sub-catchment under the Queensland *Water Plan (Burdekin Basin) 2007*.

Adani has already obtained water permits for additional water take that is not mentioned in the referral. Water Permit 617345 allows the take of 250ML from the Belyando River for mine construction and Water Permit 614017 allow the take of 8050ML from Mistake Creek for mine construction⁵.

The company names the China Stone Coal Project as one of the mines it could supply. The Environmental Impact Statement for the China Stone Project states that the mine will need to source a significant portion of its water supply from off-site, especially in dry years. The project proponent, Macmines Austasia, plans to secure an external supply of up to 12.5 billion litres of water

⁴ <https://wetlandinfo.ehp.qld.gov.au/wetlands/facts-maps/wqip-lower-suttor-river-burdekin/>

⁵ It is unclear whether this permit has been renewed since its initial expiry in January 2018.

per annum.⁶ In its recent EPBC referral for the Alpha North Project, Waratah Coal notes that it too is planning to source water “through the NGWS being developed by Adani”.⁷

As Adani already has more than 50% of the total strategic reserve for the Lower Suttor River sub-catchment which it says it needs for the Carmichael coal mine how can it supply the needs of other planned mines in the northern Galilee Basin? There is also not enough water left in the Strategic Reserve in the Lower Suttor River sub catchment to meet the needs of these other mines.

We believe that referring the NGWS without providing full details of the entire water take is contrary to the objects of the EPBC Act because it will allow the proponent to avoid a full impact assessment of the proposed action on MNES. We request that you exercise your discretion under s 74A EPBC Act to reject the referral or request Adani to provide further information about the extent of impacts to surface water resources that are likely to result from supplying additional billions of litres of fresh water to mines in the area under s 76(2) EPBC Act.

9.MNES: a water resource, in relation to coal seam gas development and large coal mining development.

Adani are arguing that because the North Galilee Water Scheme (NGWS) is a coal mining ‘ancillary activity’ i.e. not a part of the direct mining process, so as such the EPBC water trigger does not apply to the NGWS. But Adani have themselves conceded that the NGWS Project is essential to their mining operations and that the mine cannot proceed without it.

What is an action?

‘Action’ is defined broadly in the EPBC Act and includes: a project, a development, an undertaking, an activity or a series of activities, or an alteration of any of these things.

Actions include, but are not limited to: construction, expansion, alteration or demolition of buildings, structures, infrastructure or facilities; industrial processes; mineral and petroleum resource exploration and extraction; storage or transport of hazardous materials; waste disposal; earthworks; impoundment, extraction and diversion of water; agricultural activities; aquaculture; research activities; vegetation clearance; culling of animals; and dealings with land.

Actions encompass site preparation and construction, operation and maintenance, and closure and completion stages of a project, as well as alterations or modifications to existing infrastructure.⁸

An action may have both beneficial and adverse impacts on the environment, however only adverse impacts on matters of national environmental significance are relevant when determining whether approval is required under the EPBC Act.

The terms used in the EPBC water trigger provisions (such as ‘large coal mining development’) must be read within the context of the EPBC Act itself – including the objects of the Act in s 3 (environmental protection) and the purpose of the water trigger in s 24D (protection of water resources from coal seam gas development and large coal mining development).

⁶ Page 13-25, Surface Water, Section 13, Draft Environmental Impact Statement, Project China Stone

⁷ Waratah Coal (2018) Alpha North Project, Initial Advice Statement, section 3.3.7 Water Supply, page 3-30

⁸ Dept. Of the Environment. Matters of National Environmental Significance Significant impact guidelines 1.1 Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act cannot be read down to be consistent with any definitions of “ancillary activities” in State legislation.

Adani’s position and potentially previous decisions may be inconsistent with the requirements of the water trigger.

The Minister is required to decide whether the NGWS Project (the action) ‘involves a large coal mining development’ that is likely to have a significant impact on a surface water resource (s 24D EPBC Act).

The definition of ‘large coal mining development’ in s 528 EPBC Act. ‘Large coal mining development’ means ‘any coal mining activity that has, or is likely to have, a significant impact on water resources [...] when considered with other developments [...]’.

Arguably, the NGWS Project is captured by the definition ‘any coal mining activity’ because ‘any’ favours a broad interpretation including all ‘activities’ that form part of the large scale development of mining for coal.

So what meaning does the DoEE ascribe to the term ‘involves a large coal mining development’ within the context of the EPBC Act itself with reference to the definition of ‘large coal mining development’ in s 528 EPBC Act.

Additionally, the surface water impacts may be ‘significant’ when considered together with the groundwater impacts of the mine from dewatering. A focus on the significance of the actual impact of all of the mining activities (groundwater drawdown and the interactions between surface water take and groundwater drawdown on the ephemeral rivers in the sub-catchment) is important and should be considered in full by the IESC.

10. Groundwater drawdown to affect streamflow to the NGWS

The Carmichael Mine as currently proposed would extract an estimated 9.5 billion litres of groundwater each year. Over 90 years that adds up to 855 billion litres. Other estimates are that Some 355 billion litres (GL) of water will be removed from the groundwater aquifers over the life of the Carmichael mine⁹

The Carmichael coal mine EIS states that the company expects the mine to cause 30 metre drawdown of groundwater at its greatest impact, resulting in a seven percent reduction in flow of the Carmichael River, and death of downstream vegetation.

Removing this water to access the coal seam will reduce water pressure in the aquifer with knock-on effects.

According to the Supplementary Environmental Impact Statement (SEIS) submitted by Adani, “maximum impacts in excess of 300m are predicted” for the local water table. Beyond the mine boundary, Adani’s groundwater model predicts water table levels to drop “typically between 20 and 50m” and “up to around 4m in the vicinity of the [Carmichael] river.

If 855 GL are pumped over the mine life what would the drop in the Carmichael water table? Could the Carmichael River dry up completely and cease to flow into the Belyando River? There are no

⁹d3n8a8pro7vhmx.cloudfront.net/lockthegate/pages/686/attachments/original/1379817274/Final_Report_Draining_the_Lifeblood_Sept19th2013.pdf?1379817274

stream flow records for the Carmichael River so it depends on the quality of groundwater and surface water modeling to predict just what could happen to the Carmichael River flows and subsequently flow volumes at the NGWS off-take site. That impact has not been assessed.

“The mine will also have a profound impact on the Carmichael and Belyando Rivers. The loss of groundwater inflow to the Carmichael River will increase the periods of no flow in the river thus harming downstream users and adversely impacting on the vegetation that lines the watercourse.

"The mine also represents a major threat to water quality, with plans to directly discharge polluted mine water into the Carmichael River - a major river system which is vital to the future of primary production and the environment in the region"¹⁰

Reduced flow in Carmichael River would reduce flow to the Belyando River and ultimately to the NGWS water off take site as well as downstream where there are Matters of National Environmental Significance (MNES).

What is an EPBC significant impact?

A ‘significant impact’ is an impact which is important, notable, or of consequence, having regard to its context or intensity. Whether or not an action is likely to have a significant impact depends upon the sensitivity, value, and quality of the environment which is impacted, and upon the intensity, duration, magnitude and geographic extent of the impacts

Due to the high uncertainty surrounding groundwater, the EPBC independent scientific committee [recommended improvements in groundwater modelling and monitoring](#) before proceeding with the project. That needs to include an estimation of the level of significance of expected impacts on reduced flows in the Carmichael and Belyando Rivers from groundwater drawdown for the Carmichael coal mine over its 90 year lifetime before further decisions to inform the viability of the NGWS and its impacts on MNES downstream can be made.

11.MNES: Nationally threatened species and ecological communities

One of the principles of ecologically sustainable development (ESD) (s.3A of the EPBC Act is that

(d) the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making.

A CSIRO analysis *Priority Threat Management for Imperilled Species of the Queensland Brigalow Belt* concluded the following¹¹:

Our analysis indicates that in a highly transformed region such as the **Brigalow Belt**, threat management strategies alone may be insufficient to secure all species. Nine of the fauna species considered were unable to be secured to a 50% chance of persistence even with implementation of all strategies – in these cases, more intensive species-specific management, much of which exists in recovery plans, is likely to be required to avoid species losses.

...

¹⁰ Tom Crothers, former senior QLD government water planner. [Draining the Lifeblood: Groundwater impacts of coal mining in the Galilee Basin](#)

¹¹ Ponce Reyes, R, Firn, J, Nicol, S, Chadès, I, Stratford, DS, Martin, TG, Whitten, S, Carwardine, J 2016 Priority Threat Management for Imperilled Species of the Queensland Brigalow Belt CSIRO, Brisbane <http://eprints.qut.edu.au/96921/1/Brigalow-Belt-PTM-study.pdf>

There are many uncertainties in future conditions for the **Brigalow Belt bioregion**. For example, the consequences of climate change and future developments may vary from current predictions and may compound the existing threats and accelerate declines. A **precautionary approach** suggests that we should invest early, monitor and review the effectiveness of strategies, and be vigilant in identifying emerging changes.

This research highlighted a number of important incidental findings that led them to make recommendations for future directions. These include:

- Ongoing effort to predict future threats, their likely consequences on native species and how to minimise negative impacts (e.g., climate change, expansion of CSG, **coal mining** or intensive agriculture, and invasive flora and fauna).

Accumulating threats are posing significant challenges to the survival of the unique biodiversity of the Brigalow Belt bioregion. This report presents crucial and timely information for the future of the imperilled species of this biodiversity hotspot. Effective threat management strategies have the potential to save 12 of the 21 species that are otherwise likely to be lost from the region in the next 50 years.

12.MNES endangered Threatened Ecological Community RE 11.3.1 and nationally important wetlands downstream of the NGWS

The Suttor River flows north to The Scartwater Aggregation and Lake Dalrymple which are DIWA wetlands. South of the NGWS this river provides habitat that supports threatened species and ecological communities.

An impacted MNES is Regional Ecosystem 11.3.1. It is a Brigalow endangered Threatened Ecological Community that comprises ten per cent of the regional ecosystem complex **RE 11.3.25/11.3.37/11.3.1** that extends for 54km downstream from the NGWS

13.Threatened MNES wildlife species downstream of the NGWS

We note that all but one threatened species present or that may be present in the footprint of the NGWS such as the ornamental snake (EPBV – Vulnerable) have no recovery plan¹². This is despite many mining applications in the Northern Brigalow Belt listing this species as being present.

Recovery Plan not required, the approved conservation advice for the species provides sufficient direction to implement priority actions and mitigate against key threats (29/04/2014). This species previously required a recovery plan as it was included in the Commenced List (1/11/2009).

No Threat Abatement Plan has been identified as being relevant for this species

The sources for the approved conservation advice for this species date between 1997- 2005, well before the massive coal mines in the Galilee Basin were being proposed. This advice does not address management of mining ancillary activities such as downstream impacts on this species from the NGWS, where annual water takes will be 12.5GL/yr or more over the 90 year lifetime of the Carmichael coal mine.

We consider this approved conservation advice urgently needs updating as more large scale coal mines besides the Carmichael mine, among the biggest in the world, are planned for the Galilee Basin. In light of the paucity of information on biodiversity and hydrogeology in the Galilee Basin the

¹² http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1193

Precautionary Principle should prevail in order to meet the Ecological Sustainable Development requirement of the EPBC Act.

A Protected Matters search of the area downstream of the NGWS which contain the endangered Brigalow TEC RE11.3.1 as part of an ecosystem complex extending ~ 54 km revealed the following species that may occur, are likely to occur or which are known to occur (Table 2).

How many of these EPBC-listed species are present and are those that are in sufficient numbers to be classed as significant or there in significant habitat? Will the NGWS project's pumping withdrawals have a significant impact on any of these species, either at 12.5GL/yr or larger volumes for other planned Galilee Mines the project proposes to service?

Table 2. Protected Matters Search which incorporates RE 11.3.1

Report Generation ID: R6813V Coordinates: -21.464508,146.826411 -21.46323,146.829158 -21.460674,146.829158 -20.894676,146.808559 -20.894676,146.970607 -21.465786,146.998073 -21.464508,146.826411 Area Type: polygon
Buffer Distance: 1 km

Listed Threatened Ecological Communities

Brigalow (*Acacia harpophylla* dominant and codominant) Endangered Community known to occur

Brigalow (*Acacia harpophylla* dominant and co-dominant) is eligible for listing as an **Endangered** ecological community as it has declined to approximately 10% of its former area (Criteria 1 for TEC listing.¹³

Estimated extent Brigalow TEC - RE 11.3.1 Pre-clearing 783,000 ha; Remnant 80,000 ha (2015) (QLD Herbarium).

Listed Threatened Species

Red Goshawk Vulnerable Likely to occur **Recovery Plan**¹⁴

Squatter Pigeon (southern) Vulnerable Likely to occur **No recovery plan**. Use Conservation Advice¹⁵

Star Finch (eastern), Star Finch (southern) Endangered Likely to Occur **No recovery plan**¹⁶

Southern Black-throated Finch Endangered Likely to Occur **New Recovery Plan required**¹⁷

Australian Painted Snipe Endangered Likely to occur **Recovery Plan required**

Mammals

Northern Quoll Endangered Known to occur **Recovery Plan required**¹⁸

Ghost Bat Vulnerable Likely to occur **Recovery Plan required**¹⁹

Greater Glider Vulnerable Likely to occur **Recovery Plan required**²⁰

Koala Vulnerable May occur **Recovery Plan required**²¹

Reptiles

Ornamental Snake - Vulnerable Likely to occur **No recovery plan**. Use Conservation Advice²²

Yakka Skink - Vulnerable May occur **No recovery plan**. Use Conservation Advice²³ Mount Cooper Striped Skink, Mount Cooper

Striped Lerista - Vulnerable May occur. **No recovery plan**.²⁴

Plants

Bluegrass Vulnerable Likely to occur. **No Recovery Plan**²⁵

Waxy Cabbage Palm Vulnerable May occur. **No recovery Plan**²⁶

Nationally Important Wetlands downstream of the GBWS

Scartwater Aggregation - It is just north of RE11.3.1 on the Suttor River (126 flora & fauna native spp.)

squatter pigeon (southern subspecies)-vulnerable **No recovery plan**. Use Conservation Advice

Lake Dalrymple - North of Scartwater Aggregation.

bridled naitail wallaby- endangered - **Recovery Plan**²⁷

greater glider – vulnerable - **Recovery Plan required. Conservation plan at**²⁸

squatter pigeon (southern subspecies)-vulnerable **No recovery plan**. Use Conservation Advice

bluegrass (*Dichanthium setosum*) – vulnerable **Recovery Plan not required** Conservation advice²⁹

squatter pigeon (southern subspecies)-vulnerable **No recovery plan**. Use Conservation Advice

bluegrass (*Dichanthium setosum*) – vulnerable **Recovery Plan not required** Conservation advice³⁰

¹³ <http://www.environment.gov.au/node/14496>

¹⁴ <http://www.environment.gov.au/biodiversity/threatened/recovery-plans/national-recovery-plan-red-goshawk-erythrotriorchis-radiatus>. In effect under the EPBC Act from 24-Jul-2012 as *Erythrotriorchis radiatus*.

¹⁵ <http://www.environment.gov.au/biodiversity/threatened/species/pubs/64440-conservation-advice-31102015.pdf>. In effect under the EPBC Act from 27-Oct-2015.

¹⁶ <http://www.environment.gov.au/biodiversity/threatened/species/pubs/26027-conservation-advice.pdf>.

¹⁷ <http://www.environment.gov.au/biodiversity/threatened/recovery-plans/national-recovery-plan-black-throated-finch-southern-subspecies-poephila-cincta-cincta>

¹⁸ <http://www.environment.gov.au/resource/national-recovery-plan-northern-quoll-dasyurus-hallucatus>.

¹⁹ <http://www.environment.gov.au/biodiversity/threatened/species/pubs/174-conservation-advice-05052016.pdf>

²⁰ <http://www.environment.gov.au/biodiversity/threatened/species/pubs/254-conservation-advice-20160525.pdf>.

²¹ <http://www.environment.gov.au/biodiversity/threatened/species/pubs/197-conservation-advice.pdf>

²² Department of the Environment (2014). *Approved Conservation Advice for Denisonia maculata (Ornamental Snake)*. Canberra: Department of the Environment. Available from: <http://www.environment.gov.au/biodiversity/threatened/species/pubs/1193-conservation-advice.pdf>. In effect under the EPBC Act from 29-Apr-2014.

²³ Department of the Environment (2014). *Approved Conservation Advice for Egernia rugosa (Yakka Skink)*. Canberra: Department of the Environment. Available from:

<http://www.environment.gov.au/biodiversity/threatened/species/pubs/1420-conservation-advice.pdf>. In effect from 29-Apr-2014.

²⁴ <http://www.environment.gov.au/biodiversity/threatened/species/pubs/1308-conservation-advice.pdf>.

²⁵ <http://www.environment.gov.au/biodiversity/threatened/species/pubs/14159-conservation-advice.pdf>.

²⁶ <http://www.environment.gov.au/biodiversity/threatened/species/pubs/64581-conservation-advice.pdf>

²⁷ <http://www.environment.gov.au/biodiversity/threatened/publications/recovery/bridled-naitail-wallaby-onychogalea-fraenata-2005-2009>

²⁸ <http://www.environment.gov.au/biodiversity/threatened/species/pubs/254-conservation-advice-20160525.pdf>.

Recovery Plan required, stopping decline and supporting recovery is complex, due to the requirement for a high level of planning to abate the threats, a high level of support by key stakeholders, a high level of prioritisation and a highly adaptive management process. Existing mechanisms are not adequate to address these needs (3/05/2016).

²⁹ <http://www.environment.gov.au/biodiversity/threatened/species/pubs/14159-conservation-advice.pdf>.

MNES: Listed Migratory Species (Table 2 cont.)

All species on the list of migratory species are matters of national environmental significance under the EPBC Act. An action will require approval if the action has, will have, or is likely to have, a significant impact on a listed migratory species. The action must be referred to the Minister and undergo an environmental assessment and approval process. Note, that some migratory species are also listed as threatened species.

Fork-tailed Swift – Marine Migratory - likely to occur – *Important habitat is Non-breeding habitat only: Found across a range of habitats, from inland open plains to wooded areas, where it is exclusively aerial*

Oriental Cuckoo – Migratory Terrestrial - may occur – *Important habitat is Non-breeding habitat only: monsoonal rainforest, vine thickets, wet sclerophyll forest or open Casuarina, Acacia or Eucalyptus woodlands. Frequently at edges or ecotones between habitat types*

Black-faced Monarch – Migratory Terrestrial - likely to occur - *Avoid impacts to important habitats³¹ - Important habitats include Wet forest specialist, found mainly in rainforest and wet sclerophyll forest, especially in sheltered gullies and slopes with a dense understorey of ferns and/or shrubs*

Yellow Wagtail – Migratory Terrestrial - may occur

Common Sandpiper – Migratory Wetlands - may occur

Sharp-tailed Sandpiper – Migratory Wetlands - may occur

Curlew Sandpiper – Migratory Wetlands – Critically endangered - may occur

Pectoral Sandpiper – Migratory Wetlands - may occur

Latham's Snipe – Migratory Wetlands - may occur

Osprey – Migratory Wetlands - likely to occur - *Important habitat includes terrestrial wetlands*

Four of the above migratory species are listed in the **Draft referral guideline for 14 birds listed migratory under the EPBC Act** i.e. Fork-tailed Swift; Oriental Cuckoo; Black-faced Monarch; Osprey.

This draft guideline states that in most cases, avoiding impacts to important habitat of the five breeding species (Satin Flycatcher, **Black-faced**, Black-winged and Spectacled **Monarchs**, Rufous Fantail) and the White-throated Needletail and implementing mitigation measures will help reduce the risk of a significant impact and therefore the need to refer an action for EPBC Act approval relating to these species.

Given population sizes and limited distributions, the **Black-winged Monarch** and Spectacled Monarchs (Southern, Wet Tropics and Cape York subspecies) are likely to be most susceptible to significant impacts (Tables 4 and 5).

Actions that will have or are likely to have a significant impact on one of these birds are those that substantially modify (including by fragmenting altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species and or, seriously disrupt the lifecycle (breeding feeding, migration or resting) of an ecologically significant proportion of each species population.

How many of these EPBC-listed species are present and are those that are in sufficient numbers to be classed as significant or there in significant habitat? Will the NGWS project's pumping withdrawals have a significant impact on any of these species, either at 12.5GL/yr or larger volumes for other planned Galilee Mines the project proposes to service?

We note that no comprehensive seasonal and day and night fauna and flora surveys appear to have ever been done downstream of the NGWS. A SPRAT search of these species showed only the Red goshawk has a Recovery Plan. No EPBC recovery plan or conservation plan deals with threats from downstream impacts from a large scale off-take such as the NGWS. The downstream riparian area containing TEC RE 11.3.1 is some 54 km in length it appears way too big an area to consider for an offset (Fig. 7).

³⁰ <http://www.environment.gov.au/biodiversity/threatened/species/pubs/14159-conservation-advice.pdf>.

³¹ <http://www.environment.gov.au/system/files/resources/c05f5b87-0a99-4998-897e-7072c236cf83/files/migratory-birds-draft-referral-guideline.pdf>



Fig 7. Area 54 km downstream of NGWS that contains the regional ecosystem complex RE 11.3.25/11.3.37/11.3.1 within the river system

The downstream impacts of the NGWS on MNES would need to be clearly evaluated before EPBC approval can be considered for the NGWS.

Accordingly, the Minister should declare the Great Barrier Reef World Heritage to be a controlling provision for the purposes of the EPBC assessment, and use his power under section 76 of the EPBC Act to require the proponent to provide more information about matters of national environmental significance. This should include intensive field studies covering the entire migration period for species likely to appear in the project impact area.

14. Downstream impacts of the NGWS

One of the recommended conditions for referral of a project which has a high risk of significant impact on an EPBC-listed Brigalow Belt reptile is the loss, fragmentation or change in the ecological character or function of important habitat which is likely to adversely affect the recovery of one or more Brigalow Belt reptile species.

The NGWS project has the potential for such a significant impact through habitat loss and fragmentation and habitat degradation. Such impacts on brigalow reptiles and possible mitigation actions are outlined in Table 3.

Adani’s consultants have not considered or quantified the downstream impacts of the taking of 12.5 GL/year from the Suttor River on MNES in the NGWS off-take site. For example downstream impacts on any regional ecosystems associated with any Brigalow TECs and the vulnerable ornamental snake have not been addressed.

Table 3 Impacts on brigalow reptiles and possible mitigation actions

Threat	Impact	Mitigation
Habitat loss and fragmentation	<ul style="list-style-type: none"> • Restricted reptile dispersals • Isolated populations • Genetic fragmentation • Increased habitat degradation from edge effects 	<ul style="list-style-type: none"> • Maintain habitat connectivity at a landscape scale • Maintain microhabitat features in place
Habitat degradation	<ul style="list-style-type: none"> • Reduced habitat quality and function • Reduced resilience of populations to environmental change 	<ul style="list-style-type: none"> • Maintain wet season stream flow volumes and frequency • Maintain water quality

15. Apparent moist riparian habitats downstream from GBWS to support high biodiversity and TEC RE11.3.1

There is an apparent correlation of the regional ecosystem complex RE 11.3.25/11.3.37/11.3.1 with the surface expression of derived Groundwater Dependent Areas (GDEs) – high to moderate confidence along the Sutor River downstream from the planned NGWS which is found north to latitude -21.019⁰; longitude 146.869⁰ (Fig. 8)

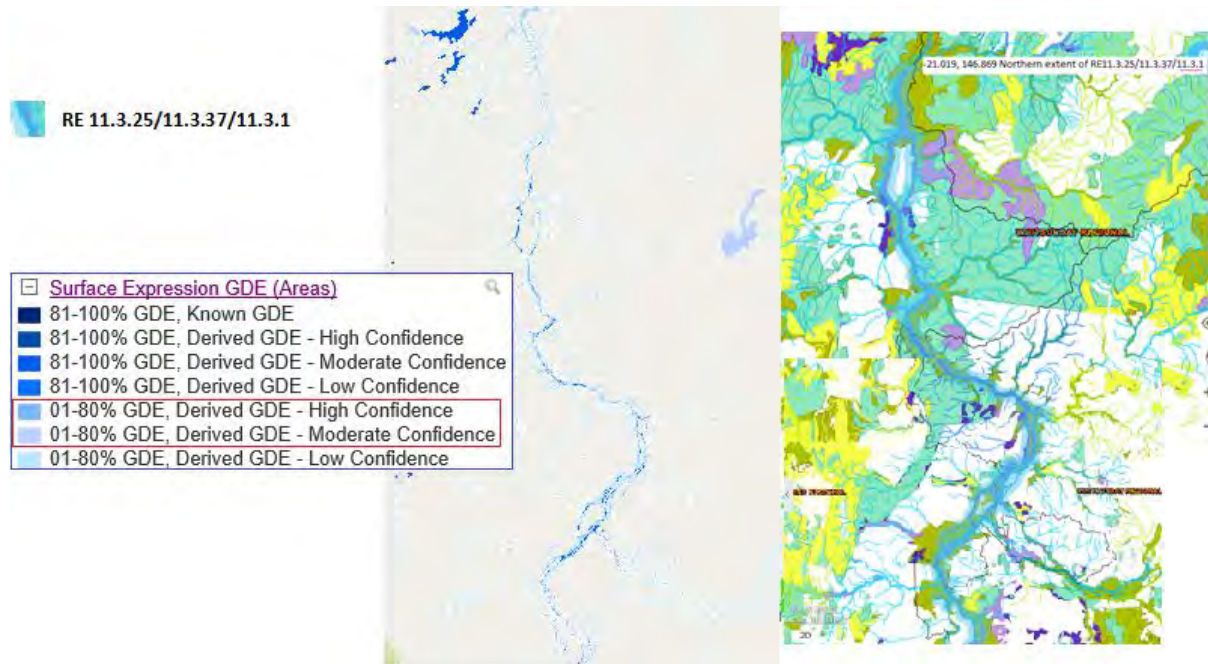


Fig. 8 Apparent correlation of surface expression of derived Groundwater Dependent Areas (LHS) with the location of RE 11.3.25/11.3.37/11.3.1 downstream of the NGWS (RHS in light blue)

RE 11.3.25 and 11.3.37 are both described by the Queensland Herbarium as “Riverine wetland or fringing riverine wetlands.” RE 11.3.1 is described as being “Associated with Cainozoic alluvial plains which may be occasionally flooded. Landforms range from level to very gently sloping plains, alluvial flats, drainage floors, back-swamps and abandoned channels.” (Table 3)

This indicates that surface conditions downstream are probably moist all or most of the time which also indicates that this stretch of the river may have high biodiversity values and good habitat for MNES species which may be present e.g. the ornamental snake.

Table 4 Queensland Herbarium descriptions of RE 11.3.25/11.3.27/11.3.1

Regional Ecosystem	Description	Notes	Wetland	VMA class	Biodiversity	Soils
11.3.25	Eucalyptus tereticornis or E. camaldulensis woodland fringing drainage lines	Known to be important habitat for riparian freshwater turtle species.	Riverine wetland or fringing riverine wetland.	LC	OC	deep, alluvial, grey and brown cracking clays
11.3.37	Eucalyptus coolabah fringing woodland on alluvial plains	Habitat for a diverse range of fauna particularly birds. Hollow trees are critical habitat.	Riverine wetland or fringing riverine wetland. Includes larger waterholes within the stream channels. Flood events drive recruitment of coolabah.	LC	NCAP	Soils are bed loads of clay or silt with cobbles and boulders in some areas.
11.3.1	Acacia harpophylla and/or Casuarina cristata open forest on alluvial plains	Palustrine wetland (e.g. vegetated swamp). Habitat for threatened fauna species including painted honeyeater,	Associated with Cainozoic alluvial plains which may be occasionally flooded.	E	E	Associated with Cainozoic alluvial plains which may be occasionally flooded. Landforms range from level to very gently sloping plains, alluvial flats, drainage floors, back-swamps and abandoned channels. Associated soils are predominantly deep to very deep cracking clays, sometimes with gilgai or texture contrast soils with sandy surface

RE 11.3.25/11.3.37/11.3.1 is highly likely to be inflow dependent on water in addition to rainfall (Fig.9). Ecosystems there would rely on seasonal wet season flooding down the Suttor River.

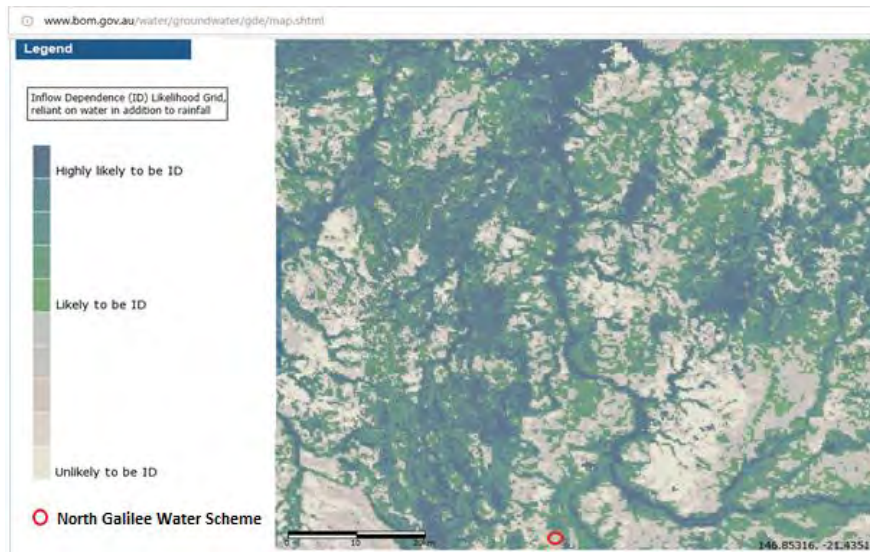


Fig.9 Section of the river 54 km downstream from the NGWS classified as highly dependent on water inflows in addition to rainfall, and which contains the regional ecosystem complex RE 11.3.25/11.3.37/11.3.1

Biodiversity including MNES in this riparian regional ecosystem complex therefore would be sensitive to the loss of water for large mining projects. Off takes would occur during high flows in the wet season. This is the time when most species in this part of the Northern Brigalow Belt breed because this is when most food sources are abundant if the wet season does not fail, as it can e.g. (Fig. 10 a-c).

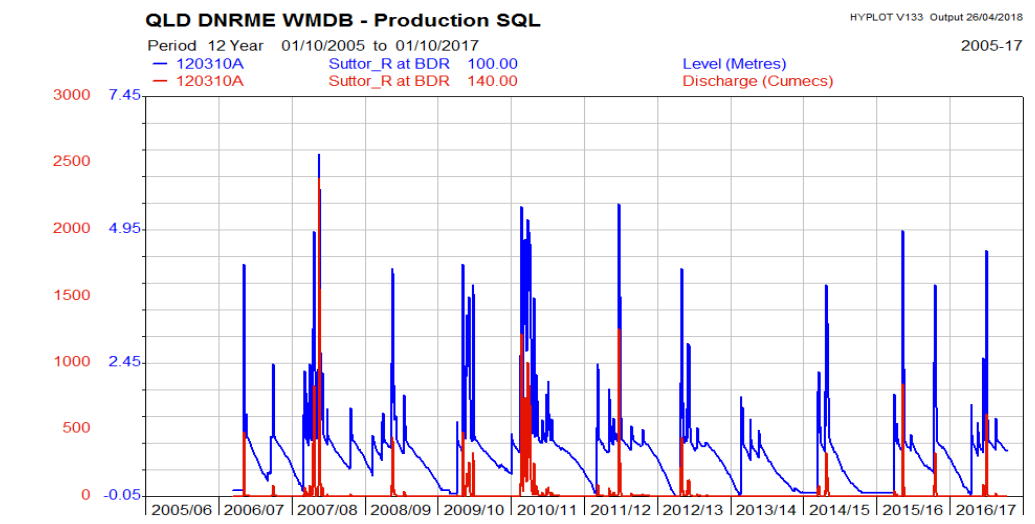


Fig.10 (a) Failure of the 2013/2014 wet season as shown in water levels and discharge data between 2006 and 2017 for the Suttor River at Bowen Development Road³².

³² https://water-monitoring.information.qld.gov.au/wgen/users/1f9f078e560248e3a26895001006aa0f/120310a.rsrspf_org.cpl.plt.png?1529501649087

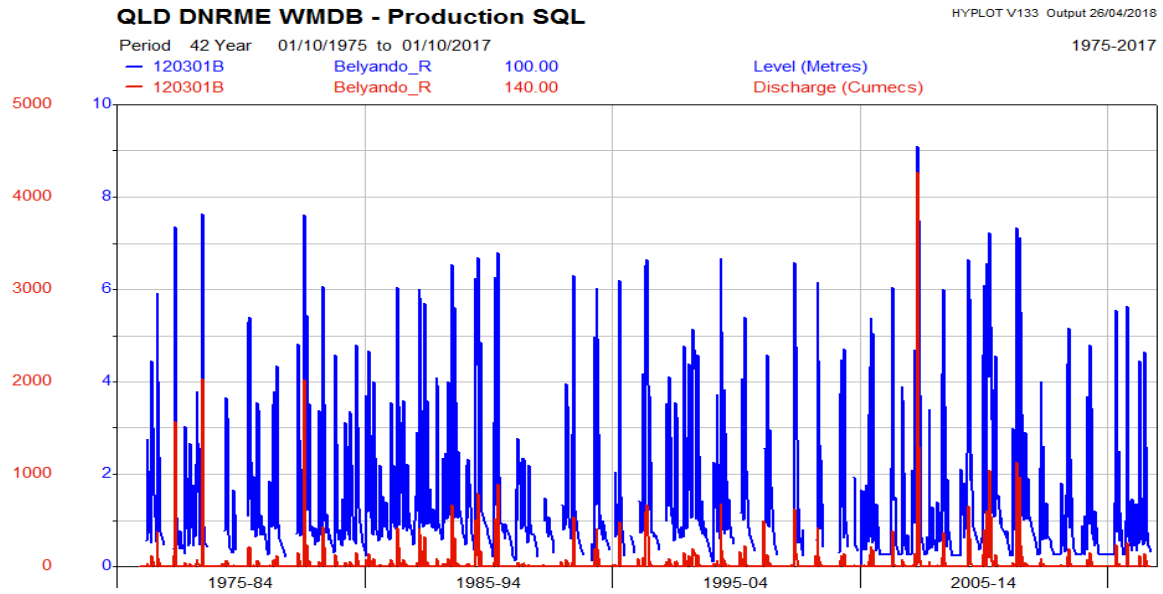


Fig.10 (b) Failure of the 1991/1992 wet season as shown in low water levels and discharge data between 1975 and 2017 for the Belyando River at Gregory Development Road³³.

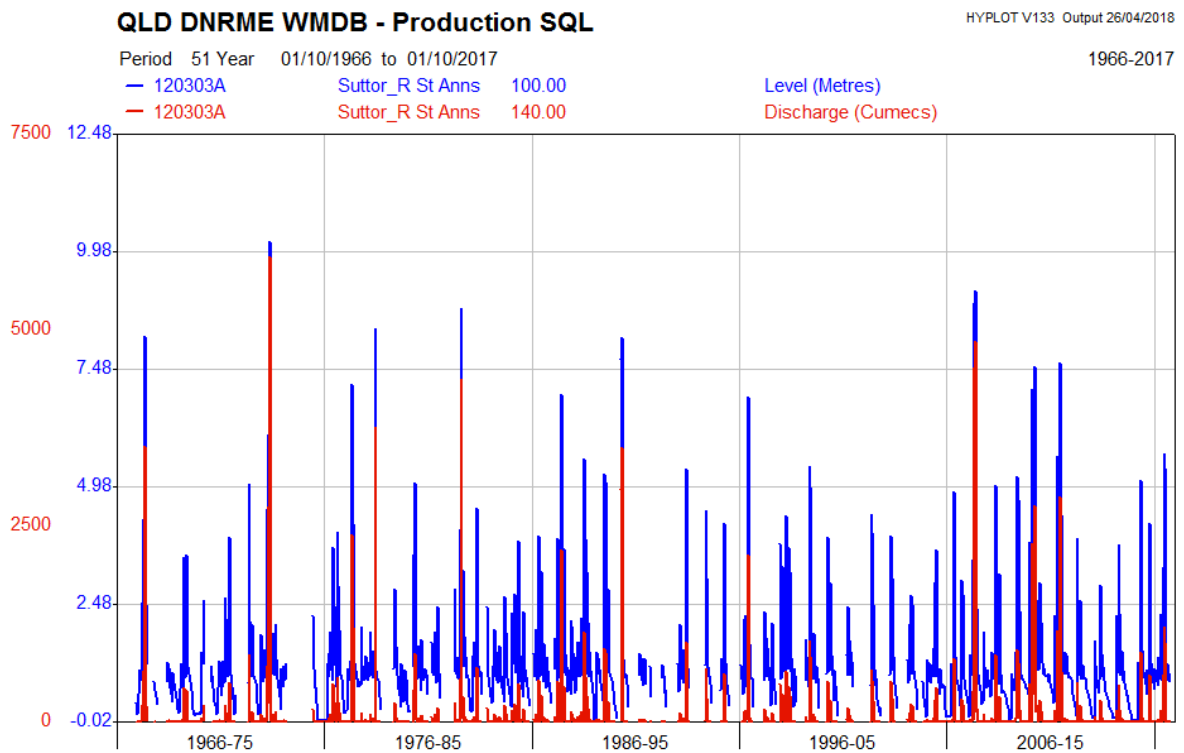


Fig.10 (c) Failure of the 1991/1992 wet season as shown in low water levels and discharge data between 1966 and 2016 for the Suttor River at Saint Anns downstream of the NGWS site

As the graphs show, discharge is only high in the wet seasons and most rain falls in January and February. The rest of the year flows are usually zero to very low.

³³ https://water-monitoring.information.qld.gov.au/wgen/users/6fbc4c93f94e4d0dae4a91ec9e8788f2/120301b.rsrspf_org.cpl.plt.png?1529846350558

16.RE 11.3.1 an endangered EPBC-listed Threatened Ecological Community (TEC) with habitat suitable for MNES threatened species

The ornamental snake is an EPBC-listed vulnerable species found in moist Brigalow ecosystems where it can hunt its favourite food of frogs sheltering in deep moist clay cracks. The soils associated with RE 11.3.1 are described by Queensland Herbarium as predominantly deep to very deep cracking clays, sometimes with gilgai or texture contrast soils with sandy surface. Given RE 11.3.1 is a riparian ecosystem located in the Suttor River which is subject to flood seasonal inundation, the ornamental snake is highly likely to be present.

In Section 5 of the EPBC Draft Referral guidelines for the nationally listed Brigalow Belt reptiles, (which includes the ornamental snake) criteria for a significant impact on a MNES are defined.

Four of those criteria relate to impacts on important populations of the listed vulnerable species. They state that however, given that the listed Brigalow Belt reptiles are difficult to detect and population information is limited, the department regards **important habitat as a surrogate for important populations** in the assessment of whether an action is likely to have a significant impact on one or more of these species.

It would appear that the TEC regional ecosystem 11.3.1 in Suttor River downstream from the NGWS could meet the requirement for important habitat, given it is in areas highly likely to receive seasonal wet season flooding inundation; high to moderate confidence for the expression of surface GDEs; and is a Brigalow ecosystem with clay cracking soils able to provide year round moist habitat for frog populations, its favourite food source.

Suitable habitat for any one of the listed Brigalow Belt reptiles is considered important if it is:

1. habitat where the species has been identified during a survey near the limit of the species' known range;
2. large patches of contiguous, suitable habitat and viable landscape corridors (necessary for the purposes of breeding, dispersal or maintaining the genetic diversity of the species over successive generations); or
3. a habitat type where the species is identified during a survey, but which was previously thought not to support the species.

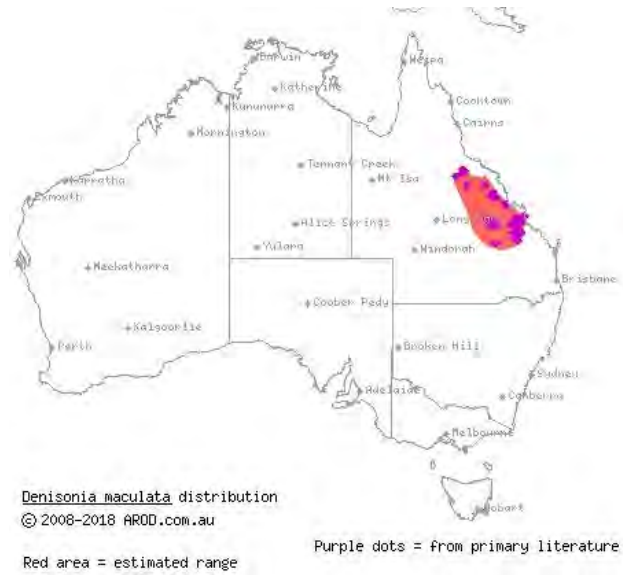
RE 11.3.1 is identified listed as a Brigalow TEC that has suitable habitat for the ornamental snake i.e. gilgai depressions and mounds and is highly likely to have connectivity between gilgai and other suitable habitats because it is in an ecosystem complex RE 11.3.25/11.3.37/11.3.1 that runs for many kilometres continuously in the riparian section of Suttor Creek at and downstream of the NGWS.

Table 2 in this document lists suitable habitat for Brigalow reptiles Table 5. RE 11.3.1 is not listed but has suitable conditions, is within the known range of this species and is close to an area identified as where species or species habitat is likely to occur. Adani's ecology consultants also identified the NGWS pipelines as having suitable habitat for the ornamental snake.

Table 5 Regional ecosystems known to have the ornamental snake

Ornamental snake	Open-forests to woodlands associated with gilgai formations and wetlands. These are commonly mapped as QLD REs 11.3.3, 11.4.3, 11.4.6, 11.4.8, 11.4.9, 11.5.16 or mapped as cleared but where the above REs formerly occurred
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RE 11.3.1 is not listed but is near to the recorded sites of this species (Fig. 11 (a) & (b))



<http://www.arod.com.au/arod/reptilia/Squamata/Elapidae/Denisonia/maculata>

Fig. 11(a) Ornamental snake distribution

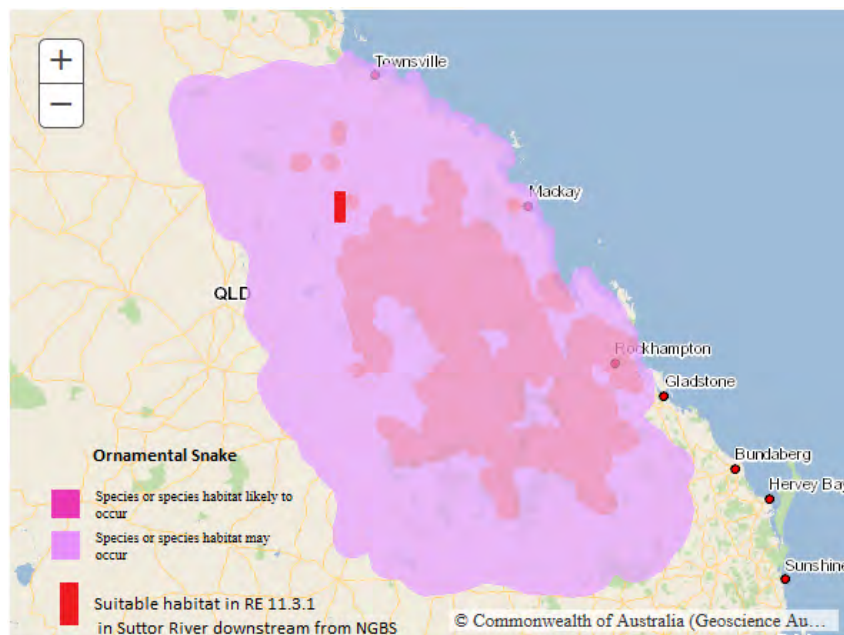


Fig.11(b) Suitable habitat for the ornamental snake

Source: SPRAT Department of National Environment Significance

As RE 11.3.1 comprises only ten per cent of the RE 11.3.25/11.3.37/11.3.1 complex its health and integrity and suitability as habitat for the ornamental snake may be even more sensitive to impacts from a large taking of seasonal flood flows from the Suttor River especially if the surface expression of GDEs declines as a result.

Both MNES's (the TEC and threatened species) will need to be researched and understood as to the NGWS's near and downstream impacts on RE 11.3.1, the ornamental snake and any other MNES e.g. other EPBC-listed flora and fauna.

RE 11.3.1 is also identified by the Queensland Herbarium as suitable habitat for other threatened vulnerable EPBC fauna species including painted honeyeater (*Grantiella picta*) (Fig. 12).

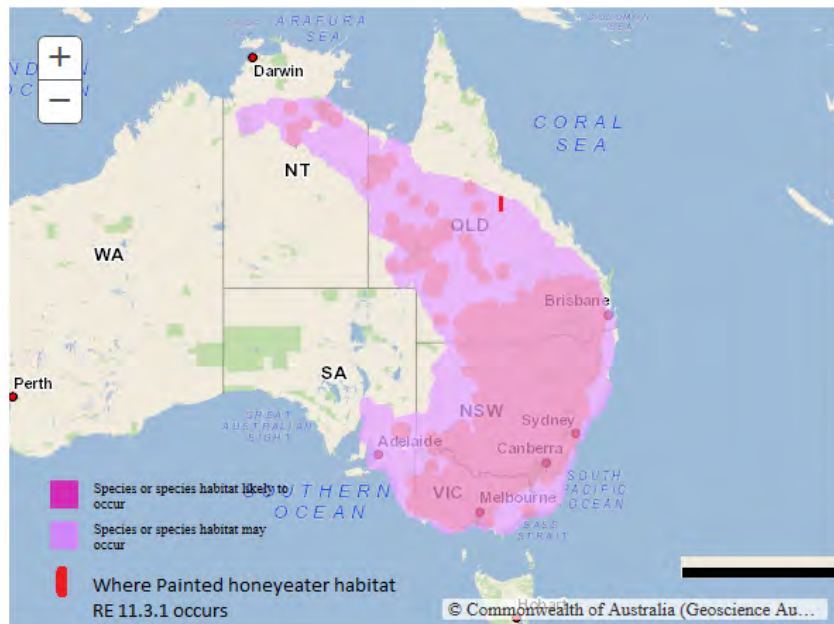


Fig.12 Suitable habitat for the painted honeyeater occurs within RE 11.3.1

17.Impacts of the GBWS on Connectivity: RE 11.3.25/11.3.37/11.3.1 is partially Biocorridor of State Significance for Biodiversity

The regional ecosystem complex RE 11.3.25/11.3.37/11.3.1 runs continuously for ~54 km downstream of the NGWS site.

In BioMaps part of it is classified as part of a very high value statewide biodiversity terrestrial corridor buffer (Fig. 13). This indicates the high biodiversity values downstream of the NGWS.

If the 12.5 GL/year take of water from Suttor River for 90 years has a significant adverse impact on RE 11.3.25/11.3.37/11.3.1 it could affect the integrity of this part of the corridor to the point where its connectivity values were impaired or even lost.

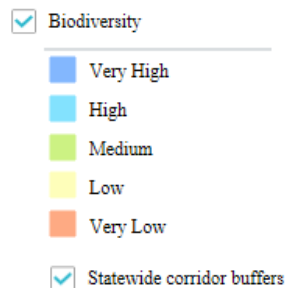
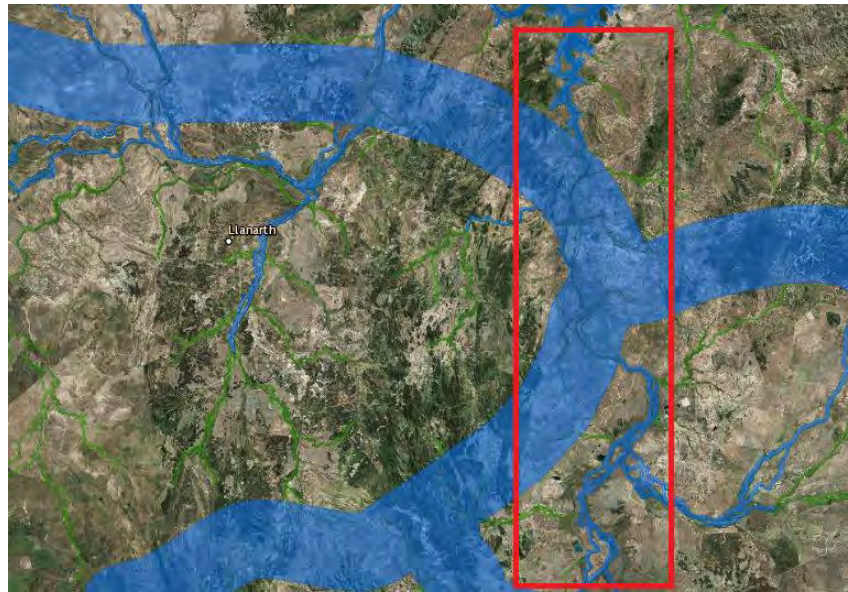


Fig. 13 Part of the area downstream of the NGWS containing the regional ecosystem complex RE 11.3.25/11.3.37/11.3.1 is within a biocorridor of state significance (Source: BioMaps)

If the 12.5 GL/year take of water from Suttor River for 90 years has a significant adverse impact on RE 11.3.25/11.3.37/11.3.1 it could affect the integrity of this part of the corridor to the point where its connectivity values were impaired or even lost.

Yet there are very few records of that biodiversity in the public domain.

The few Wildnet records there are for the Suttor River downstream of the NGWS in the river stretch that includes RE 11.3.25/11.3.37/11.3.1 are listed below in Table 6. Only the sharp-tailed sandpiper is listed as EPBC Migrator (Wetlands) species.

Common Name	Scientific Name	NCA	EPBC	Conservation significant
Fauna				
Channel-billed cuckoo	<i>Scythrops novaehollandiae</i>	C		No
Gould's wattled bat	<i>Chalinolobus gouldii</i>	C	C	No
sharp-tailed sandpiper	<i>Calidris acuminata</i>	SL	Migratory Wetlands	Yes
Flora				
white eclipa	<i>Eclipta prostrata</i>			No
	<i>Eucalyptus melanophloia subsp. melanophloia</i>	C	C	No
	<i>Abutilon leucopetalum</i>	C	C	No
	<i>Gossypium australe</i>	C		No

Table 6 Fauna and flora recorded in the downstream of the NGWS within the river stretch that includes RE 11.3.25/11.3.37/11.3.1

Members of Birdlife Australia and Protect the Bush Alliance did a bird survey in June 2014 west of Nairana National Park and the Mt Douglas property. This is south east of the NGWS site.

It contains RE 11.3.27 where the Suttor River as a much narrower braided channel joins the Belyano River. It gives some idea of the diversity of bird species that can be found in the regional ecosystem even when the area was in a severe drought. Ninety-four bird species were counted in three days 25-28th June 2014 (Fig.14). Only one, the squatter pigeon (southern species) was a threatened EPBC-listed species.

QUEENSLAND DROUGHT SITUATION

as at 26th May 2014

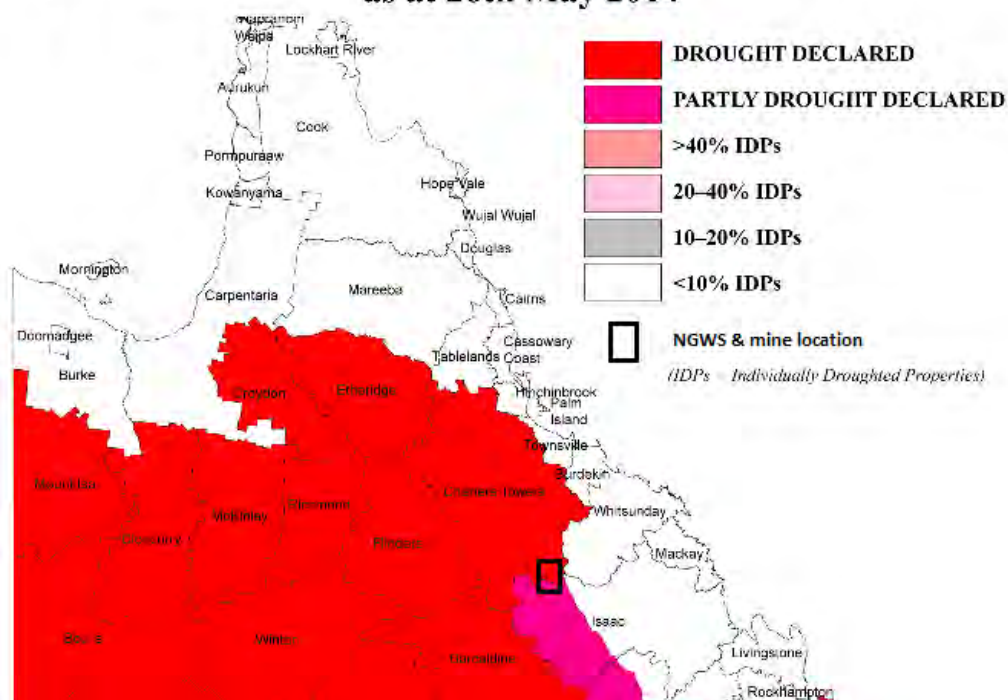


Fig.14 June 2014 bird count location drought in Mt. Douglas south east of NGWS site.

18.The Adani flora and fauna surveys were done in drought

Adani's ecological consultants reported that:

"A detailed environmental impact assessment was completed for the State Development Area MCU Development Permit for the Stage B pipeline and associated infrastructure in the GBSDA. This included an environmental assessment that considered impacts to soil, groundwater, fauna and flora, cultural heritage and social matters. This assessment considered relevant Commonwealth, State and Local legislation."

A MCU Development Permit was submitted to and approved by Charters Towers Regional Council for the upgrade of an off-stream flood harvesting storage and associated infrastructure (NGWS site). This was an impact assessable MCU development application and considered impacts on ecology, soil, water resources and cultural heritage impacts. Both desktop and onsite ecological assessments were undertaken in March and May 2015 for the area that was proposed to be disturbed.³⁴

³⁴ NGWS Commonwealth Matters of National Environmental Significance Review (CDM Smith 2018) (see Attachment 8 to 11).

We note that flora and fauna surveys were not done downstream of the NGWS.

Rainfall for March through May 2015 was very low (Table 7).

Table 7 Rainfall during Adani flora and fauna surveys

Mt Douglas 2015	Rainfall (mm)	Mean	Median
March	4.0	66.1	46.5
April	0.0	36.3	10.9
May	0.0	26.7	12.2

The water off-take area was drought declared February 1st through May 1st 2015 according to Long Paddock records (Fig. 15). This would have affected the flora and fauna survey results that Adani’s consultants took within that time period. To be comprehensive surveys within areas of high rainfall variability such as this need to be done night and day in seasons of dry, average and wet years and preferably over a decade.

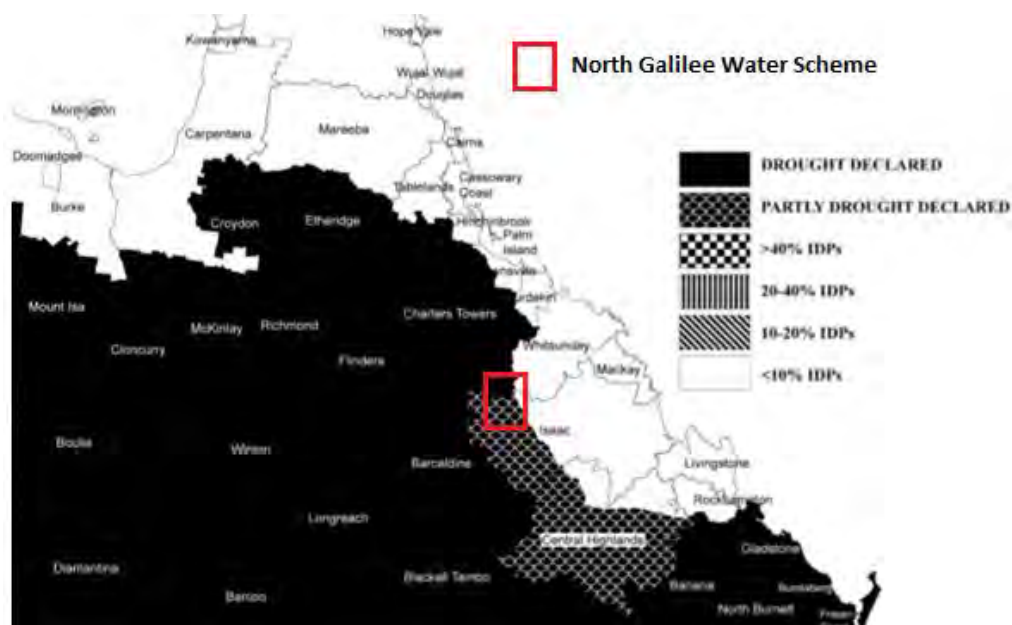


Fig. 15 Queensland drought situation as of February 1st through May 1st 2015

There is no chance of recording MNES species such as the ornamental snake in such dry conditions. Adani ecologists did note that in the pipeline area there was suitable habitat for this species.

That should not be the case for RE 11.3.25/11.3.37/11.3.1 downstream of the NGWS where soil moisture conditions would be much more moist and the deep cracking clays would hold food sources such as sheltering frogs.

So the Adani flora and fauna survey results would be unrepresentative of what is present in RE 11.3.25/11.3.37/11.3.1 and should be regarded as adequate for the NGWS.

EPBC requirements for MNES surveys for threatened reptiles in the Brigalow Belt require at least two surveys done between May and September. The Adani surveys were done in March and May. The March survey would not have represented wet conditions very well because of the drought, so would not be representative of wet season conditions.

Flora and fauna surveys need to be done in RE 11.3.25/11.3.37/11.3.1 downstream of the NGWS in moist but sunny conditions to get at least baseline data and an some information on what species are there, especially in the wet season when most wildlife breed and nest.

19. Conservation Species of Significance

From a review of the information that is available threatened conservation significant species that are there or likely to be in the Brigalow Belt Bioregion include the Brown treecreeper, Red goshawk, squatter pigeon, cotton pgymy goose, Australian painted snipe, koala, ornamental snake, northern quoll, ornamental snake, and yakka skink³⁵. Of these all but the Brown treecreeper and cotton pgymy goose are EPBC MNES listed.

20. Potential impact on MNES downstream from the NGWS

The cumulative impacts of dams, including weirs, **off-river storage** and diversion practices, reduces the frequency and volume of flows to floodplains (Kingsford 2000). These alterations to flow regimes present a significant threat to biodiversity in the Brigalow Belt, impacting on riverine and floodplain flora and fauna. Floodplains in the Brigalow Belt are in locations characterised by extraordinary amounts of biodiversity and are dependent on flows from rivers. In addition, artificial watering points extend the range of and increase the numbers of cats, foxes and pigs which pose further threats to native species (James et al. 1999).³⁶

The Belyando River is a shallow river on a broad flood plain that can flood as wide as 30 km (Communication with a former local grazier). Wet season flooding thus would be crucial for maintaining ecological health and biodiversity in its floodplains and those downstream.

The map showing Inflow dependence on flooding is highly likely in RE 11.3.25/11.3.37/11.3.1 downstream from the NGWS and likely for those regional ecosystems out from the riparian ecosystems (Fig. 16).

³⁵ Ponce Reyes, Rocio; Firn, Jennifer; Nicol, Sam; Chades, Iadine; Martin, Tara; Stratford, Danial; Whitten, Stuart; Carwardine, Josie. *Priority threat management for imperilled species of the Queensland Brigalow Belt*. CSIRO: CSIRO; 2016. csiro:EP154521. <https://doi.org/10.4225/08/58542c54413ee>

³⁶ James CD, Landsberg J & Morton SR 1999 'Provision of watering points in the Australian arid zone: a review of effects on biota' *Journal of Arid Environments* 41, 87–121.

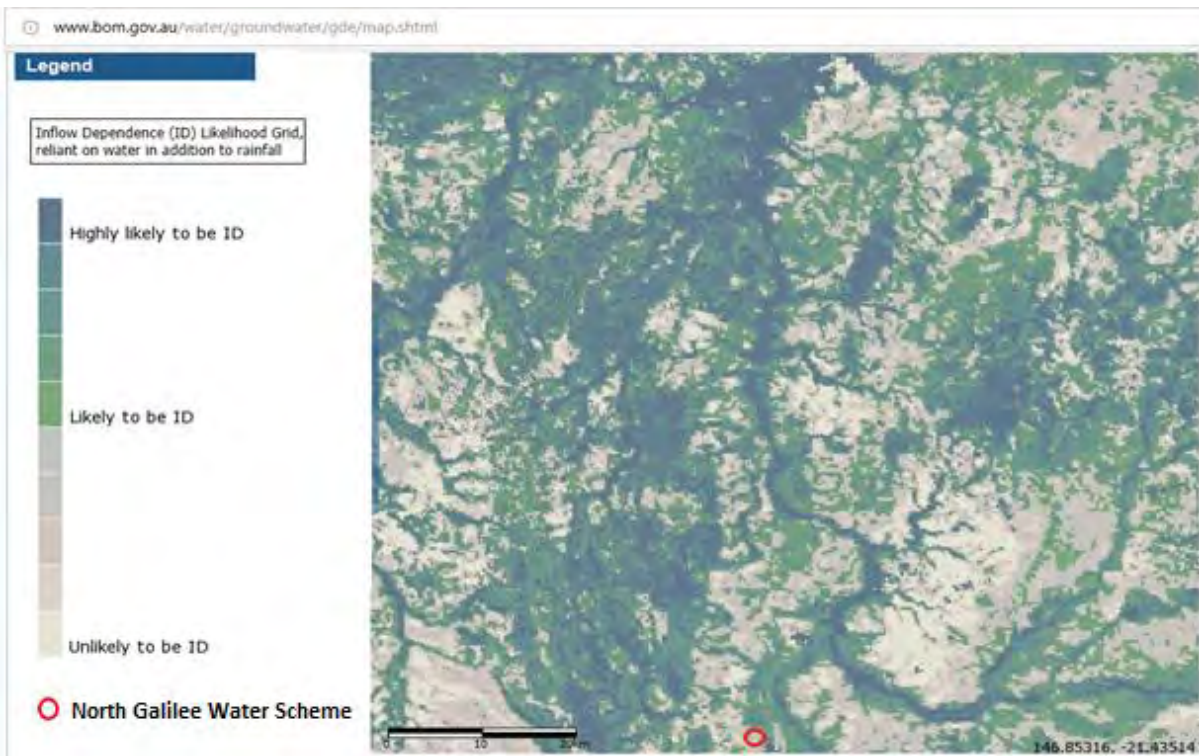


Fig. 16 Areas and likelihood of inflow dependence (e.g. flooding) downstream of the NGWS

Even a small change in the stream flow volume and frequency could likely affect the functioning of those ecosystems. TEC RE11.3.1 is only 10 per cent of RE 11.3.25/11.3.37/11.3.1 so it could be the most affected. What would the effects on biodiversity and connectivity of this ecosystem complex be if the most vulnerable is adversely affected by the NGWS?

The stream flow gauge downstream from the NGWS site is Suttor River at St. Anns. This section of Suttor River receives upstream flows from the Belyando and upstream Suttor river. Their confluence is upstream of the NGWS site (Fig. 17).

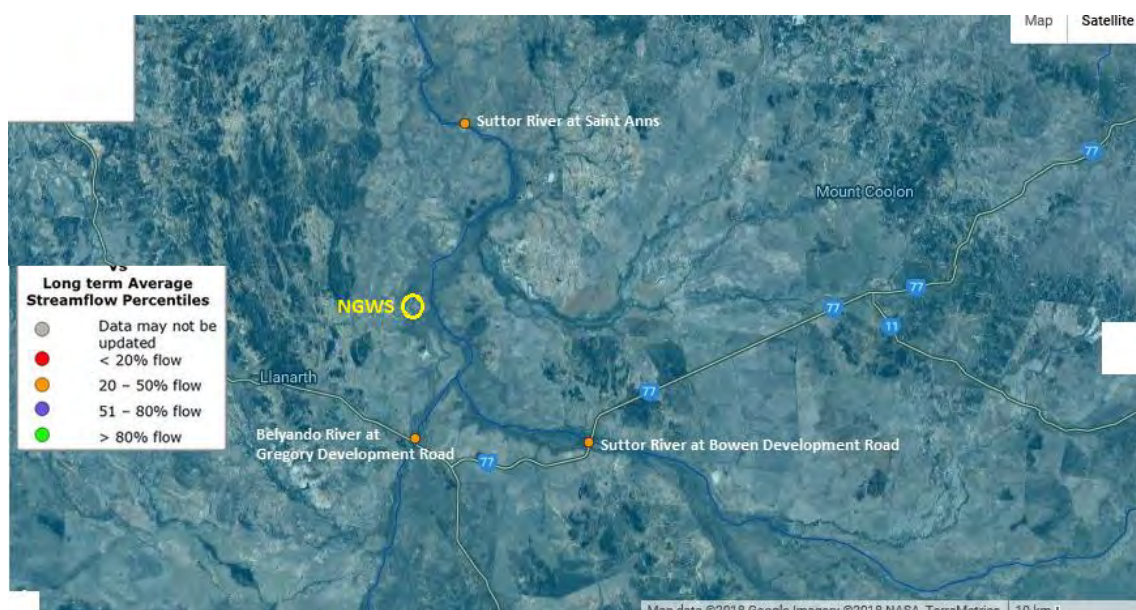


Fig.17 Locations of stream flow monitoring sites upstream and downstream of the NGWS water off-take site

Wet season average (1953-2016) monthly flows Dec-March range from 120-570 GL/month. But the average minimum daily low flows in any month of the year can be zero per month. Mean daily wet season flows range from 3.8 to 20.2 GL/day and median flows range from 0.28 to 2.3 GL/day (Table 8).

Table 8. Stream flow data summary for Suttor River at St Anns downstream from NGWS

120303A Suttor River at St Anns

All data times are Eastern Standard Time

Latest Values	Details	Prepared Outputs	Custom Outputs
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Details

Site no.	120303A
Zone	55
Easting/Northing	491013.000/7652492.000
Latitude	21°13'44.6"S
Longitude	146°54'48.2"E
Site commence	21/08/1967
Site ceased	
Zero gauge	161.805
Datum	AHD
Control	Causeway
Cease to flow level	0.000
Maximum gauged level	6.440
Maximum gauge date	08/02/1978
Distance from stream mouth	88.700 km
Catchment area	50290 sq. km
Gaugings	161 gaugings between 30/04/1953 and 08/11/2016

Flow volume summary (ML)

	Daily			Monthly
	Max	Min	Mean	Median
Jan	389653	0	13552	854
Feb	505966	0	20189	2323
Mar	314596	0	8531	665
Apr	95771	0	2319	40
May	368771	0	3230	0
Jun	32255	0	679	0
Jul	51305	0	452	0
Aug	14377	0	155	0
Sep	40911	0	313	0
Oct	41780	0	456	0
Nov	189673	0	1971	0
Dec	149590	0	3876	282
All months	505966	0	4546	5

<https://water-monitoring.information.qld.gov.au/>

Between 1967-2016 there would have been few opportunities to pump water from the lower Suttor, as on most days flows were below 50 GL/day (Fig. 18).

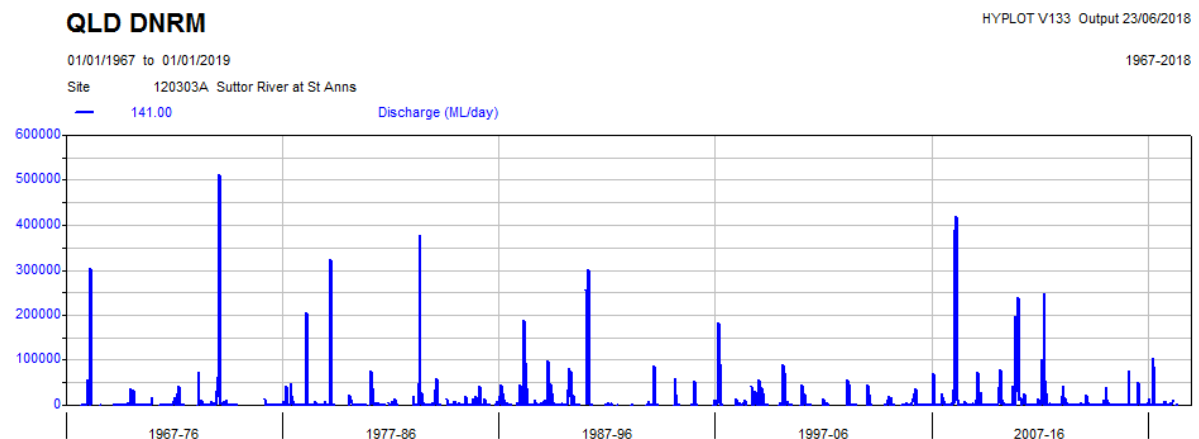


Fig. 18 Suttor River Discharge (ML/day) downstream of the NGWS site

What would be significant for wildlife and human downstream users would be any reduction in the volumes of wet season flows and any increase in the frequency of zero to low flows. This is because reductions in streamflows could mean a reduction in ecosystem production rates, wildlife breeding success, and the production capability of graziers and farmers downstream.

That could cause significant impacts on MNES such as the EPBC-listed endangered Threatened Brigalow Ecological Community RE11.3.1 downstream of the NGWS as a result of:

- water offtake for the Carmichael coal mine (12.5 ML/yr);
- decreased flow upstream from the dewatering of the Carmichael coal mine (Adani acknowledges the Carmichael River will have reduced flows to the Belyando River); and/or
- decreased flow because of climate change impacts (e.g. declining rainfall). Wet season average monthly flows (1981-2010) have declined compared to average historical flows (1870-2018) at Clermont (Fig.19)

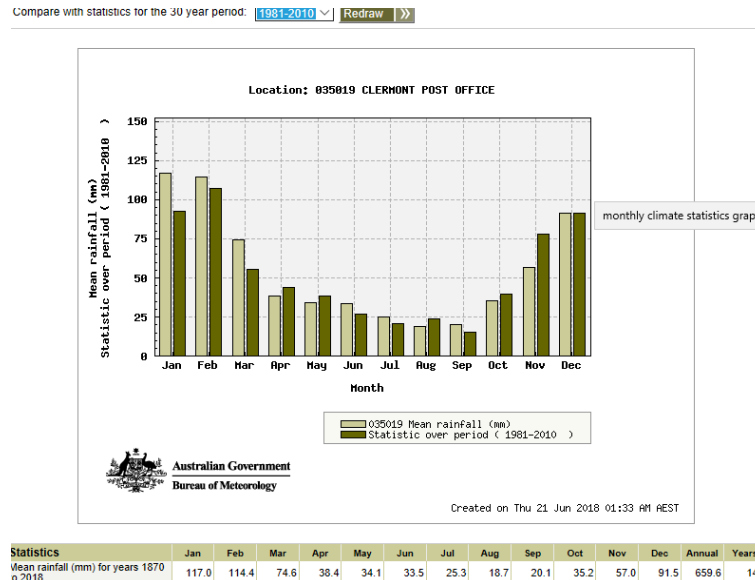


Fig.19 Lower rainfall on average for Jan-Feb wet season rainfall 1981-2010 than long term mean 1870-2018 at Clermont 160 km southeast of the Carmichael coal mine site

Adani would need to show that the cumulative impacts of the Carmichael coal mine including the NGWS off-take volumes would not have a significant impact on MNES downstream of the NGWS over the life of the mine. That includes knowing the hydroecological effects of the reductions in wet season streamflows the mine and its ancillary activities will cause.

20. Other causes of reduction in stream flow at the NGWS caused by the Carmichael coal mine project upstream

As mentioned earlier Adani predicts dewatering for the Carmichael coal mine will cause “maximum impacts in excess of 300m” for the local water table. Beyond the mine boundary, Adani’s groundwater model predicts water table levels to drop “typically between 20 and 50m” and “up to around 4m in the vicinity of the [Carmichael] river.” This could result in a seven percent reduction in flow of the Carmichael River, and death of downstream vegetation.

As the Carmichael River flows into the Belyando and eventually past the NGWS how much will the drop in river flow through RE 11.3.25/11.3.37/11.3.1 be caused by loss of flows from this river?

What will be the final extent of the impacts of this massive depressurization caused by the mine to groundwater and surface water flows from its cone of depression? Could it cause permanent reverse flows of water to the deep voids left by the mining? If so there could be an effect on downstream ecology and biodiversity far larger than that caused by the NGWS.

The extent and duration of such cumulative impacts of groundwater dewatering and water off-take on the feasibility of the NGWS project need to be estimated with a good degree of confidence.

21. Water Quality Impacts

The Queensland government allows mine-polluted water from storage areas on mine sites to be released during times of high stream flows, on the basis that such pollution will be diluted to levels within regional water quality guidelines. Such water contains pollutants such as heavy metals which do not safely biodegrade and can bioaccumulate into the surrounding and downstream environments.

As the Carmichael mine has state approval to run for up to 90 years, it is important to know what impacts on MNES such releases will have.

Some of that diluted polluted water will be taken up by pumping for the NGWS. The rest will flow downstream through 11.3.25/11.3.37/11.3.1 where pollutants will be deposited, and some will eventually reach the Great Barrier Reef Marine Park via the Burdekin River. Over 90 years concentrations of toxic heavy metals and other non-biodegradable pollutants from coal mining will build up in these downstream waterways and ecosystems. In addition to harming health these pollutants can have longer term impacts such as affecting genetic diversity. How will that be prevented?

22. Increased sediment loads and water temperature changes from increased water off take at the NGWS

Erosion risk ranges from moderate to high in the NGWS site and mostly high to very high downstream in the lower Suttor River north of the NGWS site.³⁷ Waters in the Belyando and Suttor Rivers are already turbid and pumping for the NGWS will make them more turbid and affect water temperatures which will in turn affect aquatic life (Fig. 20).

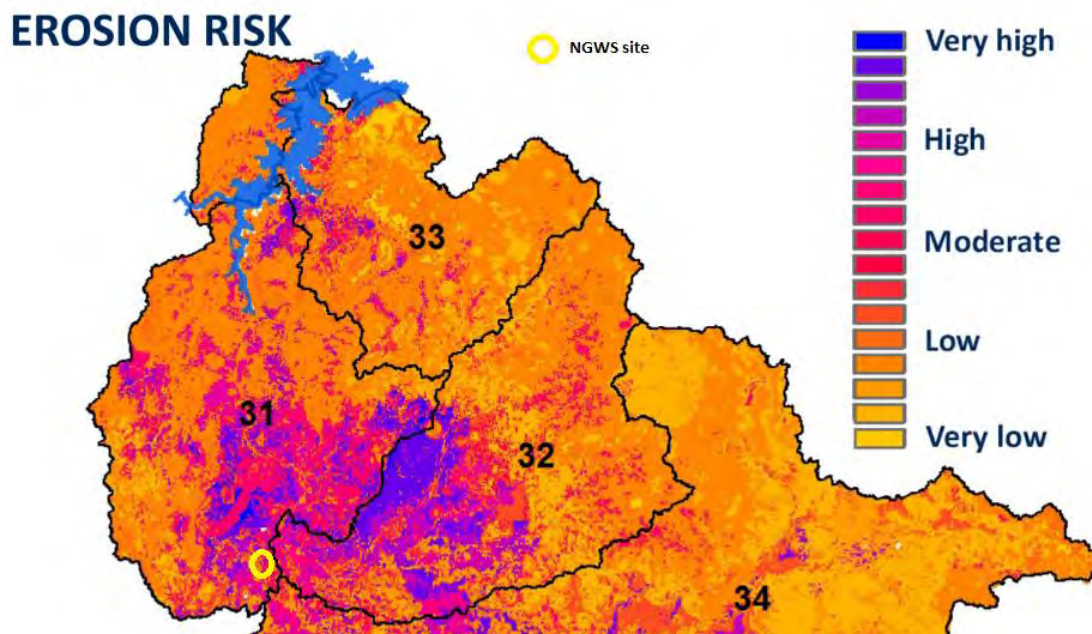


Fig.20 Erosion risk map lower Suttor River Catchment

³⁷ ³⁷ www.nqdrytropics.com.au/wqip2016

23. Great Barrier Reef World Heritage Area

As downstream impacts from the NGWS and Carmichael coal mine may occur as far downstream at the Great Barrier Reef World Heritage Area over the 90 year life of the project, the Minister should declare the Great Barrier Reef World Heritage Area to be a controlling provision for the purposes of the EPBC assessment, and use his power under section 76 of the EPBC Act to require the proponent to provide more information about matters of national environmental significance. This should include intensive field studies covering the entire migration period for species likely to appear in the project impact area.

24. Environmental record of the proponent

The proponent claims that they have not been the subject of fines or prosecution due to failure to comply with environmental laws or regulations. Adani Infrastructure is a subsidiary of the Adani Group. Following a breach of a temporary emissions license and the release of large amounts of coal fines into the ocean near the Caley Valley Wetlands, Adani Abbot Point Bulk Coal (a subsidiary of Adani Ports and Special Economic Zones, which is part of the Adani Group and intends to take coal from the Carmichael Coal Project), was fined \$12,000. This is one of a number of environmental infringements by Adani Group companies including Adani Mining.

Jeyakumar Janakaraj is both a director of Adani Infrastructure and CEO of Adani Mining, two of the companies comprising the Adani Combined Project of which this element is part.

The Adani Group also have a significant environmental history internationally. Accordingly, Adani Infrastructure should be required to disclose offences by other companies in the Adani Group, and at least those companies that form part of the Adani Combined Project.

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Kooyong Climate Change Alliance

c/- 260 Balwyn Rd
Balwyn North VIC 3014

20th June 2018

Referrals Gateway
Environment Assessment Branch
Department of the Environment
GPO Box 787
Canberra ACT 2601
By email: epbc.referrals@environment.gov.au

Proposed Action: North Galilee Water Scheme (NGWS) Project
Reference Number: 2018/8191

Please accept this submission on behalf of The Kooyong Climate Change Alliance to the EPBC referral for the North Galilee Water Scheme (**NGWS**) proposed by Adani Infrastructure Pty Ltd (2018/8191) (**Adani**).

Kooyong Climate Change Alliance (KCCA) member organisations are Lighter Footprints, ACF Boroondara, Lighter Footprints and GetUp! Kooyong. The member organisations have been active, inter alia, in advocating to the Minister that the Adani mine approvals be reviewed in the light of new evidence about the environmental effects of coal mining in the Galilee Basin since the original approvals were granted in 2015.

We recommend that you declare the NGWS as a controlled action under S 67 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) because it will have, or is likely to have an impact on matters of national environmental significance (**MNES**).

Adani claims in their referral documents that the NGWS project is not a controlled action. Contrary to that conclusion, it is clear that:

1. The NGWS project must be assessed under the water trigger because:
 - a. the NGWS project is designed solely to facilitate extraction of coal from the Carmichael coal mine, therefore it is an action that involves “large coal mining development” as defined under s 24D of the EPBC Act; and
 - b. there is a real chance or possibility that it will have a significant impact on water resources in the Belyando Suttor sub-catchment.
2. The NGWS is also likely to have a significant impact on a number of threatened species and communities, including the Black Throated Finch, Ornamental Snake and the Koala.

3. Projects affecting the same threatened species with a far smaller footprint have been declared as controlled actions in the past by the Department of Environment and Energy.
4. The potential impact of the Suttor River water take and the associated infrastructure on the Great Barrier Reef World Heritage Area has not been considered by the proponent.

Recommendations

We recommend that you:

1. Declare the NGWS project a controlled action with controlling provisions of:
 - Listed threatened species and communities
 - A water resource in relation to coal seam gas development and large coal mining development
 - World Heritage properties
 - Great Barrier Reef Marine Park
2. Require the full extent and impacts of the project on MNES to be properly assessed under the EPBC Act via a full Environmental Impact Statement.
3. Obtain expert advice on the water impacts of the project from the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (**IESC**).
4. Require the proponent to fully disclose the environmental compliance record of all associated companies both here and overseas in order for the public to properly understand the compliance history of the Adani group.
5. Recognise that the action is part of a larger action proposing to take far greater volumes of surface water than identified in the referral, by:
 - Exercising your discretion under s74A of the EPBC Act to reject the referral, or
 - Utilising your powers under s76 (2) of the EPBC Act to require Adani to provide further information about the full extent of impacts to surface water, including the proposal to supply other coal mines from the NGWS and other existing water permits held by Adani for construction purposes in the catchment.

Project Summary

The NGWS project is located approximately 160km north-west of Clermont in Central Queensland.

In times of flood, Adani plan to harvest water from the Suttor River downstream of its confluence with the Belyando River. The water will then be stored in a nearby upgraded dam then piped to the mine.

The project consists of:

- flood water harvesting infrastructure on the Suttor River
- a 10 GL (billion litre) dam (the upgrade of a 2GL dam is proposed)
- pumping facilities and a 4km pipe linking the harvester to the dam
- a 110km pipeline with pumping stations connecting the dam to the proposed Carmichael coal mine.

Adani provide a total disturbance footprint for the NGWS of 508.98 hectares. Adani estimate that construction of the NGWS will run from January 2019 to March 2020.

Adani holds a water licence entitling it to take 12.5 billion litres a year from the Suttor River at the location of the proposed water harvester.¹ This was obtained from the Queensland Government in March 2017 with the water being allocated from a State strategic reserve.

Water Resources

Section 24D of the EPBC Act provides as follows:

“(1) A constitutional corporation, the Commonwealth or a Commonwealth agency must not take an action if:

(a) the action involves:

- (i) coal seam gas development; or*
- (ii) large coal mining development; and*

(b) the action:

- (i) has or will have a significant impact on a water resource; or*
- (ii) is likely to have a significant impact on a water resource.”*

The term “large coal mining development” is defined in section 528 as:

“any coal mining activity that has, or is likely to have, a significant impact on water resources (including any impacts of associated salt production and/or salinity):

- (a) in its own right; or*
- (b) when considered with other developments, whether past, present or reasonably foreseeable developments”.*

In their referral, Adani state that the NGWS project does not constitute large coal mining development for the purposes of the EPBCA, and therefore that it is not a controlled action for that provision. In an attachment to the referral, Adani state that ‘*Activities relevant to the water trigger are those that form part of the process of extracting coal and not merely be associated with it*’.

However, the NGWS most certainly does constitute coal mining activity for the purposes of the EPBC Act and as such, it should be considered a controlling provision for the action. We set out below the evidence as to why the NGWS is large coal mining development for the purposes of s 24D of the EPBC Act.

¹ Water Act 2000, Water Licence Reference 617268, Expiry 30/06/2077, issued to Adani Infrastructure Pty Ltd

The Suttor River water take and infrastructure has not been assessed previously

In the original Environmental Impact Statement (EIS) documents for the Carmichael Coal Mine, Adani stated that the expected average water demand of the Carmichael mine would be in the order of 12 billion litres (12GL) per annum. This represents the additional water that the project would require on top of that resulting from operational activities such as pit dewatering and on-site rainwater management.

In the original EIS (2012), Adani claimed that this additional water would be sourced from on-site sources and from bores to be drilled along nearby creeks. By the time of the SEIS (late 2013), Adani had modified its plans to include a flood harvesting scheme near to the mine site on the Belyando River with a capacity equal to the mine's total additional water needs.²

It was only after the SEIS that Adani moved towards supplying the needs of the mine from flood harvesting of the Suttor River. So, neither the proposed take of water from the Suttor River, nor the associated infrastructure, was considered or assessed under the original EIS for the project.

The NGWS has been formally recognised as part of the Adani Combined Project

The NGWS has been explicitly recognised as being part of the Adani Combined Project by the Queensland Government. In October 2016, the Queensland Minister for State Development, Planning and Infrastructure declared the Adani Combined Project to be both 'critical infrastructure' and a 'prescribed project' under the *State Development and Public Works Organisation Act 1971* (Qld). The NGWS was listed as comprising a key component of that project.

The volume of water take is likely to constitute a significant impact

The take from the Suttor River of up to 12.5GL per year for the NGWS project is likely to constitute a significant impact on water resources because it amounts to more than 50% of the total strategic reserve for the relevant sub-catchment under the Queensland *Water Plan (Burdekin Basin) 2007*.

Water take and infrastructure does constitute a 'coal mining activity'

The term 'coal mining activity' in the definition of 'large coal mining development' includes activities such as water extraction that form part of a large scale development for the mining of coal. The term is not

2 Carmichael Coal Mine and Rail Project SEIS (Nov 2013), Updated Mine Project Description, Appendix B, P. 96-97

restricted to 'coal mining' only, as appears to have been concluded by Adani.

When the 'water trigger' was introduced by way of the *Environmental Protection and Biodiversity Conservation Amendment Act 2013* (Cth), the then Minister for Sustainability, Environment, Water, Population and Communities in his second reading speech referred, amongst other things, to the "irreversible depletion.....of our surface and groundwater resources".

The relevant *Bills Digest*, which was laid before Parliament before the Bill was enacted, considered the impacts of large scale coal mining on water resources. These included the use of water 'for processing and dust suppression and other mining activities' as a necessity of coal production. In considering a particular coal mine, the *Digest* describes operational water use of 21GL per year from surface and sub-surface sources as 'an appreciable amount' compared to a total annual extraction of around 550GL.

In addition, S 131AB of the Act states that the

"Minister must obtain advice from Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development

(1) This section applies if:

- (a) the taking of an action, for the purposes of a controlling provision, involves:*
 - (i) coal seam gas development; or*
 - (ii) large coal mining development; and*
- (b) the Minister believes that the taking of the action:*
 - (i) is likely to have a significant impact on water resources, including any impacts of associated salt production and/or salinity; and*
 - (ii) may have an adverse impact on a matter protected by a provision of Part 3. (underlining added)*

We contend that, given the evidence of the second reading speech and the bills digest, Parliament's clear intention was to include all aspects of coal production associated with large coal mining development within the purview of the water trigger amendment. Specifically, it is absurd of Adani to assert that the harvesting of water for washing coal is not an action involved in large scale coal mining development. This not only defies common sense, it is clearly out of line with Parliament's objects for the Act as amended.

Therefore, it is clear that the correct statutory construction of the EPBC Act is that the extraction of water for use in dust suppression and processing does constitute a coal mining activity, especially when read in the context of the objects of the legislation. Indeed, the reference to the water supply required to operate the mine in the original EIS for the

Carmichael coal mine supports that conclusion – it is an integral part of the coal mining activity and without it, the mine cannot operate.

We note that the relevant [Significant Impact Guidelines 1.3](#) (Coal Seam Gas and Large Coal Mining Developments - impacts on water resources) are quoted by Adani as supporting their argument that water extraction and infrastructure does not constitute a coal mining activity. We note that the non-statutory guidelines do not supplant the law. Most notably, the guideline is not a relevant consideration for the Minister in deciding whether the NGWS project is a controlled action and which provisions are controlling provisions under s 75(1) EPBC Act.

The Guidelines state that extraction of CSG or coal must form part of the activity and not merely be associated with it, and specify that *“where referred along with new or modified extraction of CSG or coal, the following activities will form part of the extractive process: water supply for use in the extraction of CSG or coal.....However, these activities will not independently be CSG or coal mining development where there is no new or modified extraction of CSG or coal”*.

However, the NGWS is part of the activity of the Carmichael coal mine and the mine cannot operate without it. The need to supply the water was identified in the original coal mine proposal, and therefore it undoubtedly forms part of the activity and is not ‘merely associated with it’. This conclusion is supported by the fact that the NGWS has been formally identified as part of the Adani Combined Project by the Queensland Government.

The NGWS proposes to provide water to other mines currently under EPBC consideration

Adani notes that the NGWS could be used to supply water to other proposed coal mines in the surrounding area, but does not specify what volume of water will be supplied or how this will relate to 12.5GL they have earmarked as being needed for the Carmichael Coal Mine. It is notable that the water licence provided by the Queensland Government to Adani for the Suttor River take authorises take only for *‘water supply for the Carmichael Coal Mine and Rail Project’*.

The company names the China Stone Coal Project as one of the mines it could supply. The Environmental Impact Statement for the China Stone Project states that the mine will need to source a significant portion of its water supply from off-site, especially in dry years. The project proponent, Macmines Austasia, plans to secure an external supply of up to 12.5 billion litres of water per annum.³ In its recent EPBC referral for the Alpha North

3 Page 13-25, Surface Water, Section 13, Draft Environmental Impact Statement, Project China Stone

Project, Waratah Coal notes that it too is planning to source water “through the NGWS being developed by Adani”.⁴

On the basis of this information we consider that this NGWS proposal is actually part of a much larger action. In addition to the additional water take mooted in the NGWS referral for other mines, Adani has already obtained water permits for additional water take that is not mentioned in the referral. Water Permit 617345 allows the take of 250ML from the Belyando River for mine construction and Water Permit 614017 allow the take of 8050ML from Mistake Creek for mine construction⁵.

We believe that referring the NGWS without providing full details of the entire water take is contrary to the objects of the EPBC Act because it will allow the proponent to avoid a full impact assessment of the proposed action on MNES. We request that you exercise your discretion under s 74A EPBC Act to reject the referral or request Adani to provide further information about the extent of impacts to surface water resources that are likely to result from supplying additional billions of litres of fresh water to mines in the area under s 76(2) EPBC Act.

4 Waratah Coal (2018) Alpha North Project, Initial Advice Statement, section 3.3.7 Water Supply, page 3-30

5 It is unclear whether this permit has been renewed since its initial expiry in January 2018.

Threatened Species

Threatened species surveys inadequate

Threatened species surveys conducted for the project by Adani are inadequate. They appear to have conducted only 6 days of site inspections – one three day period in December 2016 and one three day period in May 2-15. This is vastly inadequate both in duration and in seasonality, particularly for a project that has a 500ha disturbance and proposes over 110km of pipeline installation.

There is very little information provided as to the nature or intensity of the surveys that were conducted. However, in Attachment D of the referral Adani refer to site assessments involving apparently visual ‘*assessment of fauna habitat values*’. In other parts of the referral, Adani make some reference to surveys for the Koala, Ornamental Snake and Black Throated Finch, but it is not clear if this is simply the ‘site assessments’ referred to in Attachment D. There is no information provided on what survey techniques were used for each species and where they were applied.

In light of the information that is available, it would seem that there were no systematic surveys for flora and fauna, and it seems unlikely that there were any extensive targeted surveys for relevant species using appropriate survey techniques.

Impacts on important habitat for threatened species by Adani’s own admission

The DoEE protected matters tool identifies one Listed Threatened Ecological Community and 13 Listed Threatened Species as being MNES that are likely to occur within the impact area of the NGWSP. The Matters of NES include:

- Brigalow (Acacia harpophylla dominant and codominant) (Endangered);
- Red Goshawk (Vulnerable);
- Squatter Pigeon (southern) (Vulnerable);
- Painted Honeyeater (Vulnerable);
- Star Finch (eastern), Star Finch (southern) (Endangered);
- Southern Black-throated Finch (Endangered);
- Australian Painted Snipe (Endangered);
- Masked Owl (northern) (Vulnerable);
- Northern Quoll (Endangered);
- Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) (Vulnerable);
- Waxy Cabbage Palm (Vulnerable);
- Yakka Skink (Vulnerable);
- Ornamental Snake (Vulnerable);
- Curlew Sandpiper (Critically Endangered).

The weaknesses of the surveys described above are particularly inadequate in light of Adani's own analysis that there is important or critical habitat present for at least 3 species - Ornamental Snake, Black-throated Finch and Koala.

Adani admit that there is 137.43 hectares of habitat suitable for the Ornamental Snake within the footprint of the project, including important habitat for the species, and that the habitat '*is almost certain to be used for foraging and breeding given the species occurs there*'. However, despite that evidence which clearly triggers the requirements for significant impact contained in the relevant Significant Impact Guidelines, they claim that there will not be a significant impact.

Similarly, Adani themselves acknowledge that there is important habitat for the Black-throated Finch and the Koala within the project footprint, but again claim that there will not be a significant impact. We contend that the conclusions reached by Adani for these two species is also inconsistent with Significant Impact Guidelines.

In relation to the Black Throated Finch, we note that Stage B of the pipeline crosses potential Black-Throated Finch Habitat in a number of locations before heading north at Mistake Creek.⁶ Construction of the pipeline will require clearing of a corridor prior to construction. The proposed route of the NGWS may require clearing of Black Throated Finch habitat which will have a significant impact on the species as set out in the criteria in the EPBC Significant Impact Guidelines for critically endangered and endangered species.⁷

Furthermore, despite identifying a number of additional species that have the potential to occur, including the Yakka Skink, Red Goshawk, Australian Painted Snipe and Painted Honeyeater, Adani go no further in genuinely assessing likelihood or habitat for the species. This is manifestly inadequate for a project of this size and impact.

Far smaller, similar projects have been declared controlled actions in the past

A comparison with previous similar development proposals in Central Queensland indicates that far smaller projects have been declared as controlled actions by the Department of Environment and Energy for likely impacts on exactly the same species which are at issue with the NGWS.

⁶ Based on Adani's own studies see: 'Carmichael Coal Mine and Rail Project' Volume 1, Section 11 Matters of MNES, Figure 11-4 Sheets 1-2.

⁷ Department of the Environment, 'Matters of National Environmental Significance: Significant Impact Guidelines 1.1 *Environment Protection and Biodiversity Conservation Act 1999* (Cth) 9.

The Olive Downs Project Water Pipeline (EPBC 2017/7868) is, just like the NGWS, water supply infrastructure to supply a coal mine. The Olive Downs pipeline proposal was for a 19km pipeline, 15m in width, which encompassed a total footprint of 30 hectares. This is only a quarter the length of the NGWS pipeline and half the width. Therefore, the total footprint of the NGWS project is 16 times that of the Olive Downs pipeline.

The species that were likely to be impacted by the Olive Downs pipeline included the Ornamental Snake, the Squatter Pigeon, the Koala and the Greater Glider. All four of those species are known or likely, or have the potential, to occur in the NGWS project. Like Adani, the Olive Downs proponent claimed that the project was unlikely to have a significant impact on these species and was not a controlled action.

However, the Department of Environment and Energy declared the action was a controlled action and that it required assessment and approval under the EPBC Act before it could proceed. Listed threatened species and communities were the stated controlling provision.

Therefore, it is incumbent on the Department to act consistently, and to implement the EPBC Act without fear or favour, which would require it to declare that the NGWS project is a controlled action for listed threatened species and communities, just as they did with the Olive Downs project.

Potential impacts on the Great Barrier Reef

When approving the Carmichael Coal Mine project, the Minister found that the proponent's proposed action may have indirect impacts on the GBRWHA via impacts through watercourses due to reduction in downstream flow.⁸ However, the Minister did not consider the cumulative impacts of the project with the flood harvesting proposed in the NGWS project.

The significant impact guidelines for the Great Barrier Reef World Heritage Area, identify changes to natural water regimes as examples of possible significant impacts arising from actions/activities likely to occur in or adjacent to the Great Barrier Reef World Heritage. It also refers to mining operations, dams and/or other infrastructure that may have downstream impacts on the GBRWHA.

The Burdekin catchment in which the Suttor River is located is an important catchment of the Great Barrier Reef. Recent research has identified that the Burdekin River is one of just four rivers that are most likely to affect water quality into the GBR⁹. Therefore, any activity, such as flood harvesting in the catchment and associated infrastructure, should

⁸ Greg Hunt, 'Statement of Reasons for approval of a proposed action under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) EPBC 2010/5736 (14 October 2015) [35].

be considered likely to have a significant impact unless or until extensive hydrological assessment and modelling has been conducted to prove otherwise.

Environmental Record

In its EPBC referral for the NGWS, Adani claims that *“The Proponent (Adani Infrastructure Pty Ltd) has adhered to its regulatory responsibilities in association with its activities. The Proponent has not been the subject of any environmental legal proceedings that have resulted in fines or prosecution.”*¹⁰

However, in making this statement, the proponent is restricting itself to Adani Infrastructure Pty Ltd, and is ignoring the environmental record of other, closely associated Adani companies and the environmental history of the company’s directors. The company has an identical ownership structure to Adani Mining Pty Ltd, the proponent of the Carmichael mine. Both are ultimately owned by Indian listed company Adani Enterprises Limited.

Adani Infrastructure Pty Ltd has two directors Jeyakumar Janakaraj and Samir Sevanti Vora. Janakaraj is also the head of Adani in Australia and Chief Executive Officer of Adani Mining Pty Ltd. Vora is also the Chief Operating Officer of Adani Mining Pty Ltd.¹¹ Janakaraj was previously Director of Operations at Konkola Copper Mines (KCM) which is not an Adani Group entity. In 2010, while Janakaraj was Director of Operations, KCM caused extensive pollution of a river near its operations in Zambia. The company pleaded guilty to the offence and was fined.¹²

Adani Mining have previously been investigated by the federal Department of the Environment for potential false and misleading conduct in failing to declare the environmental history of Jeyakumar Janakaraj during the environmental assessment of the Carmichael Mine and Rail Project. Department records show that during this investigation, the details of which were obtained by FOI, in addition to a number of overseas offences, Adani reported 11 environmental incidences in Australia involving Adani Mining Pty Ltd including some resulting in penalty infringement notices and fines.¹³

9 <https://www.theguardian.com/environment/2018/jun/15/great-barrier-reef-four-rivers-are-most-responsible-for-pollution>

10 North Galilee Water Scheme (NGWS) Project, EPBC Referral document, Pdf page 48 http://epbcnotices.environment.gov.au/_entity/annotation/2633c814-db6a-e811-817f-005056ba00a7/a71d58ad-4cba-48b6-8dab-f3091fc31cd5?t=1528755820874

11 <https://www.adani.com/about-us/one-vision-one-team>

12 [The Adani Brief - Environmental Justice Australia](#)

13 Department of the Environment FOI 171001 documents titled “Summary of information provided by Adani in response to a request relating to their environmental history, Annexure 5” pages 5-1 to 5-5

Adani company Abbot Point Bulk Coal Pty Ltd have been fined for breaching their licence at the Abbot Point coal terminal by releasing coal-laden water into the ocean. Just before Cyclone Debbie in Queensland, the company was granted a special licence allowing them to pollute well above normal limits during severe weather. Yet, even with that licence, the Queensland Government found that Adani discharged wastewater that exceeded their pollution licence by 800%. Adani were fined \$12,000 for the offence¹⁴.

Adani Infrastructure Pty Ltd should be required to disclose the environmental breaches described above and any other environment incidents that have occurred across all associated entities within the Adani Group to the Federal Government.

¹⁴ Adani are currently appealing the fine.



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25th June 2018

Referrals Gateway
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Department of the Environment
GPO Box 787
Canberra ACT 2601
By email: epbc.referrals@environment.gov.au

Proposed Action: North Galilee Water Scheme (NGWS) Project
Reference Number: 2018/8191

To whom it may concern,
North Queensland Conservation Council (NQCC) wishes to submit this submission on the EPBC referral for the North Galilee Water Scheme (**NGWS**) proposed by Adani Infrastructure Pty Ltd (2018/8191).

Our recommendation

We recommend that you declare the NGWS as a controlled action under s 67 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) because it will have, or is likely to have an impact on Matters of National Environmental Significance (**MNES**). This submission will provide further explanation about our position on this matter and offer further recommendations.

About North Queensland Conservation Council

NQCC is the voice for the environment in North Queensland with over 1500 members and supporters. With our office based in Townsville, we cover an area from Cardwell in the North, South to Bowen and extending West across to the Northern Territory border. We are the peak environmental organization for our region, campaigning on a range of environmental issues specific to the North Queensland region. For over 40 years we have been campaigning for the protection of the Great Barrier Reef and isolated reefs of the Coral Sea to opposing inland projects that would have adverse impacts on threatened species, habitat and our precious water resources.

Further recommendations

As previously noted, NQCC recommends that you declare the NGWS as a controlled action because of the likely impact on MNES.

Our full recommendations are as follows:

1. Declare the NGWS project a controlled action with controlling provisions of:
 - Listed threatened species and communities
 - A water resource in relation to coal seam gas development and large coal mining development
 - World Heritage properties
 - Great Barrier Reef Marine Park
2. Require the full extent and impacts of the project on MNES to be properly assessed under the EPBC Act via a full Environmental Impact Statement.
3. Obtain expert advice on the water impacts of the project from the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (**IESC**).
4. Require the proponent to fully disclose the environmental compliance record of all associated companies both here and overseas in order for the public to properly understand the compliance history of the Adani group.
5. Recognise that the action is part of a larger action proposing to take far greater volumes of surface water than identified in the referral, by:
 - Exercising your discretion under s74A of the EPBC Act to reject the referral, or
 - Utilising your powers under s76 (2) of the EPBC Act to require Adani to provide further information about the full extent of impacts to surface water, including the proposal to supply other coal mines from the NGWS and other existing water permits held by Adani for construction purposes in the catchment.

NOCC would like to emphasise the following points:

1. The NGWS project needs to be assessed under the water trigger because:
 - a. the NGWS project is designed solely to facilitate extraction of coal from the Carmichael coal mine, therefore it is an action that involves “large coal mining development” as defined under s 24D of the EPBC Act; and
 - b. there is a real chance or possibility that it will have a significant impact on water resources in the Belyando Suttor sub-catchment.
2. The NGWS is also likely to have a significant impact on a number of threatened species and communities, including the Black Throated Finch, Ornamental Snake and the Koala.
3. Projects affecting the same threatened species with a far smaller footprint have been declared as controlled actions in the past by the Department of Environment and Energy.
4. The potential impact of the Suttor River water take and the associated infrastructure on the Great Barrier Reef World Heritage Area has not been considered by the proponent.

Further details relating to the issues already noted:

1. The link between the NGWS project and coal extraction

The purpose of the NGWS project is to supply a reliable source of water to form part of the coal extraction process of the Carmichael mine. In fact, the Carmichael mine cannot operate without the NGWS project because it is directly linked to the extraction of coal activities. On this basis, the NGWS should be assessed under the

water trigger of the EPBC act. When the 'water trigger' was introduced by way of the *Environmental Protection and Biodiversity Conservation Amendment Act 2013* (Cth), the then Minister for Sustainability, Environment, Water, Population and Communities in his second reading speech referred, amongst other things, to the "irreversible depletion.....of our surface and groundwater resources".

2. A significant impact on the region's water resources

In the original Environmental Impact Statement (EIS) documents for the Carmichael Coal Mine, Adani stated that the expected average water demand of the Carmichael mine would be in the order of 12 billion litres (12GL) per annum. This represents the additional water that the project would require on top of that resulting from operational activities such as pit dewatering and on-site rainwater management.

The take from the Suttor River of up to 12.5GL per year for the NGWS project is likely to constitute a significant impact on water resources because it amounts to more than 50% of the total strategic reserve for the relevant sub-catchment under the Queensland *Water Plan (Burdekin Basin) 2007*.

We believe that referring the NGWS without providing full details of the entire water take is contrary to the objects of the EPBC Act because it will allow the proponent to avoid a full impact assessment of the proposed action on MNES. We request that you exercise your discretion under s 74A EPBC Act to reject the referral or request Adani to provide further information about the extent of impacts to surface water resources that are likely to result from supplying additional billions of litres of fresh water to mines in the area under s 76(2) EPBC Act.

3. Potential impacts on the Great Barrier Reef

When approving the Carmichael Coal Mine project, the Minister found that the proponent's proposed action may have indirect impacts on the Great Barrier Reef World Heritage Area (GBRWHA) via impacts through watercourses due to reduction in downstream flow. However, the Minister did not consider the cumulative impacts of the project with the flood harvesting proposed in the NGWS project.

The significant impact guidelines for the Great Barrier Reef World Heritage Area, identify changes to natural water regimes as examples of possible significant impacts arising from actions/activities likely to occur in or adjacent to the Great Barrier Reef World Heritage. It also refers to mining operations, dams and/or other infrastructure that may have downstream impacts on the GBRWHA. The Burdekin catchment in which the Suttor River is located is an important catchment of the Great Barrier Reef. Recent research has identified that the Burdekin River is one of just four rivers that are most likely to affect water quality into the GBR. Therefore, any activity, such as flood harvesting in the catchment and associated infrastructure, should be considered likely to have a significant impact unless or until extensive hydrological assessment and modelling has been conducted to prove otherwise.

4. Environmental Record

In its EPBC referral for the NGWS, Adani claims that “*The Proponent (Adani Infrastructure Pty Ltd) has adhered to its regulatory responsibilities in association with its activities. The Proponent has not been the subject of any environmental legal proceedings that have resulted in fines or prosecution.*”

However, in making this statement, the proponent is restricting itself to Adani Infrastructure Pty Ltd, and is ignoring the environmental record of other, closely associated Adani companies and the environmental history of the company’s directors. The company has an identical ownership structure to Adani Mining Pty Ltd, the proponent of the Carmichael mine. Both are ultimately owned by Indian listed company Adani Enterprises Limited.

Adani Infrastructure Pty Ltd should be required to disclose the environmental breaches described above and any other environment incidents that have occurred across all associated entities within the Adani Group to the Federal Government.

5. The NGWS proposes to provide water to other mines

Adani notes that the NGWS could be used **to supply water to other proposed coal mines in the surrounding area**, but does not specify what volume of water will be supplied or how this will relate to 12.5GL they have earmarked as being needed for the Carmichael Coal Mine. It is notable that the water licence provided by the Queensland Government to Adani for the Suttor River take authorises take **only** for ‘*water supply for the Carmichael Coal Mine and Rail Project*’.

The company names the China Stone Coal Project as one of the mines it could supply. The Environmental Impact Statement for the China Stone Project states that the mine will need to source a significant portion of its water supply from off-site, especially in dry years. The project proponent, Macmines Austasia, plans to secure an external supply of up to 12.5 billion litres of water per annum. In its recent EPBC referral for the Alpha North Project, Waratah Coal notes that it too is planning to source water “through the NGWS being developed by Adani”.

On the basis of this information we consider that this NGWS proposal is actually part of a much larger action. In addition to the additional water take mooted in the NGWS referral for other mines, Adani has already obtained water permits for additional water take that is not mentioned in the referral. Water Permit 617345 allows the take of 250ML from the Belyando River for mine construction and Water Permit 614017 allow the take of 8050ML from Mistake Creek for mine construction.

We believe that referring the NGWS without providing full details of the entire water take is contrary to the objects of the EPBC Act because it will allow the proponent to avoid a full impact assessment of the proposed action on MNES. We request that you exercise your discretion under s 74A EPBC Act to reject the referral or request Adani to provide further information about the extent of impacts to surface water resources that are likely to result from supplying additional billions of litres of fresh water to mines in the area under s 76(2) EPBC Act.

6. Threatened species surveys inadequate

Threatened species surveys conducted for the project by Adani are inadequate. They appear to have conducted only 6 days of site inspections – one three day period in December 2016 and one three day period in May 2-15. This is vastly

inadequate both in duration and in seasonality, particularly for a project that has a 500ha disturbance and proposes over 110km of pipeline installation.

There is very little information provided as to the nature or intensity of the surveys that were conducted. However, in Attachment D of the referral Adani refer to site assessments involving apparently visual '*assessment of fauna habitat values*'. In other parts of the referral, Adani make some reference to surveys for the Koala, Ornamental Snake and Black Throated Finch, but it is not clear if this is simply the 'site assessments' referred to in Attachment D. There is no information provided on what survey techniques were used for each species and where they were applied.

In light of the information that is available, it would seem that there were no systematic surveys for flora and fauna, and it seems unlikely that there were any extensive targeted surveys for relevant species using appropriate survey techniques.

In conclusion, NQCC is concerned about the changes to stream flow, potential impacts to the Great Barrier Reef and to threatened species. We are not satisfied that there is adequate information provided by the proponent. We would like to see your department ensure that no adverse impacts resulting from the proposed activities proposed by the Adani group of companies in the Galilee Basin will be left unassessed. The NGWS project forms part of a larger proposed project to extract coal as part of Adani's Carmichael mine project. Our organisation would like to see the NGWS project be assessed fully under the EPBC act because it has far reaching impacts and if it were to go ahead and will cause significant changes to water resources of the region.

Please do not hesitate to contact me if you have any questions regarding this submission.

Yours faithfully,



s47F
NQCC Campaigns Manager



Climate change is killing our reef.

We know there is still time to turn the tide of damage and destruction our reef is suffering. We aim to ensure a healthy and vibrant reef for all to enjoy, both now and in the future.

20.06.2018

Referrals Gateway
Environment Assessment Branch
Department of the Environment
GPO Box 787
Canberra ACT 2601

Sent by email to: epbc.referrals@environment.gov.au

Dear EPBC Referrals Team

Re: the EPBC referral for the North Galilee Water Scheme (NGWS) proposed by Adani Infrastructure Pty Ltd (2018/8191).

Thank you for the opportunity to make a submission on this referral.

Reef Action Whitsunday are a community group based in Airlie Beach, Queensland – heart of The Great Barrier Reef (GBR) World Heritage listed area. We are extremely concerned about the increasing deterioration of our GBR due to climate change and a myriad of other threats, and by the inaction of our governments to rapidly decrease our carbon emissions to save our GBR. We work primarily for better GBR protection and therefore better health outcomes for our Reef.

However, as a regional Queensland community heavily impacted by increasingly erratic rainfall patterns, we are also greatly concerned by all threats to water supplies in our state, which as of May 2018 is 57.4% drought declared ¹.

Reasons:

We believe that it is essential that you declare the NGWS as a controlled action under section 67 of the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) because it will have an impact on matters of national environmental significance as follows:

1. The NGWS project is designed exclusively to facilitate extraction of coal from the Carmichael coal mine, therefore it is an action that involves “large coal mining development” as defined under s 24D of the EPBC Act
2. There is a real possibility that it will have a significant negative impact on water resources in the Belyando Suttor sub-catchment.
3. The likely impact on the Suttor River water take and the associated infrastructure on the Great Barrier Reef World Heritage Area has not been considered by the proponent.
4. The NGWS is also likely to have a substantial impact on a number of threatened species. Far smaller, similar projects affecting the same threatened species have been declared controlled actions in the past – so clearly this project must also be declared a controlled action.

1. www.longpaddock.qld.gov.au Full and part shire drought declaration status and Individually Droughted Properties updated on 17 May 2018

Recommendations

We recommend that you:

1. Declare the NGWS project a controlled action with controlling provisions of:
 - Great Barrier Reef Marine Park
 - World Heritage properties
 - Listed threatened species and communities
 - A water resource in relation to a large coal mining development
2. Require the full extent and impacts of the project on matters of national environmental significance to be properly assessed under the EPBC Act via a full Environmental Impact Statement.
3. Obtain expert advice on the water impacts of the project from the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC).

Our major concerns on the potential impacts on the Great Barrier Reef by Adani's project are:

When approving the Carmichael Coal Mine project, the Minister found that the proponent's proposed action may have indirect impacts on the Great Barrier Reef World Heritage Area via impacts through watercourses due to reduction in downstream flow. However, the Minister did not consider the cumulative impacts of the project with the flood harvesting proposed in the NGWS project.

The significant impact guidelines for the Great Barrier Reef World Heritage Area identify changes to natural water regimes as examples of possible significant impacts arising from actions and activities likely to occur in or adjacent to the Great Barrier Reef World Heritage. It also refers to mining operations, dams and/or other infrastructure that may have downstream impacts on the GBRWHA.

We also have particular concerns regarding Adani's environmental record.

In its EPBC referral for the NGWS, Adani claims that "The Proponent (Adani Infrastructure Pty Ltd) has adhered to its regulatory responsibilities in association with its activities. The Proponent has not been the subject of any environmental legal proceedings that have resulted in fines or prosecution."

We feel this is misleading as in making this statement, the proponent is restricting itself to Adani Infrastructure Pty Ltd, and is ignoring the environmental record of other, closely associated Adani companies. Another Adani company, Abbot Point Bulk Coal Pty Ltd, have been fined for breaching their licence at the Abbot Point coal terminal by releasing coal-laden water into the ocean adjacent to the Great Barrier Reef Marine Park and World Heritage area. Prior to Cyclone Debbie the company was issued with a special license that allowed them to discharge sediment laden water well above normal limits. Yet, even with that special licence, the Queensland Government found that Adani discharged wastewater that exceeded their already increased pollution licence by a staggering 800%. Adani were fined \$12,000 for the offence. Clearly this conglomerate has been the subject of fines, and is currently in court challenging the meagre \$12,000 fine they have been issued. This makes us question their ability and intentions to abide by Australian environmental laws.

We also note that:

The NGWS has been formally recognised as being part of the Adani Combined Project by the Queensland Government. In October 2016, the Queensland Minister for State Development, Planning and Infrastructure declared the Adani Combined Project to be both 'critical infrastructure' and a 'prescribed project' under the State Development and Public Works Organisation Act 1971 (Qld). The NGWS was listed as comprising a key component of that project.

We trust that you will declare the NGWS a controlled action as it clearly should be.

Yours Sincerely

s47F

Reef Action Whitsunday

s22

From: s47F <campaigns@good.do>
Sent: Friday, 22 June 2018 8:58 AM
To: EPBC Referrals
Subject: Submission on Adani North Galilee Water Scheme

Dear Minister Josh Frydenberg,

Please accept this as a submission on the Adani North Galilee Water Scheme, reference number 2018/8191.

Adani wants to extract 12.5 billion litres of water from the Suttor River and send it through a new, 110km pipeline to the Carmichael coal mine.

In its referral, Adani claims that the scheme is not captured by the federal water trigger and would not have a significant impact on threatened species, which means it would not require a full environmental impact assessment.

Adani also wants its water infrastructure to supply other proposed Galilee Basin coal mines in the future. This could triple the amount of water taken – all without proper scrutiny or public consultation.

If you approve this, it will be yet another special deal for Adani that hangs Queensland farmers, local communities and the environment out to dry, at a time when most of the surrounding region of Central Queensland is in drought.

In the past, other pipelines for mining projects in Central Queensland that are only 1/16th the length of the Adani pipeline have been required to conduct proper environmental impact assessments.

Therefore, we call on you to recognise the water scheme as a controlled action under the Environment Protection and Biodiversity Conservation Act 1999 because of its likely impacts on water resources, threatened species and the Great Barrier Reef World Heritage area.

You must require that Adani conduct a full environmental impact assessment of the scheme and that it is thoroughly reviewed by scientists on the Independent Expert Scientific Committee.

Yours sincerely, s47F

_____ This email was sent by s47F via Do Gooder, a website that allows people to contact you regarding issues they consider important. In accordance with web protocol FC 3834 we have set the FROM field of this email to our generic no-reply address at campaigns@good.do, however s47F provided an email address (s47F@hotmail.com) which we included in the REPLY-TO field.

Please reply to s47F@hotmail.com.

To learn more about Do Gooder visit www.dogooder.co To learn more about web protocol FC 3834 visit: www.rfc-base.org/rfc-3834.html

s22

From: s47F [redacted]@hotmail.com>
Sent: Thursday, 14 June 2018 8:10 PM
To: yourenvminister
Subject: Conduct a federal review of Adani's North Galilee Water Scheme

Contact your Minister request notification

Contact your Minister for the Environment and Energy webform submitted on 14/06/2018, 8:10

PDR Id: null

Minister name: Josh Frydenberg

Title: Ms

First name: s47F

Last name: s47F

Email: s47F [redacted]@hotmail.com

Organisation:

Address: s47F [redacted]

Phone:

Subject: Conduct a federal review of Adani's North Galilee Water Scheme

Comments: Adani wants to extract 10 billion litres of water from the Suttor River and send it through a new, 61km pipeline to the Carmichael coal mine. In its referral, Adani claims that the scheme is not captured by the federal water trigger, which means it would not require a full environmental assessment, with input from an independent expert scientific committee. Adani also wants its water infrastructure to supply other proposed Galilee Basin coal mines in the future. This could triple the amount of water taken - all without proper scrutiny or public consultation. If you approve this, it will be yet another special deal for Adani that hangs Queensland farmers, local communities and the environment out to dry, at a time when most of the surrounding region of Central Queensland is in drought. We call on you, Minister for Environment and Energy, to recognise the water scheme as a controlled action under the Environment Protection and Biodiversity Conservation Act 1999 because of its impacts on

water resources. You must require that Adani conduct a full environmental impact assessment of the scheme and that it is thoroughly reviewed by scientists on the Independent Expert Scientific Committee. Yours sincerely, s47F

Attachments: 0 file(s) attached.



Australian Government
**Department of Agriculture
and Water Resources**

FOI 180914
Document 49

Mr s22
Queensland North Assessments Section
Assessments & Governance Branch
Department of the Environment and Energy
GPO Box 787
CANBERRA ACT 2601

Dear s22

I refer to the letter of 8 June 2018 from Mr s22 (Director, Referrals Gateway, Department of the Environment and Energy) to the Hon. David Littleproud MP, Minister for Agriculture and Water Resources, inviting comment on referral EPBC 2018/8191 (North Galilee Water Scheme, 160km northwest of Clermont, Qld), under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The Minister for Agriculture and Water Resources has asked me to reply on his behalf.

The department considers the proposed action could have significant impact(s) on a water resource, in relation to coal seam gas development and large coal mining development, protected under the EPBC Act.

Based on the referral, the proposed action by Adani Infrastructure Pty Ltd is to construct and operate a water scheme under a commercial agreement to the operators of the Carmichael Coal Mine and Rail Project (the Project) and potentially for other resource extraction projects in the northern Galilee Basin in the future. The proposed action is located about 160 kilometres (km) northwest of Clermont, central Queensland. The water scheme includes two stages (stage A, stage B). The stage A component includes construction and operation of flood harvesting infrastructure that will pump water from the river into an off-stream storage, and then supply water to the Project via pipeline. The stage B component is a 61 km buried pipeline with a 30 metre construction corridor extending from stage A and, for the most part running adjacent to the Project alignment. The total development footprint is about 1200 hectares. Construction is anticipated to commence in January 2019 and end in March 2020.

According to the referral, the project area lies within leasehold, state and freehold properties. Stage A works will be located within Lot 3 (SP278559) and a stock route (401CHAR), whilst utility infrastructure for stage B will be located mainly over six separate properties. These properties are predominantly used for low intensity cattle grazing. We understand the proponent has secured in principle land use and access agreements with the affected landholders.

The department would encourage the proponent to maintain open communication and consultation lines throughout the lifespan of the proposed action to mitigate sensitivities amongst stakeholders (e.g. Traditional Owners, landholders whose properties overlap exploration permits and mining leases, environment groups). The department notes the proponent has been granted a surface water licence and an associated water licence. The department considers it important to understand which licence will be used once the Project progresses after construction.

Water assessments including the establishment of robust baseline data on surface and groundwater monitoring in the project area should be carried out in accordance with management plans and made publicly accessible. Stakeholders also need to be provided with adequate and relevant information about the proposed action.

If the proposed action is approved, the department also recommends that Department of the Environment and Energy conditions for approval stipulate the proponent should adequately carry out rehabilitation work after mine closure. The proponent should also be audited periodically to ensure that conditions stipulated in the approval are complied with adequately.

Thank you for the opportunity to comment on referral EPBC 2018/8191.

Yours sincerely



Cassandra Kennedy
Assistant Secretary
Sustainable Agriculture Branch
June 2018

for

28



Queensland
Government

Department of
**Environment and
Science**

Ref 101/0003868-006

18 June 2018

Mr s22
Queensland North Assessments Section
Assessments and Governance Branch
Department of the Environment and Energy
GPO Box 787
CANBERRA ACT 2601

Dear Mr s22

Invitation to comment on referral EPBC 2018/8191 – North Gallilee Water Scheme, 160km northwest of Clermont, Qld

Thank you for your letter dated 8 June 2018 requesting advice on whether the above action will be assessed in a manner described in Schedule 1 of the Agreement between the Commonwealth of Australia and the State of Queensland (the Bilateral Agreement) developed under Section 45 of the *Environment Protection and Biodiversity Conservation Act 1999*.

I advise the proposal will not be assessed using the EIS process in chapter 3 of the *Environmental Protection Act 1994*.

The Department of State Development, Manufacturing, Infrastructure and Planning has advised that the Coordinator-General has not received a request for declaration of this proposal as a coordinated project under Part 4 of the *State Development and Public Works Organisation Act 1971*.

Should you have any further enquiries, please contact me on telephone s22

Yours sincerely

s22

Director, Impact Assessment and Operational Support

Level 9
400 George Street
Brisbane GPO Box 2454
Brisbane Queensland
4001 Australia Telephone
+ 61 7 3330 5598
Facsimile + 61 7 3330
5875
Website
www.des.qld.gov.au
ABN 46 640 294 485



**Mining and Investment
Onshore Minerals Branch
Resources Division
Department of Industry, Innovation and Science**

Cnr Jerrabomberra Avenue
and Hindmarsh Drive,
Symonston ACT 2609
GPO Box 378,
Canberra, ACT 2601 Australia
Phone: +61 2 6249 9111
Facsimile: +61 2 6249 9999
Web: www.ga.gov.au
ABN 80 091 799 039

22 June 2018

Attn: s22

Re: Invitation to comment on referral – EPBC 2018/8191 – North Galilee Water Scheme, 160 km northwest of Clermont, Qld

I refer to the request for comments dated 8 June 2018 on a referral for the North Galilee Water Scheme (the Project) by Adani Infrastructure Pty Ltd (the Proponent) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Geoscience Australia has reviewed the referral information, particularly as it relates to Sections 24D and 24E (the water trigger) of the EPBC Act, with attention to potential impacts to groundwater resources and other technical geoscience or geotechnical factors.

Summary

The Proponent has self-assessed that the Project does not trigger consideration under Sections 24D and 24E of the EPBC Act, based on the definition of the 'water trigger'.

Geoscience Australia notes that, should the Department of the Environment and Energy assess that the project does fall within the definition of the water trigger, there is potential for the project to directly impact groundwater resources and groundwater dependent ecosystems in localised areas and impact on recharge processes across larger areas. More information on the groundwater resources in the area and specific construction activities, particularly related to the dam enhancement and locations where the pipeline crosses watercourses, would be needed to assess the significance of impacts on groundwater resources.

Geoscience Australia is unaware of any technical geoscience or geotechnical issues that would impact on the project.

Background

The Proponent, a wholly owned subsidiary of Adani Enterprises Ltd, proposes to construct and operate the North Galilee Water Scheme (NGWS) to provide water supply under a commercial agreement to the operators of the Carmichael Coal Project (CCP). The NGWS is located approximately 160 kilometres (km) north-west of Clermont in Central Queensland.

The project will involve construction and operation of flood harvesting infrastructure that will pump water from the river into an off-stream storage, and then supply water to the CCP via a pipeline. The

project will be undertaken as two stages, covering a total area of 1,234 ha. Stage A includes components such as:

- An intake channel from the Suttor River, and an intake pump station.
- Upgrade to the existing Belyando Junction 2.2 GL storage dam to a nominal 10 GL capacity. This requires an estimated footprint area of approximately 170 ha including the dam and associated infrastructure.
- The buried pipeline along a 52 km route that crosses four minor watercourses and one major watercourse. The pipeline is located within a 30 m construction corridor, inside a 75 m easement.

The Stage B includes:

- A buried pipeline with a 30 m construction corridor extending from Stage A and, for the most part running adjacent to the Carmichael Rail Project alignment. The pipeline will be approximately 60 km long and crosses five minor and four major watercourses.
- A series of smaller offtake pipelines (20 m disturbance corridor) that will provide water to associated infrastructure for the CCP including a proposed airport and mine workers accommodation village.
- Laydown areas immediately adjacent to the pipeline corridor within a 75 m pipeline easement.

Comments

The Proponent has self-assessed that the Project does not trigger consideration under Sections 24D and 24E of the EPBC Act (the 'water trigger'). Geoscience Australia notes that the Commonwealth of Australia (2013)¹, section 3.4, states:

"Extraction of CSG or coal must form part of the activity and not merely be associated with it. Where referred along with new or modified extraction of CSG or coal, the following activities will form part of the extractive process:

- *water supply for use in the extraction of CSG or coal ..."*

If DoEE determines that the project should be assessed against the water trigger, the following points should be considered.

Based on the expected shallow depth of excavation and the relatively small disturbance footprint, Geoscience Australia considers that the pipeline is unlikely to have a significant impact on groundwater resources for the majority of its extent. The points at which the pipeline crosses minor and major watercourses warrant an assessment on a case by case basis to ensure surface and groundwater resources are not significantly impacted by the proposed works.

The enlargement of Belyando Junction Dam has the potential to have an impact on the groundwater resources in the local area.

¹ Commonwealth of Australia, 2013, *Significant impact guidelines 1.3: Coal seam gas and large coal mining developments—impacts on water resources*, <http://www.environment.gov.au/system/files/resources/d078caf3-3923-4416-a743-0988ac3f1ee1/files/sig-water-resources.pdf>.

Impacts to the EPBC listed ecological community '*the community of native species dependent on natural discharge of groundwater from the Great Artesian Basin*' are considered and no springs are identified in the project area.

Mapping from the Bureau of Meteorology of Groundwater Dependent Ecosystems (GDEs) shows that ecosystems reliant on groundwater are present throughout large parts of the project disturbance area, however it appears that impacts on GDEs are not considered in the referral.

If you have any queries on this, please contact me on s22 or s22

Kind regards,

s22

s22

A/g Director, Groundwater Advice and Data Section
Groundwater Branch,
Environmental Geoscience Division
Geoscience Australia

From: s22
To: s22; s22
Subject: Fwd: Invitation to comment on Referral - (EPBC 2018/8191) - North Galilee Water Scheme, 160km NW of Clermont, Qld [SEC=UNCLASSIFIED]
Date: Friday, 22 June 2018 2:05:47 PM
Attachments: [GA Comments on referral for North Galilee Water Supply Scheme.pdf](#)
[ATT00001.htm](#)

Begin forwarded message:

From: EPBC Referrals <EPBC.Referrals@environment.gov.au>
Date: 22 June 2018 at 13:25:05 AEST
To: "s22" <s22@environment.gov.au>
Cc: EPBC Referrals <EPBC.Referrals@environment.gov.au>
Subject: FW: Invitation to comment on Referral - (EPBC 2018/8191) - North Galilee Water Scheme, 160km NW of Clermont, Qld [SEC=UNCLASSIFIED]

Hi s22

FYI and appropriate action please – Geoscience Australia comments on Adani's NGWS.

Cheers,

s22

Referrals Gateway

Department of the Environment and Energy

P: s22 | E: EPBC.Referrals@environment.gov.au

From: EPBC [<mailto:EPBC@industry.gov.au>]

Sent: Friday, 22 June 2018 11:58 AM

To: EPBC Referrals <EPBC.Referrals@environment.gov.au>; EPBC <EPBC@industry.gov.au>; s22 <s22@industry.gov.au>

Cc: 'epbc@ga.gov.au' <epbc@ga.gov.au>

Subject: RE: Invitation to comment on Referral - (EPBC 2018/8191) - North Galilee Water Scheme, 160km NW of Clermont, Qld [SEC=UNCLASSIFIED]

Good morning s22

Thank you for the opportunity to comment on the proposed North Galilee Water Scheme Project. The Department of Industry, Innovation and Science is broadly supportive of the proposal, considering its critical development for the Carmichael coal mine project. This support is subject to the project meeting the relevant approvals (including environmental approvals), required by the State and Commonwealth governments.

Geoscience Australia has reviewed the proposal and provided comments regarding ground water resources, for your consideration. Please find them attached.

Warm regards,

s22

Policy Officer, Mining and Investment

Onshore Minerals | Resources Division

s22 <s22@industry.gov.au>

Department of Industry, Innovation and Science

The department acknowledges the traditional owners of the country throughout Australia and their continuing connection to land, sea and community.

We pay our respect to them and their cultures and to the elders past and present.

UNCLASSIFIED

From: EPBC Referrals [<mailto:EPBC.Referrals@environment.gov.au>]

Sent: Friday, 8 June 2018 4:30 PM

To: EPBC <EPBC@industry.gov.au>; s22

Cc: EPBC Referrals <EPBC.Referrals@environment.gov.au>; 'epbc@ga.gov.au' <epbc@ga.gov.au>

Subject: Invitation to comment on Referral - (EPBC 2018/8191) - North Galilee Water Scheme, 160km NW of Clermont, Qld [SEC=UNCLASSIFIED]

Good afternoon

We are sending you the attached link to a referral received for consideration under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) for your comments, as it falls within your area of interest:

<http://epbcnotices.environment.gov.au/invitations/>

Formal notification of this referral and a copy of the project shapefile is attached to this email.

Any comment should be sent by 25 June 2018 via:

by letter s22

Queensland North Assessments Section

Assessments & Governance Branch

Department of the Environment and Energy

GPO Box 787

CANBERRA ACT 2601

by email s22 [@environment.gov.au](mailto:s22@environment.gov.au)

Regards

Referrals Gateway

Governance and Business Support Section



Australian Government
Department of the Environment and Energy

FOI 180914
 Document 53

EPBC Act Cost Recovery - Fee Schedule

EPBC No: 2018/8191

Date of Fee Schedule: Sept. 6, 2018

Project title: North Galilee Water Scheme, central Queensland

Assessment method: Preliminary Documentation

Fee Schedule

STAGE FEES	Base fee	PART A Complexity costs (A-L, P)	PART B Complexity costs (MNO)	Total
Stage 1	\$2,074	\$4,035	\$0	\$6,109
Stage 2	\$2,289	\$6,388	\$0	\$8,677
Stage 3	\$852	\$6,725	\$34,949	\$42,526
Stage 4	\$2,795	\$16,476	\$34,949	\$54,220
TOTAL PROJECT COST	\$8,010	\$33,625	\$69,898	\$111,533

Notes:

- For assessments by environmental impact statement - If standard guidelines are used under Section 101A(2)(a) of the EPBC Act, the Stage 1 fee will not be applicable.
- For assessments by public environmental report - If standard guidelines are used under Section 96B of the EPBC Act, the Stage 1 fee will not be applicable.
- If no further information is requested under section 95A of the EPBC Act, the Stage 1 and 2 fees will not be applicable.
- The Department advises applicants of the maximum liability for Part B complexity fees at the time of the assessment approach decision, based on the information provided in the referral documentation. Applicants have the opportunity to reduce the Part B complexity fees during the assessment process by improving the quality of information provided to the Department during Stage 2 of the assessment. These Part B complexity fees are confirmed when all the assessment documentation is provided in Stage 2, and are not payable until Stages 3 and 4 of the assessment.

Fee Breakdown

		COMPLEXITY	FEE
CONTROLLING PROVISIONS			
Part A Fees	Listed threatened species and ecological communities	High	
	Six species and one community require assessment: Brigalow TEC, Koala, Ornamental Snake, Squatter Pigeon (Southern), Bluegrass, Waxy Cabbage Palm and Southern Black-throated Finch. Direct impacts from trenching are well understood but downstream impacts from water extraction are not well understood. Options to manage impacts for most species, excluding the Ornamental Snake, are well understood.		\$25,615
	Listed migratory species	None	\$0
	Not applicable.		
	Wetlands of international importance	None	\$0
	Not applicable.		
	Environment of the Commonwealth marine area	None	\$0
	Not applicable.		
	World heritage properties	None	\$0
	Not applicable.		
	National heritage places	None	\$0
	Not applicable.		
	Nuclear actions	None	\$0
	Not applicable.		
	Great Barrier Reef Marine Park	None	\$0
	Not applicable.		
	Water Resources	None	\$0
	Not applicable.		
	Commonwealth Land/Commonwealth Agency/Commonwealth Heritage Places Overseas	None	\$0
	Not applicable.		
NUMBER OF PROJECT COMPONENTS			
	Number of project components	Moderate	\$8,010

	COMPLEXITY	FEE
Impacts associated with trenching activities. Downstream impacts associated with water extraction.		
COORDINATION WITH OTHER LEGISLATION		
L Coordination with other legislation	Low	\$0
Proposed action will not be assessed under the bilateral agreement with the State of Queensland.		
ADEQUACY OF INFORMATION AND CLARITY OF PROJECT SCOPE		
M Site surveys/Knowledge of environment	High	\$34,949
Site surveys are complete for the trenching activities within the project site. However, site surveys downstream of the project site have not been undertaken.		
Part B Fees: Management measures (including mitigation and offsets)	High	\$34,949
Management measures are poorly defined and not specific, particularly in regards to the management of impacts on the Ornamental Snake from trenching activities, and rehabilitation measures.		
O Project scope	Low	\$0
Dam upgrade and pipelines to transport water extracted from the Suttor River.		
EXCEPTIONAL CIRCUMSTANCES		
Exceptional circumstances P Exceptional circumstances	False	\$0
N/A		
TOTAL COMPLEXITY FEES		\$103,523
BASE FEE		\$8,010
TOTAL FEE		\$111,533

Potential fees for contingent and post-approval activities (if required)

The Department will notify you if a contingent activity fee is applicable due to an additional statutory step being required under the *Environment Protection and Biodiversity Conservation Act 1999*.

Post-approval fees

Evaluation of new Action Management Plan (per management plan) (\$2,690)

Contingent Fees

Request additional information for referral or assessment approach decision (\$1,701)

Variation to the proposed action (\$1,353)

Reconsideration of the controlled action or assessment approach decision at the applicant's request (\$6,577)

Request additional information for approval decision (assessment on referral information, preliminary documentation or bilateral/accredited assessment) (\$1,701)

Request additional information for approval decision (assessment by environmental impact statement or public environment report) (\$7,476)

Variation of conditions (\$2,690)

Variation of an action management plan under conditions of approval (\$2,690)

Administrative variation of an action management plan under conditions of approval (\$710)

Transfer of approval to new approval holder (\$1,967)

Extension to approval expiry date (\$2,690)



Australian Government
Department of the Environment and Energy

FOI 180914
Document 54

EPBC Act Cost Recovery - Fee Schedule

EPBC No: 2018/8191

Date of Fee Schedule: Sept. 6, 2018

Project title: North Galilee Water Scheme, central Queensland

Assessment method: Preliminary Documentation

Fee Schedule

STAGE FEES	Base fee	PART A Complexity costs (A-L, P)	PART B Complexity costs (MNO)	Total
Stage 1	\$2,074	\$4,035	\$0	\$6,109
Stage 2	\$2,289	\$6,388	\$0	\$8,677
Stage 3	\$852	\$6,725	\$34,949	\$42,526
Stage 4	\$2,795	\$16,476	\$34,949	\$54,220
TOTAL PROJECT COST	\$8,010	\$33,625	\$69,898	\$111,533

Notes:

- For assessments by environmental impact statement - If standard guidelines are used under Section 101A(2)(a) of the EPBC Act, the Stage 1 fee will not be applicable.
- For assessments by public environmental report - If standard guidelines are used under Section 96B of the EPBC Act, the Stage 1 fee will not be applicable.
- If no further information is requested under section 95A of the EPBC Act, the Stage 1 and 2 fees will not be applicable.
- The Department advises applicants of the maximum liability for Part B complexity fees at the time of the assessment approach decision, based on the information provided in the referral documentation. Applicants have the opportunity to reduce the Part B complexity fees during the assessment process by improving the quality of information provided to the Department during Stage 2 of the assessment. These Part B complexity fees are confirmed when all the assessment documentation is provided in Stage 2, and are not payable until Stages 3 and 4 of the assessment.

Fee Breakdown

		COMPLEXITY FEE	
CONTROLLING PROVISIONS			
Part A Fees	A Listed threatened species and ecological communities	High	\$25,615
	B Listed migratory species	None	\$0
	C Wetlands of international importance	None	\$0
	D Environment of the Commonwealth marine area	None	\$0
	E World heritage properties	None	\$0
	F National heritage places	None	\$0
	G Nuclear actions	None	\$0
	H Great Barrier Reef Marine Park	None	\$0
	I Water Resources	None	\$0
	J Commonwealth Land/Commonwealth Agency/Commonwealth Heritage Places Overseas	None	\$0
NUMBER OF PROJECT COMPONENTS			
	K Number of project components	Moderate	\$8,010
COORDINATION WITH OTHER LEGISLATION			
	L Coordination with other legislation	Low	\$0
ADEQUACY OF INFORMATION AND CLARITY OF PROJECT SCOPE			
Part B Fees:	M Site surveys/Knowledge of environment	High	\$34,949
	N Management measures (including mitigation and offsets)	High	\$34,949
	O Project scope	Low	\$0
EXCEPTIONAL CIRCUMSTANCES			
Exceptional circumstances	P Exceptional circumstances	False	\$0
TOTAL COMPLEXITY FEES			\$103,523
BASE FEE			\$8,010
TOTAL FEE			\$111,533

Potential fees for contingent and post-approval activities (if required)

The Department will notify you if a contingent activity fee is applicable due to an additional statutory step being required under the *Environment Protection and Biodiversity Conservation Act 1999*.

Post-approval fees

Evaluation of new Action Management Plan (per management plan) (\$2,690)

Contingent Fees

Request additional information for referral or assessment approach decision (\$1,701)

Variation to the proposed action (\$1,353)

Reconsideration of the controlled action or assessment approach decision at the applicant's request (\$6,577)

Request additional information for approval decision (assessment on referral information, preliminary documentation or bilateral/accredited assessment) (\$1,701)

Request additional information for approval decision (assessment by environmental impact statement or public environment report) (\$7,476)

Variation of conditions (\$2,690)

Variation of an action management plan under conditions of approval (\$2,690)

Administrative variation of an action management plan under conditions of approval (\$710)

Transfer of approval to new approval holder (\$1,967)

Extension to approval expiry date (\$2,690)



EPBC Ref: 2018/8191

Mr Hamish Manzi
Head of Environment & Sustainability
Adani Infrastructure Pty Ltd
GPO Box 2569
BRISBANE QLD 4001

Dear Mr Manzi

Decision on referral
North Galilee Water Scheme, Galilee Basin, central Queensland

Thank you for submitting a referral under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This is to advise you of my decision about the referral of the proposed action to construct and operate the North Galilee Water Scheme in the Galilee Basin, Queensland.

As a delegate of the Minister for the Environment, I have decided under section 75 of the EPBC Act that the proposed action is a controlled action and, as such, it requires assessment and a decision about whether approval for it should be given under the EPBC Act. Please note this decision only relates to the potential for significant impacts on matters protected by the Australian Government under Chapter 2 of the EPBC Act.

The information I have considered indicates the proposed action is likely to have a significant impact on listed threatened species and communities (sections 18 and 18A). Based on the information available in the referral, the proposed action is likely to have a significant impact on the following matters of national environmental significance, but not limited to:

- Ornamental Snake (*Denisonia maculata*) – Vulnerable
- Southern Black-throated Finch (*Poephila cincta cincta*) – Endangered
- Squatter Pigeon (Southern) (*Geophaps scripta scripta*) – Vulnerable
- Koala (*Phascolarctos cinereus*) (combined populations of Qld, NSW and the ACT) – Vulnerable
- Brigalow (*Acacia harpophylla* dominant and co-dominant) threatened ecological community – Endangered
- Waxy Cabbage Palm (*Livistona lanuginosa*) – Vulnerable
- Bluegrass (*Dicanthium setosum*) – Vulnerable

I have also decided the proposed action will need to be assessed by preliminary documentation. A copy of the document recording these decisions is enclosed.

Each assessment approach requires different levels of information and involves different steps. All levels of assessment include a public consultation phase, in which

any third parties can comment on the proposed action. Indigenous communities may also need to be consulted during the assessment process. For more information on how and when Indigenous engagement should occur during environmental assessments, please refer to the Indigenous engagement guidelines at: www.environment.gov.au/epbc/publications/engage-early.

Please note, under subsection 520(4A) of the EPBC Act and the *Environment Protection and Biodiversity Conservation Regulations 2000*, your assessment is subject to cost recovery. Please find attached a copy of the fee schedule for the proposed action and an invoice for Stage 1. Fees will be payable prior to each stage of the assessment proceeding. Further details on cost recovery are available on the Department's website at: www.environment.gov.au/epbc/cost-recovery.

If you disagree with the fee schedule, you may apply under section 514Y of the EPBC Act for reconsideration of the method used to work out the fee. The application for reconsideration must be made within 30 business days of the date of this letter and can only be made once for a fee. Further details regarding the reconsideration process can be found on the Department's website at: www.environment.gov.au/protection/environment-assessments/assessment-and-approval-process/refer-proposed-action.

Details on the assessment process for the proposed action and the responsibilities of the proponent are available on the Department's website at: www.environment.gov.au/topics/environment-protection/environment-assessments. Further, the Department has published an *Environmental Impact Assessment Client Service Charter* (the Charter) which outlines the Department's commitments when undertaking environmental impact assessments under the EPBC Act. A copy of the Charter can be found at: www.environment.gov.au/epbc/publications/index.html. The project manager will contact you shortly to discuss the assessment process.

While I have determined the proposed action will be assessed by preliminary documentation, further information will be required to be able to assess the relevant impacts of the proposed action. You should expect to receive a letter from the Department within 10 business days of the payment of Stage 1 fees, outlining the information required.

I have also written to the following parties to advise them of this decision:

Queensland Government	Department of Environment and Science
Commonwealth Government	Minister for Industry, Science and Technology Minister for Resources and Northern Australia Minister for Agriculture and Water Resources

You may elect under section 132B of the EPBC Act to submit a management plan for approval at any time before the Minister makes an approval decision of the proposed action under section 133 of the EPBC Act. If an election is made under section 132B of the EPBC Act, cost recovery will apply to the approval of any action management plans you submit.

Cost recovery does not apply to the approval of action management plans where you do not elect to submit an action management plan for approval under section 132B of the EPBC Act and the approval of the action management plan does not arise from a variation to the approval conditions that you have requested. Where you vary an approval condition and it results in you being required to submit an action management plan for approval, cost recovery will apply to the approval of the action management plan.

Please also note that once a proposal to take an action has been referred under the EPBC Act, it is an offence under section 74AA to take the action while the decision making process is on-going (unless that action is specifically excluded from the referral or other exemptions apply). Persons convicted of an offence under this provision of the EPBC Act may be liable for a penalty of up to 500 penalty units. The EPBC Act is available on line at: www.environment.gov.au/epbc/about/index.html.

If you have any questions about the referral process or this decision, please contact the project manager, s22 [redacted], by email to s22 [redacted]@environment.gov.au or telephone 02 6274 s22 [redacted] and quote the EPBC reference number shown at the beginning of this letter.

Yours sincerely



James Barker
Assistant Secretary
Assessments and Governance Branch

17 September 2018



EPBC Ref: 2018/8191

Mr s22
Director
Impact Assessment and Operational Support
Queensland Department of Environment and Science
GPO Box 2454
BRISBANE QLD 4001

Dear Mr s22 s22

**Decision on referral
North Galilee Water Scheme, Galilee Basin, central Queensland**

This is to advise you of my decision under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) about the referral of the proposed action to construct and operate the North Galilee Water Scheme in the Galilee Basin, Queensland.

As a delegate of the Minister for the Environment, I have decided under section 75 of the EPBC Act that the proposed action is a controlled action and, as such, it requires assessment and a decision about whether approval for it should be given under the EPBC Act.

The information I have considered indicates the proposed action is likely to have a significant impact on listed threatened species and communities (sections 18 & 18A). Please note this decision only relates to the potential for significant impacts on matters protected by the Australian Government under Chapter 2 of the EPBC Act.

I have also decided the proposed action will need to be assessed by preliminary documentation. A copy of the document recording these decisions is enclosed.

If you have any questions about the referral process or this decision, please contact the project manager, s22, by email to s22@environment.gov.au or telephone 02 6274 s22 and quote the EPBC reference number shown at the beginning of this letter.

Yours sincerely

James Barker
Assistant Secretary
Assessments and Governance Branch

17 September 2018



The Hon David Littleproud MP
Minister for Agriculture and Water Resources
PO Box 6022
House of Representatives
Parliament House
CANBERRA ACT 2600

Dear Minister

**Decision on referral
North Galilee Water Scheme, Galilee Basin, central Queensland**

This is to advise you of my decision under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) about the referral of the proposed action to construct and operate the North Galilee Water Scheme in the Galilee Basin, Queensland.

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Questions about this decision can be directed to s22 [redacted], by email to s22 [redacted]@environment.gov.au or telephone 02 6274 s22 [redacted].

Yours sincerely

James Barker
Assistant Secretary
Assessments and Governance Branch

17 September 2018



EPBC Ref: 2018/8191

The Hon Karen Andrews MP
Minister for Industry, Science and Technology
Parliament House
CANBERRA ACT 2600

Dear Minister

**Decision on referral
North Galilee Water Scheme, Galilee Basin, central Queensland**

This is to advise you of my decision under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) about the referral of the proposed action to construct and operate the North Galilee Water Scheme in the Galilee Basin, Queensland.

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Yours sincerely

James Barker
Assistant Secretary
Assessments and Governance Branch

17 September 2018



EPBC Ref: 2018/8191

Senator the Hon Matthew Canavan
Minister for Resources and Northern Australia
Parliament House
CANBERRA ACT 2600

Dear Minister

**Decision on referral
North Galilee Water Scheme, Galilee Basin, central Queensland**

This is to advise you of my decision under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) about the referral of the proposed action to construct and operate the North Galilee Water Scheme in the Galilee Basin, Queensland.

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Questions about this decision can be directed to s22 [redacted], by email to s22 [redacted]@environment.gov.au or telephone 02 6274 s22 [redacted].

Yours sincerely

James Barker
Assistant Secretary
Assessments and Governance Branch

17 September 2018