SAND MINING IN ROE CREEK
Case Card

THE ISSUE

More sand mining in Roe Creek will exacerbate existing damage to the river. A Mineral Title Application to continue sand mining in the river has been advertised.

Public submissions in response to the application must be lodged by September 8.

BACKGROUND INFORMATION

Sand mining

Sand is the second most used resource on Earth, after water.
It is a fundamental ingredient in concrete, asphalt, glass and other building materials.
An estimated 50 billion tonnes of sand is extracted around the World for construction every year, enough to build a 27m high, 27m wide wall around the planet. [1]

Sand Mining in Roe Creek

There are several sand mines currently operating in Roe Creek.

Environmental impacts of sand mining

The physical environment

Sand mining in river beds changes the river width and depth.

Upstream impacts
Excavation of a mining pit creates a 'nick point'. When the river flows the water crashes over the nick point into the pit (creating waterfalls and eddies). This erodes the walls of the pit, this 'headcutting' erosion gradually extends upstream[2]. Headcutting mobilises large amounts sand from the riverbed, much of this is deposited into the mining pit.

Downstream impacts
As streamflow moves beyond the site the amount of transported sand leaving the site is now less than the sand carrying capacity of the flow. This sand-deficient flow or 'hungry' water picks up more sand from the stream bed and banks below the mining site, furthering the degradation process.

The biological environment

Degraded stream habitats result in significant loss of biodiversity that stretches from the river bed and shoreline flora and fauna to the whole floodplain area.

The chemical environment

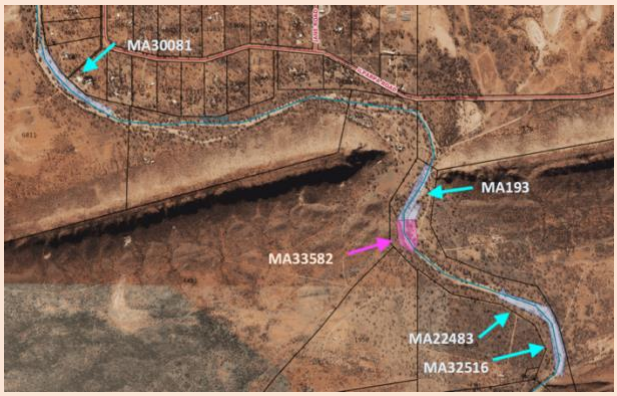
The effects on the chemical environment are a reduced water, air and soil quality through pollution, this includes increased dust, and leakage from excavation machinery and transportation vehicles. [3]

The built and cultural environment

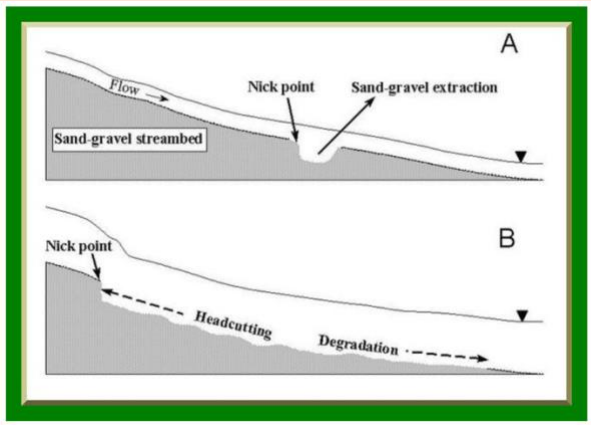
Sand-and-gravel mining in stream channels can damage public and private infrastructure, and significantly impact communities and culture.[3]

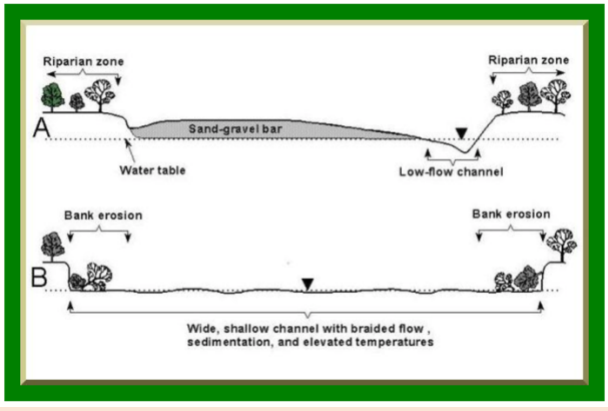
Roe Creek
Roe Creek runs west of Mparntwe (Alice Springs) through Honeymoon and Temple Bar Gaps.
The River is part of the water flow system that includes Ilparpa Claypans, Conlon's Lagoon and Simpson's Gap (Rungutjirpa). It also recharges local domestic water supplies and the aquifer that supplies Alice Springs' drinking water.

Sand mining in Roe Creek
There are already several sand mines in Roe Creek.
This application is shown in pink.
The blue are existing sand mining 'mineral titles'.



Physical impacts of sand mining in river beds[2]





August 2023

SAND MINING IN ROE CREEK
Case Card

Condition of Roe Creek

Roe Creek is a wonderful river. It is lined with magnificent old river gums. These huge trees contain hollows which are home to many birds and animals. Red tailed black cockatoo, rainbow bee-eaters, the Australian bustard, mulga snake and woma python have been observed in the area.

Roe Creek is suffering from severe erosion. As a result, many old river gums have either fallen or are at risk of falling with the next river flow.

There is evidence of highly unstable banks and erosion. As well as causing tree losses, this erosion is causing property losses.

Rules governing sand mining

Sand mining in a river is a questionable practice at the best of times, especially in small rivers like Roe Creek.

Mining is highly inappropriate in a river that is already severely eroding.

Guidelines from other Australian jurisdictions agree. The guidance from Western Australia[4] makes it clear:

1. In-river sand mining should avoid eroding sections of waterways
2. It is lower risk to mine old river sand deposits not in the river channel - *"resources can sometimes be sourced from the floodplain area or abandoned stream channels such as on terraces and outer areas of floodplains. These can be easier to access and have lower environmental risk than mining within the waterway channel".*
3. Impacts are less in larger rivers.

Based on the WA guidelines sand mining would not be allowed in Roe Creek at all, as mines should avoid eroding sections of waterways.

The United Nations Environment Program has identified solutions to the problems linked to sand mining, including the creation of legal frameworks for sand extraction. This has also identified a need to develop a circular economy for sand and other building materials, to accurately map and monitor sand resources, and to restore ecosystems damaged by sand mining.[1]

Old sand deposits away from the active channels are often a far safer alternative. To start with the NT Government could facilitate safer extraction by identifying availability of alternative sand sources.

Current application

The Mineral Title application for a mine occupying 4 hectares was advertised on 9 August.

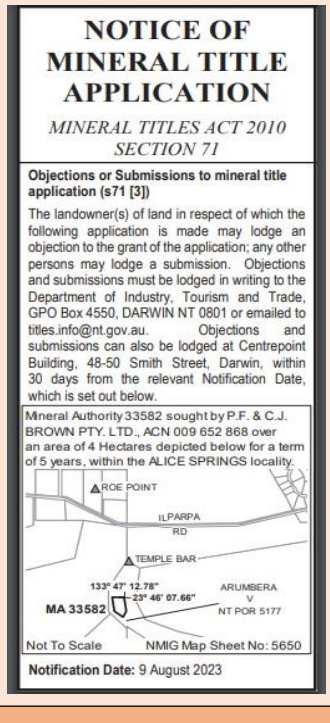
This is in part of Roe Creek where the banks are significantly eroding.

The roots of river red gums that line the back are already heavily exposed.

The river bed is characterised by areas of exposed clay, with minimal sand left.

The river appears to be showing the signs of sediment deficient flow. This is unsurprising as it is downstream of two large sand mines, these mines will consume sediment first.

Current condition of Roe Creek



NOTICE OF MINERAL TITLE APPLICATION

MINERAL TITLES ACT 2010
SECTION 71

Objections or Submissions to mineral title application (s71 [3])

The landowner(s) of land in respect of which the following application is made may lodge an objection to the grant of the application; any other persons may lodge a submission. Objections and submissions must be lodged in writing to the Department of Industry, Tourism and Trade, GPO Box 4550, DARWIN NT 0801 or emailed to titles.info@nt.gov.au. Objections and submissions can also be lodged at Centrepoint Building, 48-50 Smith Street, Darwin, within 30 days from the relevant Notification Date, which is set out below.

Mineral Authority 33582 sought by P.F. & C.J. BROWN PTY. LTD., ACN 009 652 868 over an area of 4 Hectares depicted below for a term of 5 years, within the ALICE SPRINGS locality.

Notification Date: 9 August 2023

August 2023

SAND MINING IN ROE CREEK

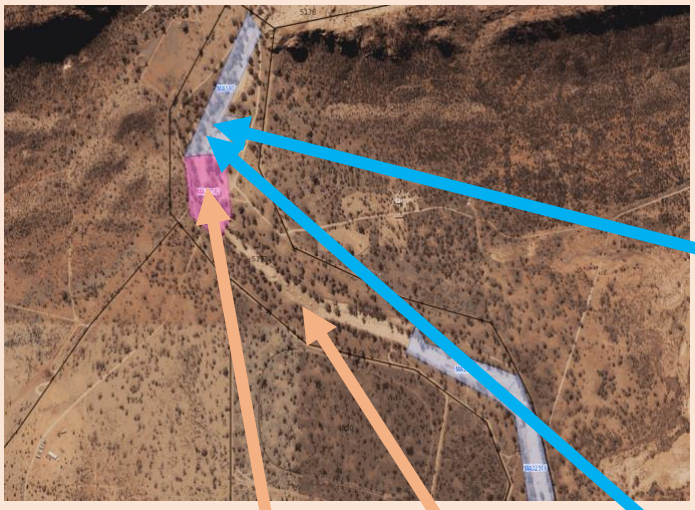
Case Card

ACTION REQUEST (WHAT WE WOULD LIKE DONE / POSSIBLE SOLUTIONS)

A healthy river and protecting river gums and property are more important than sand mining.

Refuse the Mineral Title Application - Mineral Authority 33582 for a mine occupying 4 hectares advertised by P.F. & C.J. Brown PTY LTD.

State of Roe Creek



Ground image October 2022
Mining pit –creates a nick point.
Note tree standing upstream from nick point, roots exposed.

River Flow February 2023

Satellite image August 2023
2022 mining pit filled with sediment
New pit
Note tree upstream has now fallen.

Ground image August 2023
Erosion obvious.
Some remedial action appears to have taken place (some roots covered with sand)

Signs of 'hungry water' - Clay base of river exposed

REFERENCES

1. https://www.unep.org/news-and-stories/story/problem-our-dwindling-sand-reserves
2. https://ponce.sdsu.edu/three_issues_sndminingfacts01.html
3. https://www.sciencedirect.com/science/article/pii/S0048969722029746#:~:text=In%20the%20biological%20environment%2C%20the,and%20soil%20quality%20through%20pollution.
4. https://www.wa.gov.au/system/files/2022-06/WQPN-15-Basic-raw-materials-extraction.pdf

August 2023

SAND MINING IN ROE CREEK

Submission Writing Tips

Have Your Say on the future of Roe Creek

Lodge a submission by September 8, 2023 to

Department of Industry Tourism and Trade
GPO Box 4550
DARWIN, NT 0801

titles.info@nt.gov.au

Department of Industry Tourism and Trade
GPO Box 4550
DARWIN, NT 0801

RE: Submission on application for Mineral Title Application - Mineral Authority 33582 sought by P.F. & C.J. Brown PTY LTD

To Whom it May Concern,

Introduce yourself

e.g. I am a resident of Alice Springs.

Identify the issue you are concerned about *(you can use the issue from the case card)*

e.g. The new application to mine sand in Roe Creek will exacerbate existing damage to the river.

Explain in your own words why this issue is a concern

e.g. Roe creek is valued. The trees are magnificent, and of immense habitat value.

Include some facts *(you can use the back ground information from the case card)*

e.g. The river is being eroded. Many trees have fallen upriver from the proposed mine site and many trees within the 4 hectare footprint already have their roots exposed.

It is highly inappropriate to allow new mines in a river already suffering erosion.

This mine is particularly risky as it is down river from other large sand mines, which are already taking up large amounts of river sediment.

The area in question is already displaying the hallmarks of sediment-deficient flow, where "hungry" water picks up more sediment from the stream reach below the mining site, furthering degradation of the river bed.

There are safer options for sand mining, such as taking sand from old sediment deposits away from active river channels.

Tell them what you would like them to do

e.g. Please protect Roe Creek - refuse the Mineral Title Application - Mineral Authority 33582 for a mine occupying 4 hectares advertised by P.F. & C.J. Brown PTY LTD.

Thank you for taking the time to consider this letter. I look forward to your response.

Regards,

Your name