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9 April 2023

Controller of Water Resources
Department of Environment, Parks and Water Security
16 Parap Road
PARAP NT 0800

By email: water.licensing@nt.gov.au

Dear Controller,

Department of Industry, Tourism and Trade – Application for a Groundwater Extraction Licence, Gunn Point

We refer to the above groundwater extraction licence application for 1500ML (1.5GL) per annum, lodged by the Department of Industry, Tourism and Trade (**DITT**) and advertised in the NT News on 9 March 2023 (**Application**). The Application is made under sections 71F and 60 of the *Water Act 1992 (NT)* in respect of NT Portion 2626 (3820 Gunn Point Road, Koolpinyah).

The Environment Centre NT (**ECNT**) is the peak community sector environment organisation in the Northern Territory, raising awareness amongst community, government, business and industry about environmental issues and assisting people to reduce their environmental impact and supporting community members to participate in decision-making processes and action. ECNT has a close relationship with the subject matter, via a decades long history of making policy and law reform submissions on water in the Northern Territory. ECNT conducts this work as a peak body in the Northern Territory, in the public interest.

ECNT submits that the Application should be rejected on the grounds detailed below. Alternatively, the project as a whole should be referred to the NTEPA as it clearly meets the threshold of having the potential to have a significant impact on the environment.

(a) Grant of water licence to DITT would be unlawful

The Application is the first made under a new category of water licence introduced in 2021 per amendments to the *Water Act*, permitting a "developer" to obtain a "head licence" for a "development precinct", which water entitlement can then be transferred to individual proponents.

Of note, Section 71F(1) of the Water Act states that a person (the developer) may apply for a licence if the developer proposes to do all of the following:

(a) develop land (the development) that would use water for one or more beneficial uses, other than mining activity and petroleum activity;

(b) transfer or lease areas of the land to other persons participating in the development;

(c) transfer the entitlement to water under the licence to those other persons to use for those beneficial uses.

The owner of the relevant land is the Northern Territory Land Corporation. However, the application is made by DITT, for reasons which are unclear in the Application. The Application states that DITT is the authorised occupier of the land, and purports to attach evidence of this. However, no authorisation has been published with the application.

Even if an authorisation of some kind was publicly available, it is clear that DITT cannot apply for a licence under Section 71F of the *Water Act*.

First, DITT is not a "person" as required by s71F(1). A legal person is an entity with capacity to be in a legal relationship, and includes human beings, corporations and bodies specifically created by the legislature to act as legal persons. DITT is a government department, and does not fulfil this criteria.

Second, the head licence provisions are clearly intended to only apply to owners of land, who have capacity to transfer or sub-lease areas of the land subject to a proposed development. DITT is not the owner of the relevant land, and it accordingly has no capacity transfer or lease areas of the land to other persons participating in the development as required by s71(F)(1)(b). As the owner of the relevant land, only Northern Territory Land Corporation can transfer or lease areas of the land to other persons.

Accordingly, the grant of a licence to DITT under section 71F(1) of the Water Act would be unlawful. The proper applicant should be the Northern Territory Land Corporation. The licence must be rejected on this basis.

(b) Conflicts of interest

The owner of the land subject to this proposed development is Northern Territory Land Corporation. The Northern Territory Land Corporation is a private entity created by Northern Territory statute. The Northern Territory Land Corporation has the following board members who hold positions which are relevant to environmental and planning approvals for this proposed development:

- Joanne Townsend, who is also the Controller of Water and the CEO of the Department of Environment, Parks and Water Security; and
- Dr David Ritchie, who is also the Chair of the Planning Commission, and a member of the Northern Territory Environment Protection Authority.

These positions would appear to give rise to significant and multiple perceived or actual conflicts of interest including with respect to the following matters affecting this development:

(a) the "Mapping the Future" study which purports to provide the scientific justification for this proposed development was undertaken by staff at the Department of Environment, Parks and Water Security;

(b) the Controller of Water is the decision-maker with respect to this Application;

(c) the Planning Commission has undertaken planning and stakeholder engagement on the Gunn Point update to the Litchfield Subregional Land Use Plan including in relation to this proposed development[1];

(d) the NTEPA has the power to call in this proposal for assessment under the *Environment Protection Act 2019* if it meets the threshold of having the potential to have a significant impact on the environment (which we say it does).

These multiple overlapping roles give rise to serious concerns about this development, the manner in which it is being pursued, and whether decisions regarding its assessment and approval are independent and arms-length.

Full disclosure of any perceived or actual conflicts of interest is required, including relating to the above matters. Furthermore, the proposed management of these conflicts of interest should be publicly disclosed.

(c) Potential for significant environmental impacts

Gunn Point, including the area proposed for the development, is an area of extraordinarily high ecological, cultural and recreational value. ECNT has advocated for the protection of Gunn Point for over 30 years, and **attaches** a copy of its 2006 report "Rainforest to Reef just 40km from Darwin: an assessment of the conservation values of the Gunn Peninsula/Vernon Islands area".

In ECNT's view, the proposed development has the potential to significantly adversely impact Gunn Point's ecological, cultural and recreational values, warranting its referral for assessment under the *Environment Protection Act 2019 (NT)* on the basis that it has the potential to have a significant impact on the environment.

Our concerns are as follows:

(i) There is a risk of increased salinity from the proposed development

The risk of groundwater salinity as a factor limiting development in this region has been recognised for decades, including in Peter Jolly's 1984 investigation into groundwater resources of the region (upon which the Mapping the Future study by Woltman heavily relies). Jolly's study stated that "if any developments are proposed north of the existing

[1] Dr Ritchie appears to have been directly involved in the proposed update, and makes clear it is "in response to the increased interest in Gunn Point and new more reliable data on soil and groundwater capability from the Mapping the Future Project, as evidenced in the NT Planning Commission's 2021 annual report: https://planningcommission.nt.gov.au/__data/assets/pdf_file/0009/1058094/NTPC-Annual-Report-2020-21.pdf.

Koolpinyah Station northern boundary which have a groundwater requirement approaching the estimated throughflow (ie 2000ML/year) then a more detailed study of this potential salinity problem will be required." His study also stated that if groundwater extraction for a proposed horticultural development at Gunn Point occurred "intrusion of saline water on a massive scale should occur."

The Application itself states that:

> "the primary issue with the groundwater in this area is salinity of the groundwater. The majority of the northern proposed land parcels are located with the zone mapped as having moderate risk, described as being a fresh to brackish saline impact".

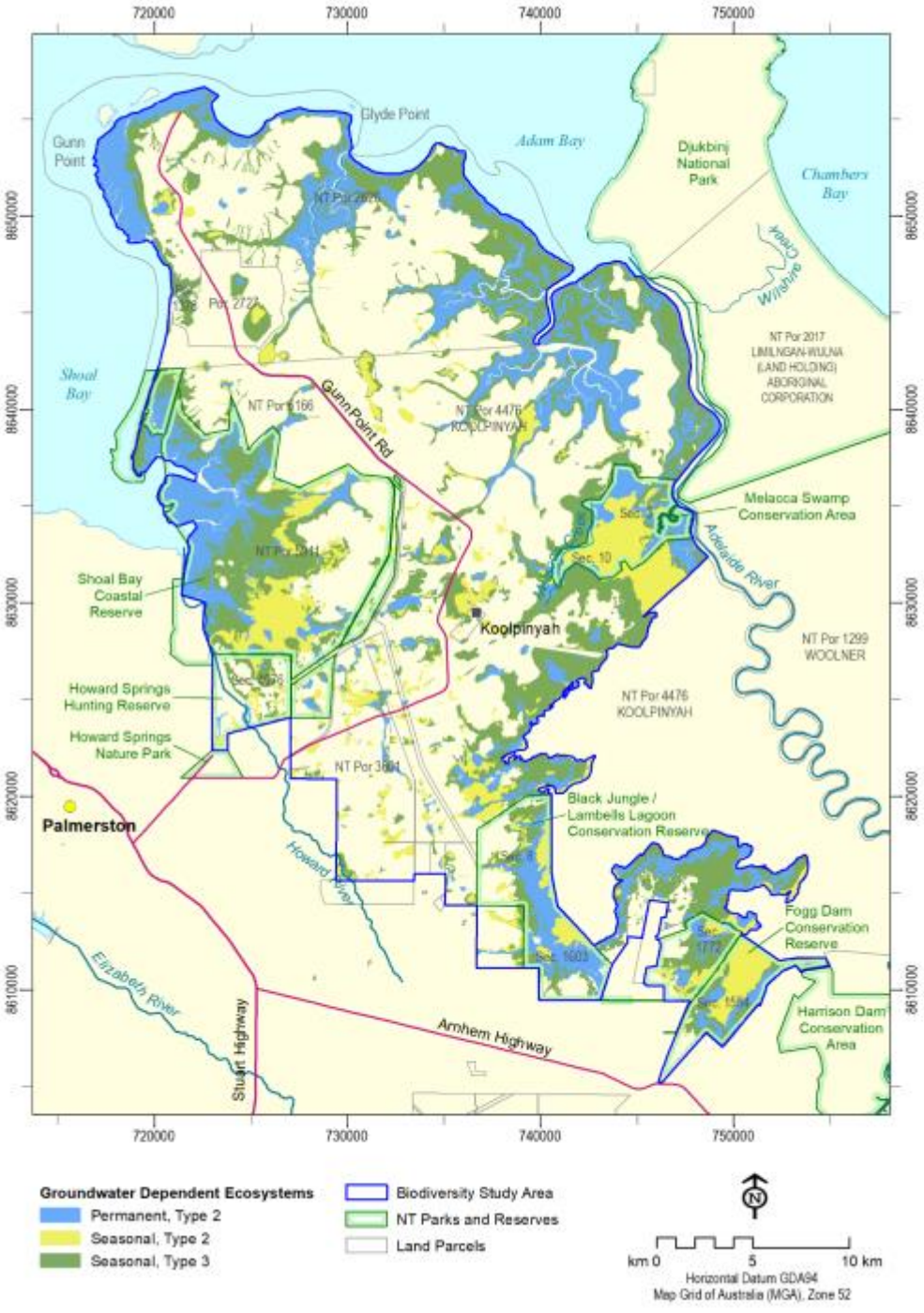
The application proposes a "wait and see" approach to this crucial issue, suggesting that salinity can be monitored utilising existing monitoring bores so that groundwater intrusion is detected. This is not a precautionary approach, given likely time lags between extraction and impacts (meaning that by the time bores detect saltwater incursion considerable damage may be irreversible). Further studies are needed to quantify the likely impacts of saltwater incursion and salinity more broadly on the area.

It is noted that saltwater incursion into aquifers and salinity associated with groundwater extraction could seriously impact not just the development footprint, but a much wider area including important vegetation communities comprising threatened flora such as dense populations of *cycas armstrongii* and the endemic *typhonium praetermissum*, populations of threatened fauna such as black-footed tree rats, and groundwater dependent ecosystems close to the area.

The salinity risks of the proposed extraction (and the development as a whole) raise questions about whether the development should be pursued at all. They should be thoroughly investigated and assessed as part of an environmental impact assessment.

(ii) There may be significant impacts on groundwater dependent ecosystems, threatened species and vegetation communities if the Application is granted

The Biodiversity Assessment of the Gunn Point Area (Stokeld et al 2020) identified both permanent and seasonal groundwater dependent ecosystems with the area of seasonal groundwater dependent ecosystems exceeding those which are permanent. The two main groundwater dependent ecosystems identified in the area are Melacca Swamp and Bankers Jungle, located on the Adelaide River floodplain. However, Stokeld et al also identify a number of other GDEs that have not been previously mapped (see map below, from p 19):



They assert that vegetation communities identified as GDEs in fact cover 44 541 hectares (approximately 48%) of the study area (p 18). They also note a series of conditions required to protect biodiversity values including to "avoid development activities which may impair hydrological inputs to groundwater dependent ecosystems".

In a report on groundwater resources of the Gunn Point Area, Woltman (2020, page 21) describes two key aquifers in the study area: an "Upper seasonal aquifer" and a "Lower productive aquifer" with the focus of that report on the lower productive aquifer.

In a brief discussion of the upper seasonal aquifer, Woltman observes that "groundwater dependence of vegetation in these areas is unknown, but spring flows do extend into the dry season well after rainfall has ceased" (p 22). This illustrates the uncertainty that exists in understanding what is required to maintain the groundwater regime and hence long-term maintenance of habitat for threatened species including *cycas armstrongii, Crepidium marsupichilum, Cleome insolata, Stylidium ensatum, Typhonium taylori, Utricularia dunstaniae* and the Howard Toadlet on the Gunn Point Peninsula.

Woltman focuses primarily on the lower productive aquifer (Koolpinyah Dolostone), which is the aquifer targeted for the proposed development. Crucially, this aquifer is essential for maintenance of the permanent groundwater dependent ecosystems at Bankers Jungle and Melacca Swamp.

Melacca Swamp is a conservation reserve on the Adelaide River floodplain and is important for both crocodile breeding and magpie geese. The 2014 Joint Management Plan for the Adelaide River Conservation Reserves states:

> The Adelaide River floodplain reliably provides some of the best nesting habitat in the Northern Territory for magpie geese (Bayliss and Yeomans 1990). While most of the significant nesting areas occur outside the boundaries, the Reserves provide essential Dry season habitat for the geese. Melacca Swamp contains some of the best on-park breeding sites for saltwater crocodiles recorded in the Top End and is one of the highest density breeding areas for this species (Wildlife Management International 2007).[2]

Any impacts on groundwater discharge to Melacca Swamp could impact these species, as could changes in groundwater quality from increased salinity from the development. This has not been adequately quantified and addressed in the Application.

Bankers Jungle is located within the Black Jungle Conservation Reserve. The rainforest at Bankers Jungle draws around half its water requirement from the lower aquifer late in the dry season (Liddle et al. 2008). A reduction in water supply from this aquifer could negatively impinge on threatened rainforest species including the endemic *luisia corugata* (orchid), the extremely rare *typhonium jonsonianum* (which has only been found at Black Jungle), and the *tychosperma macarthurii* that occurs at this site.

It is unclear how the proposed water extraction might impact the groundwater dependent ecosystems at Gunn Point, but the impacts could be very significant if this does occur. Sustainable recharge is not defined and while the water table may rebuild to former wet

[2] https://depws.nt.gov.au/__data/assets/pdf_file/0006/249036/Adelaide-River-Conservation-Reserves-JM-Plan-August-2014_final.pdf.

seasonal levels during the wet season, a failure of the permanent springs to keep flowing throughout the dry season could impact these cultural and environmental values, and make the spring-fed rainforests significantly more vulnerable to fire impact. In addition, there may be considerable drawdown from the proposed extraction affecting discharges to GDEs and vegetation communities. The Application indicates possible drawdown of up to 41.6 metres at one bore (after 6 days of pumping at 34L/s). However, no analysis is provided of the possible impacts of such drawdown on vegetation communities or GDEs, including those listed above.

There is insufficient information in the Application to ascertain the level of risk of the proposed extraction to these GDEs, or any other vegetation communities. Indeed, the analysis provided in the Application appears to contradict the evidence provided above. In relation to GDEs, the Application states:

> There are no known Groundwater Dependent Ecosystems in the vicinity of the proposed development. The surface water assets in the area are highly ephemeral and flows during the early dry season, after wet season rains have ceased, are associated with drainage from wetlands and interflow, not with groundwater discharge from the targeted aquifer. The targeted aquifer is located more than 75m below ground level…
>
> The DEPWS mapping the future project stated that 'Mapping of springfed vegetation within the study area provides confirmation of the key groundwater discharge mechanism of the Koolpinyah Dolostone aquifer in this area. These spring fed discharge systems include Melacca Creek and Bankers Jungle, located in the south-east of the study area in conservation zone bordering Koolpinyah Station.'
>
> These environmental assets area located approximately 16km south of the proposed development area and have been associated with the recharge area in that location. Given that there is no recharge in the area of the proposal and that it is located well above and away from that recharge area, it is considered to be highly unlikely that there would be any measurable impact to those GDEs from the proposed extraction of groundwater from the dolomite aquifer.

These assertions require testing, and appear to place emphasis on recharge, rather than discharge mechanisms. The Application does not mention the other GDEs in the area (that is, apart from Melacca Creek and Bankers Jungle) identified by Stokeld et al. Indeed, the Stokeld report does not appear to be addressed at all in the Application. No citation is given for the assertion that discharges to the Melacca Swamp and Bankers Jungle are associated with recharge in that area only. Indeed, it seems reasonably clear from the Woltman and Stokeld studies that discharges from the Koolpinyah Dolostone aquifer may be impacted by extraction from this aquifer some distance from the discharge area. The application does not attempt to quantify these impacts, which could be very significant given the natural and cultural values of groundwater dependencies.

Finally, the fact that it is an application for a head licence significantly increases the potential environmental risks of this development. This is because any sub-licences granted to individual proponents will not be subject to the factors in section 90 of the *Water Act*, nor will such licences be publicly advertised. It is possible, for instance, that a prospective proponent will seek to sub-licence the whole entitlement (1.5GL per annum) and extract this amount from a single bore, increasing the localised impacts of such extraction (including due to drawdown).

(iii) There is no assessment of the impact of the licence on cultural values, cultural heritage or sacred sites

The development may impact the cultural values of Gunn Point (which is Larrakia Country) and the Adelaide River floodplain, including the groundwater dependent Bankers Jungle (part of Black Jungle) and Melacca Swamp (which is Wulna Country).

The Joint Management Plan for the Adelaide River Conservation Reserves (which include Black Jungle and Melacca Swamp) state that these areas are subject to an Indigenous Land Use Agreement under the Native Title Act. Of note, the Joint Management Plan states:

> "The primary value of the Adelaide River Conservation Reserves is that they support a living cultural landscape made up of diverse coastal and freshwater wetlands, which provides significant tourism and recreational opportunities. Harrison Dam and Lambell's Lagoon are two of the few reserves in the Northern Territory where recreational hunting is permitted.
>
> The wetland habitats have a high conservation value, supporting rare and threatened species, saltwater crocodile breeding areas, and the world's highest recorded biomass of predator (water python) and prey (dusky rat) species.
>
> The wetlands and associated landscapes include sites and landscapes of ritual, mythological and spiritual significance to Wulna Traditional Owners, and they have long been a source of abundant traditional foods, medicines and other resources for them."

No reference is made to the impact of the proposed licence on cultural values, cultural heritage or sacred sites. An authority certificate should be obtained from AAPA, and a cultural heritage survey obtained. It is noted that this is a government project, and accordingly best practice should be adopted with respect to Indigenous cultural heritage, values and sacred sites.

(iv) The proposed development is speculative and its impacts are uncertain

ECNT notes that there is no justification given for the volume of water sought in the Application, nor are any details given about the crops proposed to be grown. The development is entirely speculative in nature and appears to be being pursued solely

because the Northern Territory Government has received $6m in funding from the National Water Grid.

There is little to no evidence of a business case for this development, nor why the asserted economic benefits should trump the important ecological values of this area. This should be thoroughly tested as part of an environmental impact assessment of the development as a whole.

In ECNT's view, the Application should be refused. It cannot on any sensible view be granted. Alternatively the proposal as a whole should be referred to the NTEPA under the *Environment Protection Act* because it clearly has the potential to have a significant impact on a number of environmental and cultural objectives.

If you have any questions, please do not hesitate to contact Kirsty Howey on kirsty.howey@ecnt.org.

Yours faithfully,

Kirsty Howey
Executive Director