

**RECOMMENDATIONS CONCERNING  
PRESERVATION OF THE THREATENED  
BIODIVERSITY OF THE HOWARD SAND  
PLAINS SITE OF CONSERVATION  
SIGNIFICANCE**

August 2015

Version 0.3

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<b>1 Introduction .....</b>	<b>4</b>
1.1 Findings of the Report.....	4
<b>2 Protection of threatened species in the Northern Territory .....</b>	<b>7</b>
2.1 Territory Parks and Wildlife Conservation Act.....	7
2.2 Environmental Assessment Act.....	9
2.3 Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth).....	10
2.4 Mineral Titles Act and Mining Management Act .....	11
2.5 Planning Act.....	13
<b>3 Application of the regulatory framework for protecting threatened species.....</b>	<b>14</b>
<b>4 Regulation of threatening processes in the Howard sand plains .....</b>	<b>15</b>
4.1 Urban and rural development assessment and approvals .....	15
4.2 Abstraction of ground water .....	15
4.3 Assessment and approvals for extractives mining .....	15
4.4 NT EPA’s response to the failure to assess impacts.....	17
4.5 An approach to protect the sand plains’ biodiversity .....	18
<b>5 Recommendations .....</b>	<b>19</b>
5.1 A protected area for the threatened sand plains’ biodiversity.....	19
5.2 Reduction of threatening processes: abstraction of water.....	19
5.3 Reduction of threatening processes: environmental impact assessment	20
5.4 Reducing the likelihood of failure to manage threatened species .....	20

**Figures**

Figure 1: Option 1 for a protected area for the Howard sand plains biodiversity. ....	6
Figure 2: Option 2 for a protected area for the Howard Sand Plains biodiversity....	7
Figure 3: Pattern of land tenure across the SOC .....	21

## 1 Introduction

Section 25 of Part 3 of the *Northern Territory Environment Protection Authority Act* (the NT EPA Act) provides the Minister with the ability to request advice from the Northern Territory Environment Protection Authority (NT EPA), or alternatively the NT EPA may on its own initiative advise the Minister, about any of the following matters:

- (a) achieving appropriate and effective environmental policy and management for the Territory
- (b) legislation related to the environment and its administration
- (c) issues affecting the Territory's capacity to achieve ecologically sustainable development
- (d) emerging environmental issues
- (e) the cumulative impacts of development on the environment
- (f) any other matter related to the objectives of the NT EPA.

The NT EPA is concerned that unless something is done soon there is a high probability of a gradual decline and ultimate extinction of the threatened biodiversity of the Howard sand plains Site of Conservation Significance (SOC). The threatened sand plains' biodiversity is of significance internationally and nationally.

Based on the findings of the attached environmental quality report, *Biodiversity of the Howard Sand Plains Site of Conservation Significance* (the Report), the NT EPA provides recommendations to protect the sand plains' threatened biodiversity in a protected area, and to improve legislation and processes to reduce the risk of future failure to provide for the protection and management of the Territory's threatened biodiversity.

In providing this advice, the NT EPA has been particularly mindful of its objectives to promote ecologically sustainable development and to protect the environment, having regard to the need to enable ecologically sustainable development. The NT EPA regards the advice as being in keeping with the Northern Territory Government's Framing the Future Policy and Economic Development Strategy. It is compatible with the Northern Territory being party to the National Strategy for the Conservation of Australia's Biodiversity and signing the National Strategy for Ecologically Sustainable Development in 1992. It is in accord with the latter Strategy's guiding principles including 'where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation'.

### 1.1 Findings of the Report

The Report provides background on the significance and vulnerabilities of the sand plains' biodiversity to disturbance and threats to the biodiversity. It documents the absence of effective ways to restore the biodiversity following impacts of existing threats and documents requirements for preservation of the biodiversity.

The key findings of the Report are that the Howard sand plains SOC is of international, national and Northern Territory significance. The significance is based on it having the world's most species rich communities of the carnivorous plants, *Utricularia* (bladderworts), three threatened plants (*Utricularia dunstaniae*, *Typhonium taylori* and *Ptychosperma macarthurii*) and the threatened Howard toadlet (*Uperioleia daviesae*). These species are listed as threatened under the *Territory Parks and Wildlife Conservation Act* (TPWC Act), with *T. taylori* also listed as endangered under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The major threats to the sand plains biodiversity are rural land uses and development, abstraction of ground water, and the habitat removal and hydrological impacts from mining of extractive minerals.

Approximately 31.8% of the SOC is occupied by existing urban and rural development on lands around the low plateau margins of the plains. Urban/rural development over much of the remaining land is constrained by seasonal saturation and inundation. Impacts include those from unregulated recreational activities. There are also areas of pastoral land use in the north.

Abstraction of ground water from over 3000 domestic bores in the adjacent rural residential area, and bores for the supply of water to the Darwin area have lowered the late Dry season water table by up to 10 m and possibly more in some areas, with a less extreme lowering extending into the sand plains. Flows to the Howard River have been reduced by up to 40% and there are significant reductions in flows to wetlands. Hydrological impacts of the extractive mineral industry on the sand plains' biodiversity have never been assessed.

Changes to ground and surface water hydrology have been recorded as impacting two species of threatened biodiversity, are likely to be impacting on another, and pose a significant threat to the species rich bladderwort community.

The superficial sand deposits of the Howard sand plains have been removed at an average rate of approximately 300 000 tonnes per annum over the past 13 years. Projected increases in the rate of extraction indicate that the sand resource and the associated biodiversity will be extinguished by 2036.

The report concludes that the only effective measure to preserve the biodiversity is to establish a protected area. It documents a review of five options for a protected area(s):

- Option 1. A protected area including the seasonally inundated and water logged area of the sand plains north of Girraween Road, plus an extension to the immediate south of the road (Figure 1).
- Option 2. Protected areas (two) defined by much of the remaining natural habitat in the western, upper catchment of the Howard River south of Gunn Point Road and extending to a southern boundary the same as for Option 1, and an area in the north east, south of Gunn Point Road, enclosing a Darwin palm population (Figure 2).
- Option 3. Protected areas (two) defined as (i) three areas of primary habitat for the threatened biodiversity in the west of the sand plains, with a 500 m buffer surrounding each area and linkage areas between the

three areas of primary habitat, and (ii) a second area in the north east, south of Gunn Point Road; to protect a population of the Darwin palm.

- Option 4. Protected areas (four) defined by the areas in Option 3, minus the linkages between areas in the west.
- Option 5. Protected areas (six) defined as for Option 3, other than use of a 250 m surrounding buffer rather than one of 500 m.

Options 3, 4 and 5 are viewed as likely to pose a continuing, high risk to the threatened biodiversity. The proposals would also pose significant management difficulties and would not provide satisfactory long term protection for the biodiversity of the SOC.

Option 1 is the lowest risk option. This is achieved by protecting extensive representation, and protection of the hydrology of the east-west and north-south variation in the seasonally inundated and waterlogged habitats of the sand plains. This option also provides a sound basis for future protected area management.

Option 2 lacks certainty compared to Option 1, but would provide a significant level of security for the threatened biodiversity.

Implementation of any of the options would have economic costs associated with the required transition in land uses. All options result in equal costs associated with reduction in levels of ground water abstraction. The preferred Option 1 would have higher costs associated with transition of mining from the area, particularly opportunity costs, and greater impact on pastoral land use.

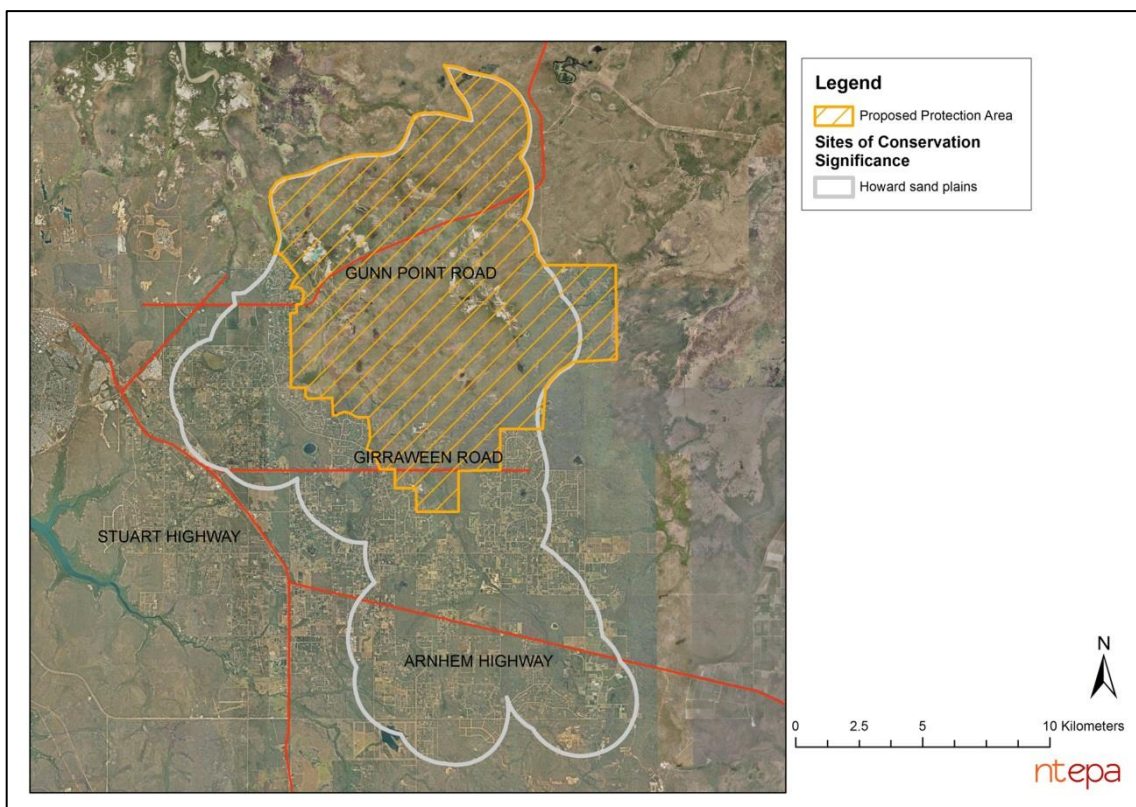


Figure 1: Option 1 for a protected area for the Howard sand plains biodiversity



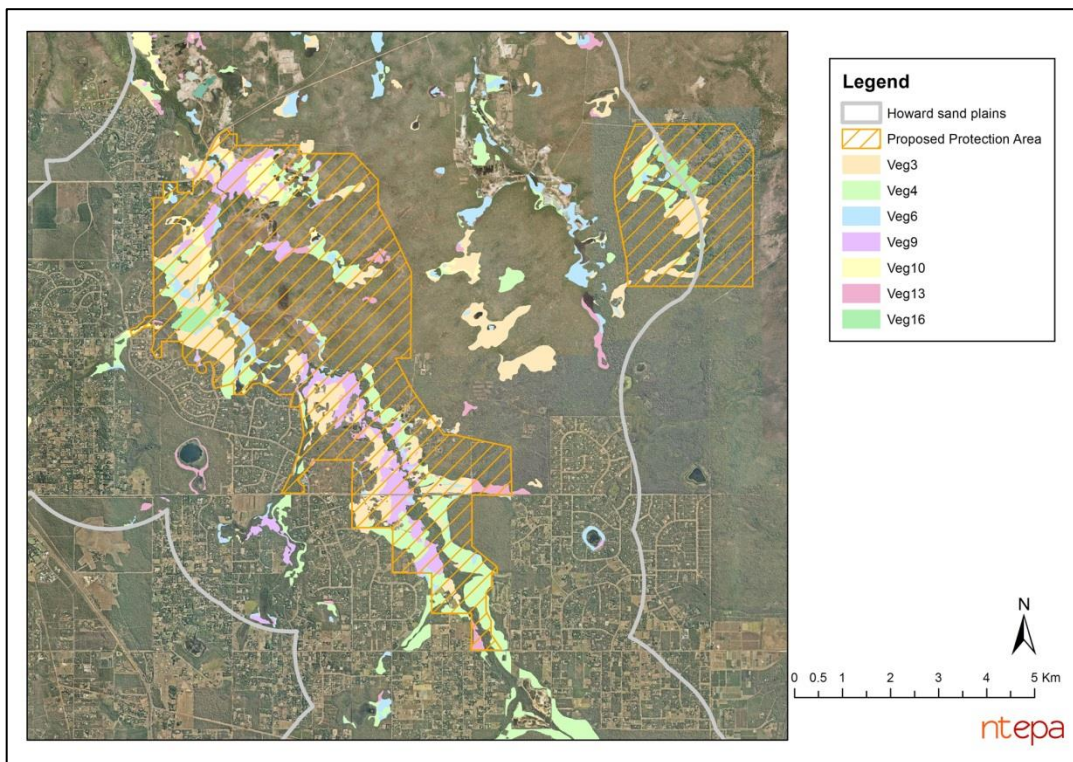


Figure 2: Option 2 for a protected area for the Howard Sand Plains biodiversity

## 2 Protection of threatened species in the Northern Territory

### 2.1 Territory Parks and Wildlife Conservation Act

The TPWC Act is an 'Act to make provision for and in relation to the establishment of Territory Parks and other Parks and Reserves and the study, protection, conservation and sustainable utilisation of wildlife'<sup>1</sup>.

The TPWC Act provides for the classification and listing of flora and fauna species (wildlife) threatened with extinction. The Northern Territory's first listing of threatened species in 2004 contained listings for *U. dunstaniae*, *T. taylori* and *P. macarthurii* (as *P. blesseri*). *U. daviesae* was added to a revised list in 2007. The list was reviewed again and a revised list finalised in 2013. The revised list continued listings for these sand plains' threatened species.

The TPWC Act establishes principles for the management of wildlife. Management of wildlife under section 31(1) of the TPWC Act is to be carried out

<sup>1</sup> Long Title, TPWC Act

in a manner that promotes biological diversity and, specific to the management of threatened species, in a manner that:

*maintains or increases their population and the extent of their distribution in the Territory at or to a sustainable level (which may include breeding in captivity)<sup>2</sup>.*

Tools provided in the TPWC Act that may enable the implementation of the required management principles include:

- establishment of a park or reserve (section 12)
- development of a Management Program (Division 2, Subdivision 3 of Part IV)
- co-operative management agreements (Division 2, subdivision 4 of Part IV)
- essential habitats (Division 2, Subdivision 5 of Part IV)
- a range of permits that regulate taking of (e.g. killing) or interference with wildlife.

Implementation of these mechanisms relies largely on the Northern Territory doing something in a particular situation or case.

These provisions are supported by people being able to apply for permits to:

- take or interfere with protected wildlife
- take or interfere with wildlife for commercial purposes (section 55).

Wildlife includes both plants and animals, and all listed threatened wildlife are protected. To interfere with wildlife is to:

- harm, disturb, alter the behaviour of or otherwise affect the capacity of the animal or plant to perform its natural processes or
- damage or destroy the habitat of the animal or plant<sup>3</sup>.

A person can be charged with an offence for taking or interfering with wildlife (section 66).

Unlike regulation in other state/territory jurisdictions, and the Commonwealth under the EPBC Act, there are no general provisions to avoid, minimise, mitigate or offset impacts on habitat or populations of threatened species. (These approaches to impacts are in priority order, with offsets the least desirable approach.) The TPWC Act does not include or provide for definitions of significant impacts according to the wildlife classification employed. These

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<sup>2</sup> Section 31(2)(b) TPWC Act

<sup>3</sup> Section 9(1) TPWC Act



deficiencies constrain the potential effectiveness of the TPWC Act in identifying, assessing and managing impacts on wildlife (i.e. taking including killing, and interfering), pose an uncertainty for development proposals, and constrain the achievement of the stated management principles for wildlife and threatened species.

## 2.2 Environmental Assessment Act

The objective of the *Environmental Assessment Act* (EA Act) is ‘to ensure, to the greatest extent practicable, that each matter affecting the environment, which is in the opinion of the NT EPA, a matter which could reasonably be considered to be capable of having a negative effect on the environment, is fully examined and taken into account’ in relation to development proposals and a range of other matters<sup>4</sup>.

The Environmental Assessment Administrative Procedures (the Procedures) under the EA Act require that following referral of a proposal (as a Notice of Intent, NOI), a decision be made as to the necessity of further assessment, and if so, what form that assessment might take. The NT EPA has prepared a number of guidelines<sup>5</sup> to assist proponents and decision makers identify when a project needs to be referred to the NT EPA. Projects with potentially significant impacts on threatened species are recommended to be referred for assessment.

Options for assessments are assessment using an Environmental Impact Statement (EIS), a Public Environmental Report (PER), or an inquiry under the *Inquiries Act*. A PER or an EIS is usually required if there is a potentially significant impact on threatened species. Failure to refer a project with potentially significant impacts on threatened species, or anything else, is not an offence, although the NT EPA may initiate proceedings to enforce compliance with the Procedures.

The NT EPA provides proponents with Terms of Reference for development of their PER or EIS. A draft EIS or PER as appropriate is submitted by the proponent for public consultation and comment. This leads to the proponent preparing a Supplement in response to comments received when assessment is conducted using an EIS, or the modified procedures for a PER. The NT EPA then prepares an assessment report including recommendations on whether a project should proceed, and if so how the project should be implemented.

Recommendations are forwarded, via the Minister for the Environment, to the Responsible Minister for consideration under approval legislation (e.g. the *Mining Management Act* or the *Planning Act* as appropriate), or may be considered by a decision maker at their discretion.

The EA Act and its Procedures do not include provisions to avoid, limit, mitigate or regulate impacts of development on habitat or populations of threatened species. Nor do these include or provide definitions of significant impacts of development proposals according to the wildlife classification (e.g. threatened)

<sup>4</sup> Section 4 EA Act

<sup>5</sup> See [www.ntepa.nt.gov.au/environmental-assessments/factsheets-and-guidelines](http://www.ntepa.nt.gov.au/environmental-assessments/factsheets-and-guidelines)

employed. The absences are paralleled by the absence of mechanisms for implementation of appropriate avoidance, minimisation, mitigation, or offset of significant impacts on the environment e.g. threatened species.

Assessment of impacts on threatened species is included in terms of references for EISs and recommendations on threatened species are made in assessment reports under the EA Act as appropriate. Both terms of reference and recommendations are made with advice from the agency responsible for the TPWC Act. This usually occurs in the absence of specific reference to regulatory sections of the TPWC Act. Recommendations on mitigation of impacts etc., are made to Responsible Ministers where appropriate. Implementation of these recommendations is achieved using conditions under approval legislation. This process usually occurs without reference to regulatory sections of the TPWC Act, or oversight of the agency responsible for the TPWC Act (i.e. the agency with the requisite skills and knowledge appropriate for determining the nature and management of the approval condition).

The absence of clear powers and procedures for the assessment and management of impacts on threatened species is compounded by the nature of assessment processes in the EA Act and Procedures. The EIS and PER processes are not well suited to assessment of impacts from a single small project with potentially significant environmental impacts, or the potentially significant cumulative impacts of a number of small projects in a specific area or region. While the EA Act and Procedures can be used to assess impacts caused by small, potentially low value projects, the capacity of such projects to meet the costs of an appropriate assessment may be limited. The existing processes are necessarily lengthy, and can impose significant and possibly inhibitory costs on a small project; especially when a single project is required to assess cumulative impacts from a number of such projects in a particular area.

### **2.3 Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)**

The EPBC Act provides for the listing of threatened species and strict provision of environmental assessment procedures for Matters of National Environmental Significance (MNES) (which includes threatened species) across Australia. In many cases a species listed as threatened under the EPBC Act is also listed under the TPWC Act.

The Commonwealth and Northern Territory governments entered into a bilateral agreement under section 45 of the EPBC Act in relation to environmental assessment on 11 December 2014. The agreement accredits the Territory's EA Act impact assessment process for assessment of impacts on MNES (e.g. Commonwealth listed threatened species) in the Northern Territory, excluding activities undertaken in a Commonwealth area, an action taken by the Commonwealth or a Commonwealth agency, or an action in Kakadu National Park or Uluru Kata-Tjuta National Park.

The agreement requires the Northern Territory to cooperate with the Commonwealth on matters associated with assessments involving MNES. For practical reasons this may include notifying proponents and the Commonwealth of projects that may need to be referred to the EPBC Act because of their potential to have a significant impact on MNES. Prior to the bilateral agreement

the NT EPA did not provide such notification to the Commonwealth; only informing project proponents that it would be appropriate for them to refer a project to the Commonwealth. This was done when notifying proponents of a requirement for a PER or an EIS under the EA Act.

The NT EPA will consider notifying the Commonwealth of projects that may have significant impacts on MNES (e.g. threatened species) where appropriate and the proponent has not done so. Development and instigation of an approvals bilateral agreement with the Commonwealth (as currently being discussed between the Northern Territory and Australian governments) would inevitably bring closer Commonwealth scrutiny of the nature, implementation and outcomes of environmental approvals concerning threatened species.

## 2.4 Mineral Titles Act and Mining Management Act

The *Mineral Titles Act* (MT Act) is ‘about exploration for, and extraction and processing of, minerals and extractive minerals in the Territory, and for related purposes’<sup>6</sup>.

The *Mining Management Act* (MMA) provides ‘for the authorisation of mining activities, the management of mining sites, the protection of the environment on mining sites, the provision of economic and social benefits to communities affected by mining activities, and for related purposes’.

The mining of extractives is governed by the MT Act and the MMA. The MT Act provides for a range of licences, permits and leases to be issued in relation to a range of mining activities involving extractive minerals.

Extractive mineral exploration activities require an exploration mineral title, the Extractive Mineral Exploration Licence (EMEL), issued under the MT Act. EMELs are granted for up to two years and do not contain a guarantee that subsequent applications for a productive mineral title, either an Extractive Mineral Permit (EMP) or an Extractive Mineral Lease (EML), will be approved.

All mining activities require approval from the Minister, and approval may be subject to conditions. Conditions may relate to protection of the environment and outcomes of environmental impact assessments under the EA Act. Under section 37(3)(e) of the MMA the Minister may require provision of an environmental mining management report. The report would relate to “the commitments given by and obligations imposed on the operator in relation to the EIA Act and the obligations under the management system of the mining site”. Factors determining when such reports are required are not clear, and the requirement may not apply to mining of extractive minerals. DME is currently discussing this reporting requirement with industry with a view to developing guidelines and policy around its application. It is unclear when those guidelines and policy will be finalised.

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<sup>6</sup> Long Title, MT Act

An authorisation to conduct mining activities on a mining site is subject to the condition that the operator complies with an approved mining management plan (MMP) for the site. MMPs are focused on the management of the mining site during its various phases. Section 40(2) of the MMA requires the MMP to contain details of a management system, i.e. an environmental protection management system. The MMA provides high level guidance as to the content of the management system, as well as providing for the Minister to require 'other details or plans'. MMPs are generally for a period of two years (although usually for four years for larger mines), at which time they must be renewed if mining is to continue.

The mining legislation provides for immediate or short term cessation of production titles or approved MMPs where a proponent fails to abide by approval conditions, fails to meet payment requirements, does not undertake mining activities for over two years or offends in a number of other ways. A mining officer may also close a mine for the purpose of environment protection (section 62(1)(g) of the MMA). The provision does not provide contexts within which this might occur. The Minister has the power to revoke a mining authorisation (section 38 of the MMA).

The MT Act contains provisions (Part 6) that allow for the reservation of areas from mining. Imposition of 'general reserved land' can only be implemented if there are no mining titles over that land. A 'reservation on cessation' of a mineral title can be imposed such that the reservation comes into effect following cessation of a mineral title.

Reservations from mining, while essential to protection of the sand plains' biodiversity in the longer term, do not provide a mechanism for timely imposition of protection for the sand plain biodiversity. Much of the sand plains is subject to mining titles precluding application of a general reservation, and reservations on cessation would provide limited immediate benefit for biodiversity given the longevity of the titles.

Recommendations on threatened species in an environmental assessment report under the EA Act would, when accepted by the Responsible Minister, form the basis of conditions of approval. The MMP would implement any required avoidance, minimisation, mitigation or offsetting requirements, along with necessary monitoring and reporting to the Department of Mines and Energy, or the Commonwealth where MNES are involved under a separate Commonwealth (EPBC Act) approval.

Compliance and enforcement of endorsed recommendations concerning threatened species would be conducted under the provisions of the MMA, which has no specific provisions for management or compliance regarding threatened species. Part 3 of the MMA provides for adoption of EA Act recommendations approved by the Minister, a general environmental duty for persons on mining sites, requirements in relation to an environmental protection management system, compliance with the management system, reporting of incidents, and a range of offences that could be applied to matters associated with threatened species. Application of these provisions in relation to threatened biodiversity is at the discretion of the Responsible Minister, and would occur in the absence of reference to the agency with the requisite skills and knowledge of the species' ecologies, and responsibilities under the TPWC Act.

An authorisation under the MMA including conditions relating to the management of threatened wildlife on a mine site might form a basis for finding that an offence against such wildlife has not been committed under the TPWC Act. That is because section 23 of the Criminal Code provides that a person is not guilty of an offence if the act, omission or event constituting that event was authorised. Much would depend on the facts of a particular mining activity and the alleged offence as to whether this issue would arise.

## 2.5 Planning Act

The *Planning Act* is ‘to provide for appropriate and orderly planning and control of the use and development of land, and for related purposes.

The 2015 Darwin Regional Land Use Plan recognises the international, national and Northern Territory significance of the SOC. It provides environmental and heritage objectives that ensure future detailed planning and assessment of development in the area occurs in the context of appropriate identification and protection of its biodiversity values.

Under the *Planning Act* (section 51) a consent authority for development must consider a number of matters when evaluating a development application. These include an environment protection objective as defined in section 4(1) of the *Waste Management and Pollution Control Act* that is relevant to the land, any report or statement and the results of any assessment of the report or statement under the EA Act, and any ‘potential impact on natural, social, cultural or heritage values; including, for example, the heritage significance of a heritage place or object under the *Heritage Act*<sup>7</sup>.

Subject to the consent authority’s discretion, these broad requirements may require consideration of potential impacts on, and management of threatened species through conditions of approval. As with the MMA, the *Planning Act* has no specific provisions for management or compliance regarding threatened species, with decisions and management occurring without oversight under the TPWC Act or the agency responsible for it.

An authorisation under the *Planning Act* including conditions relating to the management of threatened wildlife on a development site might form a basis for finding that an offence against such wildlife has not been committed under the TPWC Act. That is because section 23 of the Criminal Code provides that a person is not guilty of an offence if the act, omission or event constituting that event was authorised. Much would depend on the facts of a particular development activity and the alleged offence as to whether this issue would arise.

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<sup>7</sup> Section 51(r) *Planning Act*



### 3 Application of the regulatory framework for protecting threatened species

The NT EPA and its predecessors have consistently assessed impacts on threatened wildlife as part of the environmental assessment process under the EA Act. Implementation of measures to mitigate impacts has occurred under project approval legislation. This has historically occurred in the absence of clear guidance on:

- procedures and processes that cater for determining level of impact on threatened species
- procedures that provide for implementation of the avoid, minimise, mitigate and offset hierarchy for managing impacts on threatened species as established under the International Finance Corporation's *Sustainability Framework Performance Standards 1 to 8*. (World Bank Group 2012 and earlier versions) and included in the Northern Territory's bilateral agreement with the Commonwealth on assessments
- a practical, transparent mechanism for ensuring that an avoid, minimise, mitigate or offset process has been implemented and reported.

These absences may have left proponents with uncertainty about when a referral may have been required in relation to threatened species, what was required for assessment of impacts on threatened species, and requirements for implementing project approvals under legislation that lacked specific provision for managing impacts on threatened species. This uncertainty is compounded by failure to recognise and use the available compliance and enforcement process under the TPWC Act, i.e. permits to take or interfere with wildlife.

Uncertainties as to when referrals need to be made and how to assess impacts on threatened species have been largely rectified by the NT EPA's recent adoption of guidelines on when a Notice of Intent (NOI) is not required, content of an NOI, content of Environmental Management Plans and assessment of biodiversity impacts. Uncertainties in ensuring NOIs are submitted for projects with potentially significant impacts, and uncertainties about implementation of management and reporting of impacts on threatened species, remain.

The result of these uncertainties, and possibly inadequacies not related to the assessment and approval process, has been that there are likely to be:

- cases where potentially significant impacts on Northern Territory listed threatened species were not referred for assessment
- cases where potentially significant impacts on listed Commonwealth species were not referred to the Commonwealth for consideration in accordance with the EPBC Act
- cases where offences under the TPWC Act have been committed on project sites and not been reported or subject to investigation
- cases where environmental assessment recommendations on threatened species management have not been implemented and/or enforced, and

- no readily available, compiled data on the impacts of development on individual threatened species or threatened species in general (in many cases there may be few data, no available data or no data at all).

The causes and outcomes of uncertainty and other non-compliance parameters have contributed to the failure of environmental assessment and management in the Howard sand plains.

## 4 Regulation of threatening processes in the Howard sand plains

The threatening processes leading to the current situation in the Howard sand plains are normal urban development, abstraction of ground water and long standing mining of extractive minerals.

### 4.1 Urban and rural development assessment and approvals

Planning for urban and rural development in the area is and has been included in past and current Darwin Regional Land Use Plans. Approvals for development were made under the *Planning Act*. Consideration of environmental issues has been a requirement under the *Planning Act* since 1999. Provisions have been expanded over time and include recognition of assessments under the EA Act. No urban development in the areas surrounding the Howard sand plains has been subject to environmental impact assessment under the EA Act.

### 4.2 Abstraction of ground water

Abstraction of water from over 3 000 domestic bores in the SOC and adjacent areas is managed under the *Water Act*, as is the Power and Water Corporation's (PWC) abstraction to meet the needs of the Darwin-Palmerston region. Abstraction from domestic bores are not licenced. The PWC is licenced to abstract water at current and projected levels of abstraction. Levels of draw-down of the aquifer are significant during the Dry season, as are impacts to surface water flows. The PWC Howard East Borefield Stage 1 project was referred for assessment under the EA Act in 2000. It did not require a PER or EIS. Stage 2 was referred in 2006. It was determined that it did not require assessment at the level of a PER or an EIS, although a construction environmental management plan was requested and endorsed. A revised plan was endorsed in 2007.

The Department of Land Resource Management (DLRM) is developing a Howard East Water Allocation Plan under the *Water Act*. Allocation plans are designed to provide for sustainable water use. An allocation plan is the only way to regulate the implementation of phased processes to reduce abstraction, and allow for recovery of Dry season water tables, flows of the Howard River and flows to the wetlands of the sand plains.

### 4.3 Assessment and approvals for extractives mining

Mining of extractive minerals in the area is the major immediate threat to the threatened biodiversity of the sand plains. Records prior to 2005 are sketchy but indicate that at least six extractives proposals in the vicinity of the Howard River were submitted to the agency responsible for the EA Act during 2000. No additional such project was submitted for assessment until 2010.

The previous Department of Natural Resources, Environment, the Arts and Sport, and the previous Department of Primary Industry, Fisheries and Mines entered into a Memorandum of Understanding (MoU) that specifically excluded all mining operations producing less than 200 000 tpa of ore, or 1 000 000 tpa of ore and waste, from environmental assessment under the EA Act. The MoU required referral of projects 'where Commonwealth involvement is anticipated (e.g. uranium) or Commonwealth assessment is required'. It also required referral when a project was within 1 km of a major river or coastline, within 2 km of a gazetted town boundary, in areas of known environmental significance, or projects where ground or surface water may be placed at significant risk. The MoU was signed in 2007.

The 2007 MoU coincided with the Commonwealth's listing of *T. taylori* as an endangered species, and the Territory's listing of *U. dunstaniae*, *T. taylori*, *P. macarthurii* and the Howard toadlet (*Uperoleia daviesae*) as threatened under the TPWC Act.

Two extractive mineral projects were submitted for assessment following the 2007 signing of the MoU; one in 2010 and one in 2012. Both had production levels above those specified in the MoU. Neither was assessed at the level of a PER or an EIS. Both resulted in advice to DME that additional information was required on species of significance in the area. Neither of these projects is located in the Howard sand plains.

The first known submission of an extractive mineral project in the Howard sand plains for assessment under the EA Act occurred in 2013. There is a large number of extractive mineral projects in the sand plains (Figure 9 of the Report), and a large number of continuing two yearly renewals of MMPs. The known significance of the sand plains' threatened biodiversity, the high probability of impacts on Commonwealth and Northern Territory listed threatened species, the close proximity to the Howard River and potential for significant impacts on hydrology suggest that under the terms of the MoU, all or most past projects and MMP renewals should have been submitted for assessment.

No proponent has referred a Howard sand plains' proposal to the Commonwealth despite mining tenements including, and MMPs apparently managing, populations of *T. taylori*. Referral of such projects to the Commonwealth is mandatory irrespective of any MoU between Northern Territory Government agencies.

Failure to assess environmental impacts from mining of extractive minerals may have been influenced by the gradual expansion of an industry originally based on small family concerns working on individually small areas that may not have had a significant environmental impact. The industry has grown significantly and includes more and larger participants, with greater potential for cumulative impacts. Neglect of the threatened species should not have continued for so long.

In late 2012 the then Environment Division of the Department of Lands, Planning and the Environment verbally informed DME that it would no longer continue with the MoU. This was formally confirmed by the Northern Territory Environment Protection Authority (NT EPA) at its first meeting in early 2013.

#### 4.4 NT EPA's response to the failure to assess impacts

The NT EPA has requested that DME provide it with copies of new proposals for extractives mining on the sand plains, and proposals for renewal of MMPs to enable determinations to be made as to whether an NOI was required under the EA Act.

Proponents were informed by the NT EPA that an NOI was required when proposals in the Howard sand plains were enclosed by or intruded onto the core habitats of threatened species, or 500 m buffer zone areas around the primary habitats (as identified in option 2 (Figure 12) of the Report). These proponents were given the option to resubmit an alternative proposal that excluded the intrusion into the core habitats or buffer zones. These latter proposals were viewed as not requiring a NOI.

To date one proponent has removed areas within the 500 m buffer from their proposal. An NOI was not required for that project.

Eight projects have been assessed as requiring an NOI. No NOI has been received.

Any mining proposal in the sand plains has the potential for significant impacts on the sand plains' threatened species, and cumulative impacts of many extractive projects are critically important. All mining proposals in the area will, in future, be required to provide an NOI should there be potential for significant impacts on biodiversity.

The NT EPA has notified the Commonwealth of the potential for extractives projects in the sand plains to trigger assessment under the EPBC Act because of the potential for impacts on MNES. The NT EPA will notify the Commonwealth if it becomes aware of proposals with potential to impact on MNES (i.e. projects with the potential to be controlled actions under the EPBC Act) should the proponent fail to provide notification.

Proponents undertaking an EIS would need to identify and assess potential impacts on threatened biodiversity, and propose effective methods to avoid, minimise, mitigate or offset potential impacts on vegetation, hydrology and biodiversity. This would include consideration of:

- the internationally significant community of bladderworts (*Utricularia*)
- threatened fauna and flora in the mineral title area
- the surface and ground water hydrology of the title area, including existing cumulative impacts of abstraction and mining, locally and across the sand plains
- land clearing and infrastructure required for the project (e.g. roads, track, drains, stockpiles etc.)
- the impacts of the proposal on cumulative impacts of mining and water abstraction on surface and ground water hydrology in the general area of the proposal, and the sand plains

- the impacts and cumulative impacts of hydrological changes on the threatened biodiversity
- the impacts and cumulative impacts of land clearing from mining on the threatened biodiversity
- the cumulative impacts of all these factors across the Howard sand plains as it impacts on the threatened biodiversity.

### 4.5 An approach to protect the sand plains' biodiversity

Actions taken to date by the NT EPA, in keeping with its powers, have focused on providing for the assessment and mitigation of impacts on the threatened biodiversity of the Howard sand plains through application of the EA Act and its Procedures. On their own these actions are insufficient to providing the required level of protection for the threatened biodiversity.

Imposing expensive, formal EISs on single, small, low value mining operations is not an efficient or effective way of protecting the threatened biodiversity. Impacts cannot be rehabilitated to a level likely to allow for persistence of the biodiversity, and are cumulative across all mining operations in the sand plains. Multiple single EISs over small areas would provide at best a future of protracted uncertainty for the biodiversity and the extractive industry, with little prospect of providing effective protection of the biodiversity or facilitating effective and efficient provision of extractive minerals for development in the greater Darwin region.

The only appropriate action is one that provides relatively immediate implementation of a low risk protected area in the sand plains, and coordinated steps to facilitate a transition in land use on the sand plains. The transition would necessarily involve removal of the extractive mining industry from designated areas of the sand plains, and planned reduction in hydrological impacts from abstraction.

Implementation of the transition involves a complex of issues related to land tenure, land uses and associated legislation. For example the pattern of land tenure across the SOC (Figure 3) presents challenges to implementation of the protection area. Some aspects of a number of pieces of legislation would be applicable to the entire protection area (e.g. establishment of reservations from mining under the MT Act), while other legislation may only be able to provide for future management over parts of the protection area. A protected area will necessarily involve mechanisms provided under the:

- MT Act and the MMA – to manage the mineral titles, MMPs and provision of future extractives resources
- TPWC Act – the Parks and Wildlife Commission of the Northern Territory is the only government body with the requisite skill in protected area management
- *Water Act* – allocation planning is the only way to provide an appropriate basis for reduction in abstraction from the sand plain
- *Planning Act* – to minimise future potential stormwater impacts on the sand plains.



The transition cannot occur without provision of certainty of resources for the extractive industry, and implementation/development of practical means to ensure adequate environmental impact assessment and implementation of sound environmental management for the extractive industry in general. This will require altered approaches to environmental impact assessment, and the management of threatened species in the Northern Territory.

## 5 Recommendations

The following recommendations relate to provision of protection for the sand plains' biodiversity and its ongoing management, reduction of threatening processes on the sand plains including appropriate, ongoing environmental impact assessment of the extractive mineral industry and legislative changes to aid in the protection of the Territory's threatened biodiversity.

### 5.1 A protected area for the threatened sand plains' biodiversity

It is recommended that the Northern Territory Government:

1. Endorse implementation of a protected area in the Howard sand plains SOC to provide security for the area's internationally important species rich bladderwort community, and the nationally and Northern Territory listed threatened species.
2. Endorse either of the following options for a protected area:
  - a. the lowest risk option, Option 1, which does not include lands developed for rural or urban residential or farming purposes, with the entire protected area declared as 'general reserved lands'/'reservations on cessation' under the MTA as appropriate (Report, Figure 12) or
  - b. the second lowest risk option, Option 2, a managed protected area not including lands developed for rural or urban residential or farming purposes, with the protected area declared as 'general reserved lands'/'reservations on cessation' under the MTA (Report, Figure 13). The boundaries of this area may require adjustment according to risk averse application of available hydrological understanding, and a review of patterns of land tenure.
3. Endorse the selected protected area being declared and managed as a protected area under section 12 of the TPWC Act. Section 12 areas are the most certain way to provide for protection and ongoing management of the biodiversity, including the species at risk.
4. Declare the selected protected areas as 'general reserved lands'/'reservations on cessation' under the MTA as quickly as practicable.

### 5.2 Reduction of threatening processes: abstraction of water

It is recommended that the Northern Territory Government:

5. Progress as rapidly as practicable the water allocation planning for the Howard East area, and implement its sustainability outcomes as soon as possible.

6. Endorse the Department of Mines and Energy locating and establishing alternative sources of fine and coarse sands to replace those of the Howard sand plains.
7. Endorse a preferably collaborative (e.g. the Extractive Industry Association coordinating members providing developer contributions) undertaking of formal environmental impact assessment of the new extractives area under the EA Act, with subsequent consideration of mining titles, approvals and Mining Management Plans including actions implementing recommendations from the assessment process.

### **5.3 Reduction of threatening processes: environmental impact assessment**

It is recommended that the Northern Territory Government:

8. Consider inclusion of strategic assessment of environmental impacts in the EA Act to better cater for impact assessment of numerous projects (large and small) in a single area or region, particularly numerous small projects unlikely to have the resources to complete an EIS on their own.
9. Consider use of referrals (Notices of Intent) under the EA Act as a basis for subsequent environmental approvals for small, single, spatially dispersed projects with readily mitigated environmental impacts, or within areas previously subject to strategic environmental assessment of those particular actions.
10. Note that all future extractive mining proposals will be subject to the EA Act, i.e. a NOI will be required in cases where there is potential for significant impact to the environment.
11. Amend the EA Act to include proponent responsibility for submission of NOIs, and for it to be an offence to not submit a NOI when there is a potentially significant impact on the environment.

### **5.4 Reducing the likelihood of failure to manage threatened species**

It is recommended that the Northern Territory Government:

12. Note that NT EPA assessment reports under the EA Act will recommend approval conditions requiring use of permits to take (including to kill) or interfere with wildlife under section 55 of the TPWC Act as a basis for management of impacts on biodiversity during development projects. This seems the most effective and efficient way of applying the necessary knowledge and skills to regulation of developmental impacts on biodiversity, and to avoid potential enforcement difficulties under section 23 of the Criminal Code.
13. Consider amendment of the TPWC Act to include capacity to require proponents to prepare and have approved publicly available Biodiversity Management Plans as a condition of permits to interfere with wildlife as required by an environmental approval following assessment under the EA Act.

- 14. Consider making all reporting under the proposed Biodiversity Management Plans available to the public.
- 15. Require that all data on threatened species, including those associated with development approvals and actions, be recorded in a single data base to allow the Territory to monitor the extent of cumulative impacts of development on biodiversity across the Northern Territory.

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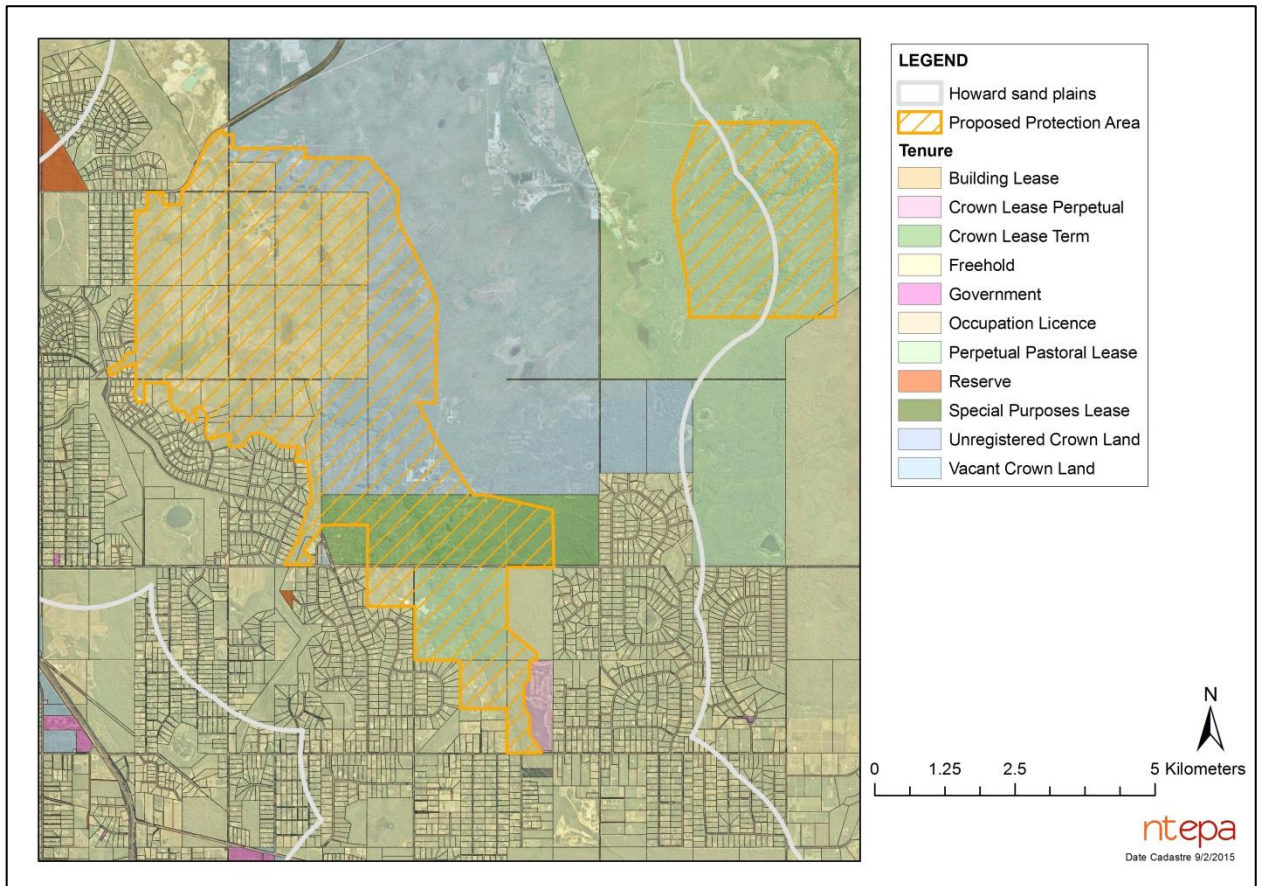


Figure 3: Pattern of land tenure across the SOC