

**Submission Form for Comments and Feedback**

***Environmental Quality Report: Biodiversity of the Howard Sand Plains SOC; and Recommendations***

*Submissions close: Monday 25 May 2015, 5pm*

<b>Name:</b>		<b>Email:</b>	
<b>Organisation:</b>	<b>Greening Australia</b>	<b>Telephone:</b>	

<b>ENVIRONMENTAL QUALITY REPORT Section / Page</b>	<b>COMMENT</b>
2.3.5	<p>Rehabilitation of the Sand sheet has been a focus of a collaborative project facilitated through Greening Australia and outlined below in "General Comments." The project aimed to find 3 sand sheet study sites to compare rehabilitation techniques post sand mining operations. Various difficulties arose in finding enough study sites, including sand not being mined due to a change in demand, product not being moved from a site to allow room for study plots, sites being inaccessible and some operators not wanting to engage with studies. Some operators were however very helpful and acknowledged the importance of such studies. A gravel site and a sand site were secured due to the lack of appropriate sand sites and the time limits of the study funding.</p> <p>At a recently mined sand site at Scrubby Creek plots have been set up on the gradual slope of an area where topsoil had immediately been returned. 3 x 4 plots compared the differences between adding tube stock (with appropriate provenance) adding seed (with appropriate provenance), and directly returning topsoil from an area designated to be mined, but still with intact vegetation (e.g. as you might if you were progressively extracting an area) and then a control where nothing was added. To have a clear indication of the original Sandsheet species composition 6 analogue plots at 2 intact sand sheet sites of the same specific sand sheet land unit type are additionally being monitored using the same techniques of floristic sampling. Data is still being collected but initial findings indicate that the presence of original sand sheet species decline significantly and other plant species from differing landscape types are found to establish. Planted tube stock has a good survival rate and a similar presence of those woody shrubs and <i>Dapsalanthus</i> is not found in other plots.</p>

**Please complete the form and send it via one of the following by no later than *Monday 25 May 2015, 5pm*:**

**Email:** [NTEPA.Consult@nt.gov.au](mailto:NTEPA.Consult@nt.gov.au)

**Post:** NT EPA, GPO Box 3675, Darwin NT, 0801

**Privacy:** Your personal information will be used for the purpose of collecting and collating comments received on the NT EPA draft guidelines. The NT EPA is subject to the *Information Act* and its Regulations. Information will not be disclosed to a third party, unless required by law or otherwise stated.

<p><b>ENVIRONMENTAL QUALITY REPORT</b></p> <p><b>Section / Page</b></p>	<p><b>COMMENT</b></p>
	<p>The Scrubby Creek study site was unfortunately disturbed (half of the plots were graded to stockpile sand) by an operator subcontracted by the tenement holder, who was not the original operator and contact person for the project. This highlighted some communication difficulties and indifferences between operators and the ability to protect rehabilitation sites in areas of a patchwork of many tenements (which is the tendency of sand mining in the area). The study site was rectified to have adequate repetition by adding in further plots (Topsoil and no other treatments) for subsequent years, but these plots are not directly comparable to those measured in year one.</p> <p>It seems from initial data and studies of previously mined areas the rehabilitation of an area of sand sheet to a landscape similar in species composition to that of pre mining is <b>not possible</b> as hydrology and substrate is drastically altered and many of the plant species in particular <i>Utricularias</i>, including the vulnerable <i>Utricularia dunstaniae</i> require a very specific depth of shallow pooling water.</p> <p>The nature of recent sand mining techniques is to dig out sand from a site of a depth up to 2 meters, topsoil may then be spread across the area. Once large amounts of sand substrate are missing from the landscape that had a seasonally inundated sand area. This results in areas of much deeper water forming across the landscape. This is the case at the current study site over much of the area, however the study has been implemented in plots in the shallowest and sloping edge for optimum chance of original species composition. If considering the mined area overall it is very unlikely that original species composition would occur.</p> <p>Guidelines are currently being developed based on initial data and observations from this project to recommend how post mining rehabilitation can be carried out to achieve the optimum species composition nearest to the original landscape, however it should be noted that the original ecology and species composition is likely to never be fully restored.</p> <p>There is huge potential to study further rehabilitation techniques and include maximizing the surface area of shallow water within a site, the age of topsoil used to rehabilitate an area, leaving volumes of sand within the landscape and different earthwork techniques to avoid ponding.</p>
<p>3.1.1</p>	<p>The report highlights the vulnerability of the bladderwort species and their ecology, this is reflected in the studies outlined above.</p>
<p>5</p>	<p>The lowest risk and preferred option for protection would be option one, to establish a protected area over the entire seasonally inundated area of the sand plain, however there is still a demand for fine sand and this option may be unrealistic as sand is widely used commodity. Further research into other sources of similar quality sand and their ecological sensitivity are needed. It is agreed that a maximum amount of sand sheet in the highlighted areas should be protected, along with adjacent landscapes (or buffers) but alternative sand sources need to be researched as well as more sustainable alternatives to the use of the sand in</p>

NORTHERN TERRITORY ENVIRONMENT PROTECTION AUTHORITY

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	<p>construction materials, landscaping and engineering projects. There may be an interim period whereby some sand sheet areas within the SOCS will need to be mined.</p> <p>Sandsheet areas within the SOCS areas need to be surveyed more thoroughly as well as those that do not fall in this area. Areas of conservation are recommended, further definitions of how these would be conserved should include which legislation they would sit under and which agency would be responsible for actively managing them.</p>
1- 4	<p>The summary of 2) The Howard Sand Plains environment and 4) Conservation of the Howard Sand Plains seems complete and to cover all relevant aspects.</p> <p>Section 3) Threats to biodiversity, does not thoroughly cover the risk of weeds, including the 'environmental weed' <i>Humidicola</i>. The threat of disturbance by recreational users, including quad bikers and 4x4 vehicles and non prescribed burning should also be included, these threats will only increase with population growth.</p>

GENERAL COMMENTS (delete if not applicable)
<p>Greening Australia has been the facilitating organisation in a recent 4 year project based on the Sand Sheet Landscape and funded through the Biodiversity Fund programme. The project has been a collaboration with Extractive Industries Association, Charles Darwin University, The Department of Land Resource Management, with a steering committee also including Power Water Corporation, Territory NRM, Department of Mines and Energy and Conservation Volunteers.</p> <p>Greening Australia as an organisation represents 150 NT members and 850 Nationally. The National Board of Greening Australia has visited the Sand Sheet Area.</p> <p>The Howard Sand Sheet was identified in the recent Conservation Action Planning (CAP) process for the Darwin Region as a key asset under threat. The CAP workshop was facilitated by Greening Australia through the Land for Wildlife Program, funded by Parks and Wildlife. This process included representatives from the community, with members from the following organisations developing collaborative agreements on assets of the region, their condition and suggested actions for conservation; (Power Water Corp, Dept Defence, local council (Darwin, Palmerston and Litchfield), TNRM, Regional Development Australia NT, Parks &amp; Wildlife, Dept Lands, Planning &amp; the Environment, Friends of and Landcare groups, Environment Centre NT, DLRM - Flora &amp; Fauna, and weeds, Greening Australia, Koolpinyah Station, Larrakia Nation, Dept of Mines, Aust Institute of Landscape Architects, Local Residents and Land for Wildlife Members</p> <p>Several people with expert knowledge of the sand sheets, its ecology, species and the highlighted areas of conservation significance were involved in the process. The sand sheets threats were analysed and included mining as the highest threat, with the landscape overall coming out with a high threat status. Its current condition taking into account landscape context, condition and size rated as fair, but rapidly descending in condition. Suggested targets for the landscape, arising from the CAP process included more than 30% of Sandsheet Heath being exempt from mining and development, conservation covenants on</p>

**GENERAL COMMENTS (delete if not applicable)**

new subdivisions that include Sandsheet Heath, voluntary stewardship programs for Sandsheet currently on freehold land and planning legislation to prevent fragmentation of Sandsheet landscapes.

As stated within the report there will be an economic cost to conserving areas of Sandsheet, this is an important cost that takes into account ecological values. The current cost of Sand sheet sand is relatively low (\$20 per cubic meter delivered) and it is regarded as an inexpensive and inert resource. If costs were to be increased demand for the product would be likely to be reduced and alternatives for a source of sand or the use of other building materials would be found. Increased public awareness of the current sand sources should accompany this market shift.