

Review of Seabed Mining in the Northern Territory – Environmental Impacts and Management

Final Report | December 2020



Executive Summary

The Northern Territory Environment Protection Authority (NT EPA) provides this review of impacts of seabed mining and the management of this potential industry to the Northern Territory Government (NT Government) in accordance with Government's request and provided terms of reference.

NT EPA's review identifies issues for further consideration by the NT Government; however, the review does not provide a recommendation on the future of seabed mining in the Northern Territory (NT). Ultimately, it is a matter for the NT Government to determine its policy position on seabed exploration and mining in coastal waters of the NT.

The coastal waters of the NT have important environmental and natural resource values. They are highly valued by Territorians for their environmental, cultural and recreational importance and the role they play in natural resource-based industries such as commercial fishing, aquaculture and tourism.

The coastal waters of the NT also potentially contain mineral resources that could be exploited through seabed mining.

In March 2012, the NT Government introduced a moratorium on seabed mining in NT coastal waters. The moratorium was established following community concerns and acknowledges the limited knowledge and information about the environmental impacts of seabed mining and their management.

This report has been prepared by the NT EPA to advise the NT Government on:

- the actual or potential impacts on the environment and other resource industries, and
- the methods for managing the impacts of seabed mining.

Advice on the risks to, and protection of, Aboriginal sacred sites will be provided separately by the Aboriginal Areas Protection Authority (AAPA). Advice from the NT EPA and AAPA will provide a basis for the NT Government to consider the possible future development and sustainability of this industry.

Seabed mining is an evolving industry focused on exploiting aggregate and mineral deposits on and under the seabed. It is considered a relatively new and controversial industry in Australia and other countries.

The likely target resources for seabed mining in the NT include: aggregate sands or gravels, mineral sands containing gold, diamonds and rare earth minerals, offshore salt deposits, and mineral deposits (manganese, phosphate, bauxite) that are extensions of known onshore resources. The techniques available for seabed exploration and mining are continually advancing. Mining methods most likely to be used in coastal waters of the NT involve scraping or excavating the seabed using hydraulic or mechanical dredges, or use of vertical (from anchored platforms) and horizontal drilling (from an onshore base).

The NT EPA's review describes the environmental values associated with the coastal waters of the NT that may be impacted by seabed mining, including biophysical, social and economic values. It identifies that seabed mining has the potential to impact these environmental values and other resource industries of the NT both directly, indirectly and cumulatively. The review describes the range of management measures that, depending on the scale, nature and location of a seabed mining proposal, may be available to seek to manage those impacts that are manageable while noting that the effectiveness of measures on some impacts will remain uncertain and some impacts could remain unacceptable.

The NT EPA's review identifies:

- the wide variability in scale, nature and location of mining activities, with the significance of impacts, and the extent to which they can be effectively managed, strongly related to the scale, nature and location of individual proposals
- limited experience in regulating seabed mining in tropical environments in Australia and the world
- the gaps in knowledge about the marine and coastal environments of the NT required to adequately assess and make decisions about the potential impacts of seabed mining and their management
- the considerably strengthened environment protection framework afforded by the *Environment Protection Act 2019* (EP Act) that provides for the environmental impact assessment and approval of proposals that have the potential to have a significant impact on the environment.

The NT does not have any specific regulation aimed at the environmental impacts of seabed mining. With the introduction of the EP Act, the regulatory environment and decision-making framework for identifying and managing the impacts of proposals in general have substantially improved since 2012 when the moratorium was introduced. Any seabed mining proposal would be considered under this new regulatory framework. This framework ensures the rigorous assessment of environmental impacts by an independent authority, with numerous opportunities for community participation. It ensures that the assessment undertaken by the NT EPA directly and transparently informs approval decisions by the Minister for Environment.

The NT Government's commitment to transferring the environmental regulation of mining from the *Mining Management Act 2001* to the EP Act provides an opportunity to consider whether further reform is required to regulate seabed mining activities.

Notwithstanding the regulatory environment has changed, there are considerable challenges in effectively regulating seabed mining operations. The lack of adequate environmental information is a major barrier. It is possible that manageable impacts from small-scale seabed mining activities in relatively data-rich locations and/or resilient ecosystems could be effectively assessed and regulated. In contrast, seabed mining activities on a large scale, in sensitive environments and/or where data is scarce, will require a very substantial investment by the proponent to provide adequate baseline data, describe potential impacts with sufficient certainty, and develop evidence-based mitigation measures. In some situations, the costs to the proponent to collect the necessary information to support a proposal is likely to be highly prohibitive to the viability of the proposal. As a consequence of high levels of uncertainty and risk, the NT EPA expects that some proposals may be unacceptable and result in a recommendation of early refusal by the Minister for Environment to provide certainty to proponents and government, avoiding unnecessary expenditure and delay.

The NT EPA has made a number of key findings and conclusions on the management of seabed mining in the coastal waters of the NT in its advice to the NT Government.



List of key findings and conclusions

1. Any seabed mining activity in the Northern Territory must occur within an evidence-based, transparent, robust regulatory and policy framework that promotes ecologically sustainable development and establishes clear expectations on industry. This framework should be supported by:
 - the declaration of marine environment protection ‘no go’ areas for areas with high biodiversity, economic, recreational and/or cultural value
 - adequate baseline knowledge of environmental values
 - documenting the appropriate and acceptable standards for seabed mining practices and environmental management.

Should seabed mining be considered for the Northern Territory, adequate resourcing would be required to ensure that government, the NT EPA and regulators have the capacity and expertise to deliver policy and technical guidance, rigorous environment impact assessment and regulatory oversight of a new and complex industry.

2. The Northern Territory Government should consider declaring a ‘seabed mining’ activity trigger under the *Environment Protection Act 2019* for all seabed exploration and mining activities so that referral to the NT EPA is required to determine whether environmental impact assessment is required.
3. Seabed mining activities can be broadly categorised into three classes, based on their potential for significant environmental impact:
 - Manageable impacts – are likely in some relatively data-rich, low-sensitivity locations. Potentially significant impacts may be effectively managed under current environmental impact assessment and regulatory arrangements resulting in acceptable proposals.
 - Uncertain impacts – are likely in some situations, based on either the impact of seabed mining or the condition/quality and knowledge about the receiving environment. Potentially significant impacts may be effectively managed based on the extensive collection of new environmental information and knowledge prior to environmental impact assessment.
 - Unacceptable impacts – are likely in some situations where serious environmental risks and high uncertainty remain and no amount of information or knowledge is likely to adequately address the residual impacts in a reasonable time and at a reasonable cost. The NT EPA considers these proposals are likely to be unacceptable and may trigger a recommendation for early refusal.
4. Currently, the lack of adequate environmental information and knowledge about the existing condition of environmental values and the potential impacts from seabed mining is a major barrier to the robust environmental impact assessment, approval and appropriate conditioning of seabed mining in the Northern Territory.

There is difficulty in applying known management measures to poorly understood marine environments. This contributes to uncertainty about the effectiveness of management and mitigation measures.

It will be important to communicate to proponents the considerable information requirements necessary for robust environmental impact assessment, including adequate baseline data that encompasses the substantial natural, temporal and spatial variation in marine and coastal environments.

5. The collection of adequate data at a regional scale required for environmental impact assessment requires coordination between industry, government, research institutes and other stakeholders, rather than a piecemeal approach at the individual project scale.

The establishment of a government managed and resourced central data repository is essential to support environment protection and the assessment and regulation of any proposed seabed mining activities in the Northern Territory. An accessible data repository would enable the most effective use of environmental data collected by industry, research organisations and government agencies and ensure that data is:

- collected to appropriate data standards
- verified and stored securely
- shared amongst all stakeholders.

Over time, this approach would further reduce the barriers to the robust assessment, approval and appropriate conditioning of seabed mining in the Northern Territory.

Any NT seabed mining policy should ensure that data collected for the purposes of understanding the marine environment to support seabed mining must be made available to the broader community.

6. Should seabed mining be approved, relevant approvals would require environmental monitoring that informs regulation of proposal-specific management targets, and develops an evidence-based understanding of environmental impacts to support future impact assessment and regulation of the industry. Baseline data, monitoring data and compliance reporting should be reviewed on a regular basis and be available to the public.
7. The NT EPA considers that the use of adaptive management would not be appropriate for managing the high levels of uncertainty and risk associated with the mitigation of potentially significant environmental impacts from seabed mining proposals. Any use of adaptive management would be limited in its application to clearly defined issues where it can be proven to be effective.
8. The NT EPA considers that environmental offsets cannot currently be readily or easily applied to seabed mining proposals in Northern Territory coastal waters. The collection of pre-impact baseline data does not qualify as an environmental offset.
9. Closure and rehabilitation are important considerations for the assessment, approval and management of seabed mining. In the absence of specific guidance, seabed mine closure and rehabilitation should follow the best practice principles of the International Marine Minerals Society Code for Environmental Management of Marine Mining, the International Council on Mining and Metals for Mine Closure, and the WA Guidelines for Preparing Mine Closure Plans.

Requirements to achieve environmental protection outcomes must include: extensive baseline information, appropriate financial assurance, progressive rehabilitation wherever possible, agreed rehabilitation objectives, completion criteria and monitoring of rehabilitation success. These requirements should be captured in specific closure and rehabilitation criteria and guidance developed by government with substantial industry and stakeholder input.

Regulation of seabed mining would need to include the application of a financial assurance framework that adequately protects the interests of government and the community.

Effective rehabilitation and biological recovery is unlikely to be feasible where seabed mining removes or alters extensive areas of the seafloor, or for seabed mining proposals greater than five years duration.

10. Independent expert groups can provide valuable advice to regulators and industry during the planning, assessment, operational and rehabilitation stages of seabed mining projects, should seabed mining proceed in the Northern Territory beyond a limited number of small-scale operations.

The cost of funding a proposal specific expert advisory group would appropriately lie with the proponent with its scope and membership determined by the regulator in line with the 'user pays' principle.

11. The powers afforded by the *Environment Protection Act 2019* to the Northern Territory Government and the NT EPA (section 6.1) provide a strong framework for community involvement in the environmental impact assessment and approvals process and, ultimately, environment protection.

Transparent, meaningful community engagement and consultation should commence early in project planning prior to the impact assessment and approvals process, and extend to project implementation and closure.

Further investigation of learnings from the Northern Territory (Hydraulic Fracturing Inquiry), national (NOPSEMA) and international (NZ and BMAPA) experiences will be valuable to guide the Northern Territory Government's position, implementation and communication pathways.

