



Australian Government

Department of Sustainability, Environment, Water, Population and Communities

Assessment of the
Northern Territory
Trepang Fishery

JULY 2011

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This document is an assessment carried out by the Department of Sustainability, Environment, Water, Population and Communities of a commercial fishery against the Australian Government *Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition*. It forms part of the advice provided to the Minister for Sustainability, Environment, Water, Population and Communities on the fishery in relation to decisions under Part 13A of the *Environment Protection and Biodiversity Conservation Act 1999*. The views expressed do not necessarily reflect those of the Minister for Sustainability, Environment, Water, Population and Communities or the Australian Government.

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Table 1: Summary of the Northern Territory Trepang Fishery

Publicly available information relevant to the fishery	<ul style="list-style-type: none"> • Northern Territory <i>Fisheries Act</i> • Northern Territory <i>Fisheries Regulations</i> • Progress in implementing the Department of Sustainability, Environment, Water, Population and Communities recommendations made in the 2007 assessment of the NT Trepang Fishery, April 2011 • Fishery Status Report 2009, Northern Territory Trepang Fishery • Fishery Status Report 2008, Northern Territory Trepang Fishery • Department of the Environment, Water, Heritage and the Arts – Assessment of the Northern Territory Trepang Fishery – December 2007 • Department of the Environment and Heritage – Assessment of the Northern Territory Trepang Fishery – December 2004
Area	The Northern Territory Trepang Fishery operates in all Northern Territory waters (i.e. to three nautical miles seaward of the Northern Territory coastline and surrounding islands).
Fishery status	A preliminary stock assessment of Northern Territory sandfish stocks undertaken in 2009 was inconclusive due to insufficient data.
Target Species	<p>The target species is the sandfish (<i>Holothuria scabra</i>).</p> <p>Licensees in the fishery are permitted to harvest all sea cucumber species. The Northern Territory Department of Resources advises that the fishery continues to target sandfish in preference to other lower valued species found in tropical waters.</p> <p>Sea cucumbers are found on coral reefs and adjacent shoals, seagrass beds and sandy and silty benthos in shallow tropical seas. The habitat of sea cucumber species ranges from intertidal and inshore mudflats to inshore reefs and deepwater areas. Sandfish is one of the few tropical sea cucumber species that prefer coastal areas to coral reefs.</p> <p>Sea cucumber species generally are considered particularly vulnerable to over exploitation due to limited dispersal, patchy distribution, ease of collection, slow recovery from over fishing and the limited available information on biological and spatial distribution.</p> <p>Further information on the biology of these species can be found in the 2004 assessment of the fishery located on the department's website at: http://www.environment.gov.au/coasts/fisheries/nt/trepang/index.html</p>
Byproduct, Bycatch and Interactions with Protected Species¹	<p>There is no byproduct in the Northern Territory Trepang Fishery as operators are permitted to target all species of sea cucumber under quota arrangements.</p> <p>The Northern Territory Trepang Fishery collects sea cucumber species using hand collection, therefore there is no bycatch. Interaction with protected species is likely to be minimal due to the highly selective hand harvest of the target species. No interactions have been reported to date.</p>

¹ 'Protected species' means all species listed under Part 13 of the EPBC Act, including whales and other cetaceans and threatened, marine and migratory species.

Take by other sectors	<p>The sole licence holder in the Northern Territory Trepang Fishery has obtained a research permit to utilise a stalled-plate dredge to perform stock assessments. The operator has also set up an aquaculture program for trepang, which requires collection of broodstock.</p> <p>The fishery is one of five commercial fisheries harvesting holothurians (sea cucumbers) in northern Australian waters, the others being the Coral Sea Fishery, Torres Strait Bêche-de-mer Fishery, Queensland East Coast Bêche-de-mer Fishery and the Western Australian Bêche-de-mer Fishery.² Sandfish is also a key target species in the Western Australian Bêche-de-mer Fishery.</p> <p>Recreational and Indigenous harvest levels of sea cucumbers are considered negligible.</p>
Gear	Sea cucumbers are harvested by hand collection, by walking at low tides and diving in shallow coastal bays and foreshores. Snorkel, Self Contained Underwater Breathing Apparatus (SCUBA) and hookah gear may be used when diving.
Season	Fishers are permitted to fish all year. Collection is generally limited to neap tides and the dry season when water visibility improves and cyclone activity is minimal.
Commercial harvest 2008-2009	<p>2008 – 12.6 tonnes overall catch.</p> <p>2009 – 52.3 tonnes overall catch.</p> <p>Recent catches are considerably lower than the average of the past 10 years (229 tonnes). The Northern Territory Department of Resources has explained that these low catches are due to the operator concentrating on the Western Australia Bêche-de-me Fishery.</p>
Commercial licences issued	Six licences owned by one licensee.
Management arrangements	<p>The fishery is managed by the Northern Territory Department of Resources under the Northern Territory <i>Fisheries Act</i> and the Northern Territory <i>Fisheries Regulations</i>. Management measures include:</p> <ul style="list-style-type: none"> • limited number of commercial licensees (maximum of six); • limited number of crew and collectors/divers on each licence; • gear restrictions (hand collection only); • two separate management zones, with not more than three licensees authorised to operate in each zone, and • catch performance indicators which trigger management actions if exceeded.
Export	The majority of the catch (after processing) is exported to Asia.

² The terms bêche-de-mer (French) and trepang (Indonesian) are interchangeable. They refer to the processed (dried, boiled or smoked) body wall of sea cucumber.

Ecosystem Impacts	<p>Due to harvesting methods in the fishery being restricted to hand collection, impacts on the physical ecosystem are likely to be minimal.</p> <p>Sea cucumbers are believed to play an important role in the nutrient recycling pathways of benthic environments. The sole operator in the fishery employs a rotational harvest roster, which combined with the current low catch minimises the likelihood of localised depletion occurring. The Northern Territory Department of Resources has agreed to develop and implement performance indicators to minimise the risk of localised and serial depletion based on fine-scale logbook information collected from fishers.</p>
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Table 2: Progress in implementation of recommendations and conditions made in the 2007 assessment of the Northern Territory Trepang Fishery

Condition	Progress	Recommended Action
1. Operation of the NT Trepang Fishery will be carried out in accordance with the management regime in force under the NT <i>Fisheries Regulations 1995</i> and the NT <i>Fisheries Act 1998</i> .	The Northern Territory Department of Resources has advised that the Northern Territory Trepang Fishery continues to be managed in accordance with the management regime made under the Northern Territory <i>Fisheries Act</i> and the Northern Territory <i>Fisheries Regulations</i> .	The Department of Sustainability, Environment, Water, Population and Communities considers that this condition has been met. The department recommends that a new approved wildlife trade operation declaration for the Northern Territory Trepang Fishery specify a similar condition (see Condition 1, Table 4).
2. The Department of Primary Industry, Fisheries and Mines to advise the Department of any intended change to the NT Trepang Fishery's management arrangements that could affect the criteria on which EPBC Act decisions are based.	The Northern Territory Department of Resources has advised that no relevant changes to the management arrangements have occurred since the last assessment.	The department considers that this condition has been met. The department recommends that a new approved wildlife trade operation declaration for the Northern Territory Trepang Fishery specify a similar condition (see Condition 2, Table 4).
3. DPIFM to produce and present reports to the Department annually as per Appendix B of the ' <i>Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition</i> '.	The Northern Territory Department of Resources has provided annual fishery status reports to the department.	The department considers that this condition has been met. The department recommends that a new approved wildlife trade operation declaration for the Northern Territory Trepang Fishery specify a similar condition (see Condition 3, Table 4).

Recommendation	Progress	Recommended Action
<p>1. Through continued collaboration with other jurisdictions, DPIFM to continue to identify and implement key research priorities regarding the biology and ecology of <i>H. scabra</i>.</p>	<p>The Northern Territory Department of Resources has reported on a number of current or potential collaborative research projects with Queensland and Western Australia as well as working with the sole licence holder in the fishery, Flinders University and the South Australian Research and Development Institute.</p> <p>The key project that has been undertaken for determining stock distribution and abundance was a preliminary stock assessment undertaken by the fishery operator. The results of this survey were inconclusive and survey methods are being refined in consultation with the Commonwealth Scientific and Industrial Research Organisation. Industry plans to repeat the survey.</p> <p>The department considers that the Northern Territory Department of Resources should incorporate the results of this and other stock information into the management arrangements as information becomes available.</p>	<p>The department considers that this recommendation is ongoing and recommends that it should continue in a modified form for a further three years (see Recommendation 3, Table 4).</p> <p>With improved information on stock distribution and abundance, the Northern Territory Department of Resources will be able to develop more precautionary management measures. As such, the department recommends that new stock information for sea cucumber species is incorporated into the management arrangements (see Recommendation 2, Table 4).</p>

Recommendation	Progress	Recommended Action
<p>2. Within 2 years, DPIFM to commence developing meaningful precautionary yield estimates for <i>H. scabra</i> in the NT Trepanng Fishery, with the aim to commence implementing yield estimates within 3 years.</p>	<p>The Northern Territory Department of Resources has advised that, due to the inconclusive results of the 2009 survey, along with the variable nature of the catch and effort in the fishery, meaningful precautionary yield estimates are not yet available (see Recommendation 1 above).</p> <p>Despite the lack of data, the Northern Territory Department of Resources considers that the current catch levels are suitably precautionary and the fishery will not be under threat of overfishing in the near future. The department agrees with this assessment, due to the low catch and effort in the fishery, and considers that the steps the Northern Territory Department of Resources is undertaking to determine yield estimates are satisfactory.</p>	<p>The department considers that this recommendation has not been met, due to the failure of the preliminary stock assessment to provide sustainable yield estimates. However with improved information on stock distribution and abundance, the Northern Territory Department of Resources will be able to develop more precautionary management measures. The department recommends that, as yield estimates become available, performance indicators be reviewed to incorporate this information (see Recommendation 2, Table 4).</p>

Recommendation	Progress	Recommended Action
<p>3. Using information and research relevant to the fishery, DPIFM to review the current limit reference points for <i>H. scabra</i>, to ensure that they provide a precautionary basis to detect changes to and impacts on the stock.</p>	<p>The Northern Territory Trepang Fishery has six limit reference points or performance indicators that trigger management responses. While most reference points have been defined, and will be further refined using the results of current research projects, yield estimates are not yet defined. The Northern Territory Department of Resources and the fishery operator are working to obtain information to define yield estimates.</p> <p>In 2007, the Northern Territory Department of Resources researchers and managers, together with industry representatives, reviewed the current limit reference points using literature, known research and biological characteristics. The outcome of the review showed the current management approach was likely to ensure the sustainability of the fishery. Current limit reference points were considered appropriately precautionary.</p> <p>The department considers that the current limit reference points determined by the Northern Territory Department of Resources are sufficiently precautionary, however there remains considerable uncertainty about the sustainable yield in the fishery. The department recommends that when this information becomes available, the Northern Territory Department of Resources review the current limit reference points.</p>	<p>The department considers that this recommendation has been met. Due to the inconclusive results from the stock survey, there remains considerable uncertainty about what the sustainable yield is for the fishery. The department recommends that the Northern Territory Department of Resources continue to review the current limit reference points as more information and the results of research relevant to the fishery become available (see Recommendations 2, Table 4).</p>

Recommendation	Progress	Recommended Action
<p>4. Within 12 months, DPIFM to develop and implement appropriate data collection, reporting and management measures to mitigate the risk of localised and serial depletion.</p>	<p>The Northern Territory Department of Resources has amended the logbooks for the fishery to include the recording of the spatial location of fishing effort from global positioning system technology. Additionally, a harvest area rotation roster for skippers has been implemented by the industry operator, which aims to maintain high catch rates.</p> <p>The department considers that the data collected from logbooks could provide a basis to develop and implement performance indicators to mitigate the risk of serial and localised depletion in the fishery.</p>	<p>The department considers that this recommendation has been partially met. The department recommends that, based on fine-scale catch information collected in logbooks, the Northern Territory Department of Resources develop and implement performance measures to mitigate the risk localised and serial depletion (see Recommendation 1, Table 4).</p>
<p>5. Within 2 months of a species other than <i>H. scabra</i> being harvested in the fishery, DPIFM to develop precautionary reference points for that species.</p>	<p>There is currently no catch of species other than <i>Holothuria scabra</i> (sandfish) in the fishery. The Northern Territory Department of Resources has a performance indicator in place so that, should catch of other species in the Northern Territory Trepang Fishery exceed 30 per cent of the catch of <i>H. scabra</i>, management arrangements are reviewed to ensure they remain appropriate for the fishery.</p> <p>The department considers that this approach is sufficiently precautionary, given the relatively low threshold that triggers a review of arrangements.</p>	<p>The department considers that this recommendation is no longer required.</p> <p>The department considers that the performance framework for the Northern Territory Trepang Fishery implemented by the Northern Territory Department of Resources is sufficient to manage shifts in species composition in the fishery.</p>

Table 3: The Department of Sustainability, Environment, Water, Population and Communities’ assessment of the Northern Territory Trepang Fishery against the requirements of the EPBC Act related to decisions made under Part 13A.

Please Note – the table below is not a complete or exact representation of the EPBC Act. It is intended as a summary of relevant sections and components of the EPBC Act to provide advice on the fishery in relation to decisions under Part 13A. A complete version of the EPBC Act can be found on the department’s website.

Part 13A

Section 303BA Objects of Part 13A
<p>(1) The objects of this Part are as follows:</p> <ul style="list-style-type: none"> (a) to ensure that Australia complies with its obligations under CITES³ and the Biodiversity Convention; (b) to protect wildlife that may be adversely affected by trade; (c) to promote the conservation of biodiversity in Australia and other countries; (d) to ensure that any commercial utilisation of Australian native wildlife for the purposes of export is managed in an ecologically sustainable way; (e) to promote the humane treatment of wildlife; (f) to ensure ethical conduct during any research associated with the utilisation of wildlife; and (h) to ensure the precautionary principle is taken into account in making decisions relating to the utilisation of wildlife.

³ Convention on International Trade in Endangered Species of Wild Fauna and Flora

Part 13A (cont.)

Section 303DC Minister may amend list	The department's assessment of the Northern Territory Trepang Fishery
<p>(1) Minister may, by instrument published in the Gazette, amend the list referred to in section 303DB (list of exempt native specimens) by:</p> <ul style="list-style-type: none"> (a) including items in the list; (b) deleting items from the list; or (c) imposing a condition or restriction to which the inclusion of a specimen in the list is subject; or (d) varying or revoking a condition or restriction to which the inclusion of a specimen in the list is subject; or (e) correcting an inaccuracy or updating the name of a species. 	
<p>(1C) The above does not limit the matters that may be taken into account in deciding whether to amend the list referred to in section 303DB (list of exempt native specimens) to include a specimen derived from a commercial fishery.</p>	<p>It is not possible to list exhaustively the factors that you may take into account in amending the list of exempt native specimens. The objects of Part 13A, which are set out above this table, provide general guidance in determining factors that might be taken into account. A matter that is relevant to determining whether an amendment to the list is consistent with those objects is likely to be a relevant factor.</p> <p>The department considers that the amendment of the list of exempt native specimens to include product taken in the Northern Territory Trepang Fishery while the fishery is the subject of a declaration as an approved wildlife trade operation would be consistent with the provisions of Part 13A as:</p> <ul style="list-style-type: none"> ▪ the fishery will not harvest any CITES listed species; ▪ there are management arrangements in place to ensure that the resource is being managed in an ecologically sustainable way (see Table 1); ▪ the operation of the Northern Territory Trepang Fishery during the period of the recommended declaration as an approved wildlife trade operation is unlikely to be unsustainable or threaten biodiversity; and ▪ the <i>Environment Protection and Biodiversity Conservation Regulations 2000</i> (EPBC Regulations) do not specify fish as a class of animal in relation to the welfare of live specimens.

<p>(3) Before amending the list referred to in section 303DB (list of exempt native specimens), the Minister:</p> <ul style="list-style-type: none"> (a) must consult such other Minister or Ministers as the Minister considers appropriate; and (b) must consult such other Minister or Ministers of each State and self-governing Territory as the Minister considers appropriate; and (c) may consult such other persons and organisations as the Minister considers appropriate. 	<p>The department considers that the consultation requirements have been met.</p> <p>On 10 August 2004, the then Minister for the Environment and Heritage wrote to all fisheries ministers seeking their views on inclusion of product derived from commercial fisheries in the list of exempt native specimens, while subject to declaration as approved wildlife trade operations. Responses in support of the proposal were received from all state and territory fisheries ministers and the Commonwealth minister.</p> <p>The public comment period on the Northern Territory Department of Resources submission of April 2011 sought comment on the submission and fishery status report for the Northern Territory Trepang Fishery and provided sufficient opportunity for consultation with other persons and organisations.</p>
<p>(5) A copy of an instrument made under section 303DC is to be made available for inspection on the Internet.</p>	<p>The instrument for the Northern Territory Trepang Fishery made under section 303DC will be gazetted and made available on the department's website.</p>

Part 13A (cont.)

Section 303FN Approved wildlife trade operation	The department's assessment of the Northern Territory Trepang Fishery
(2) The Minister may, by instrument published in the <i>Gazette</i> , declare that a specified wildlife trade operation is an <i>approved wildlife trade operation</i> for the purposes of this section.	
<p>(3) The Minister must not declare an operation as an approved wildlife trade operation unless the Minister is satisfied that:</p> <p>(a) the operation is consistent with the objects of Part 13A of the Act; and</p> <p>(b) the operation will not be detrimental to:</p> <ol style="list-style-type: none"> i. the survival of a taxon to which the operation relates; or ii. the conservation status of a taxon to which the operation relates; and 	<p>The department considers that the operation of the Northern Territory Trepang Fishery is consistent with objects of Part 13A (listed above) as:</p> <ul style="list-style-type: none"> ▪ the fishery will not harvest any CITES listed species; ▪ there are management arrangements in place to ensure that the resource is being managed in an ecologically sustainable way (see Table 1); ▪ the operation of the Northern Territory Trepang Fishery during the period of the recommended declaration as an approved wildlife trade operation is unlikely to be unsustainable or threaten biodiversity; and ▪ the EPBC Regulations do not specify fish as a class of animal in relation to the welfare of live specimens. <p>The department considers that the operation of the Northern Territory Trepang Fishery during the period of the recommended declaration as an approved wildlife trade operation will not be detrimental to the survival or conservation status of a taxon to which it relates, given the management measures currently in place, which include:</p> <ul style="list-style-type: none"> ▪ limited number of commercial licensees (maximum of six); ▪ limited number of crew and collectors/divers on each licence; ▪ gear restrictions (hand collection only); ▪ two separate management zones, with not more than three licensees authorised to operate in each zone, and ▪ catch performance indicators which trigger management actions if exceeded.

<p>(ba) the operation will not be likely to threaten any relevant ecosystem including (but not limited to) any habitat or biodiversity; and</p> <p>(c) if the operation relates to the taking of live specimens that belong to a taxon specified in the regulations – the conditions that, under the regulations, are applicable to the welfare of the specimens are likely to be complied with; and</p> <p>(d) such other conditions (if any) as are specified in the regulations have been, or are likely to be, satisfied.</p>	<p>The department considers that the operation of the Northern Territory Trepang Fishery during the period of the recommended declaration as an approved wildlife trade operation will not threaten any relevant ecosystem, given the management measures currently in place, which include:</p> <ul style="list-style-type: none"> ▪ limited number of commercial licensees (maximum of six); ▪ limited number of crew and collectors/divers on each licence; ▪ gear restrictions (hand collection only); ▪ two separate management zones, with not more than three licensees authorised to operate in each zone, and ▪ catch performance indicators which trigger management actions if exceeded. <p>The EPBC Regulations do not specify fish as a class of animal in relation to the welfare of live specimens.</p> <p>No other conditions are specified in relation to commercial fisheries in the EPBC Regulations.</p>
<p>(4) In deciding whether to declare an operation as an approved wildlife trade operation the Minister must have regard to:</p> <p>(a) the significance of the impact of the operation on an ecosystem (for example, an impact on habitat or biodiversity); and</p>	<p>The department considers that the operation of the Northern Territory Trepang Fishery during the period of the recommended declaration as an approved wildlife trade operation will not have a significant impact on any relevant ecosystem, given the management measures currently in place, which include:</p> <ul style="list-style-type: none"> ▪ limited number of commercial licensees (maximum of six); ▪ limited number of crew and collectors/divers on each licence; ▪ gear restrictions (hand collection only); ▪ two separate management zones, with not more than three licensees authorised to operate in each zone, and ▪ catch performance indicators which trigger management actions if exceeded.

<p>(b) the effectiveness of the management arrangements for the operation (including monitoring procedures).</p>	<p>The department considers that the management arrangements that will be employed for the Northern Territory Trepang Fishery are likely to be effective. Management arrangements for the fishery are included in the Northern Territory <i>Fisheries Act</i> and the Northern Territory <i>Fisheries Regulations</i>. Management arrangements include:</p> <ul style="list-style-type: none"> ▪ limited number of commercial licensees (maximum of six); ▪ limited number of crew and collectors/divers on each licence; ▪ gear restrictions (hand collection only); and ▪ two separate management zones, with not more than three licensees authorised to operate in each zone. <p>The Northern Territory Department of Resources monitors the fishery against catch performance indicators which trigger management actions if exceeded.</p>
<p>(5) In deciding whether to declare an operation as an approved wildlife trade operation the Minister must have regard to:</p> <p>(a) whether legislation relating to the protection, conservation or management of the specimens to which the operation relates is in force in the State or Territory concerned; and</p> <p>(b) whether the legislation applies throughout the State or Territory concerned; and</p> <p>(c) whether, in the opinion of the Minister, the legislation is effective.</p>	<p>The Northern Territory Trepang Fishery will be managed under the Northern Territory <i>Fisheries Act</i> and the Northern Territory <i>Fisheries Regulations</i>.</p> <p>The Northern Territory <i>Fisheries Act</i> and the Northern Territory <i>Fisheries Regulations</i> apply throughout Northern Territory waters.</p> <p>The legislation is likely to be effective.</p>
<p>(10) For the purposes of section 303FN, an operation is a wildlife trade operation if, and only if, the operation is an operation for the taking of specimens and:</p> <p>(d) the operation is a commercial fishery.</p>	<p>The Northern Territory Trepang Fishery is a commercial fishery.</p>

Part 13A (cont.)

Section 303FR Public consultation	The department's assessment of the Northern Territory Trepang Fishery
<p>(1) Before making a declaration under section 303FN, the Minister must cause to be published on the Internet a notice:</p> <ul style="list-style-type: none">(a) setting out the proposal to make the declaration; and(b) setting out sufficient information to enable persons and organisations to consider adequately the merits of the proposal; and(c) inviting persons and organisations to give the Minister, within the period specified in the notice, written comments about the proposal.	<p>The department considers that consultation requirements of the EPBC Act for declaring an approved wildlife trade operation have been met. A public notice, which set out the proposal to declare the Northern Territory Trepang Fishery an approved wildlife trade operation and included the submission from the Northern Territory Department of Resources, was released for public comment which closed on 20 May 2011 with no comments received.</p>
<p>(2) A period specified in the notice must not be shorter than 20 business days after the date on which the notice was published on the Internet.</p>	<p>A public notice, which set out the proposal to declare the Northern Territory Trepang Fishery a wildlife trade operation and included the submission from the Northern Territory Department of Resources was released for public comment on 18 April 2011 which closed on 20 May 2011, a total of 23 business days.</p>
<p>(3) In making a decision about whether to make a declaration under section 303FN, the Minister must consider any comments about the proposal to make the declaration that were given in response to the invitation in the notice.</p>	<p>No public comments about the proposal were received.</p>

Part 13A (cont.)

Section 303FT Additional provisions relating to declarations	The department's assessment of the Northern Territory Trepang Fishery
(1) This section applies to a declaration made under section 303FN, 303FO or 303FP.	A declaration for the Northern Territory Trepang Fishery will be made under section 303FN.
<p>(4) The Minister may make a declaration about a plan or operation even though he or she considers that the plan or operation should be the subject of the declaration only:</p> <p>(a) during a particular period; or</p> <p>(b) while certain circumstances exist; or</p> <p>(c) while a certain condition is complied with.</p> <p>In such a case, the instrument of declaration is to specify the period, circumstances or condition.</p>	<p>The standard conditions applied to the declaration of a commercial fishery as an approved wildlife trade operations include:</p> <ul style="list-style-type: none"> • operation in accordance with the management regime; • notifying the department of changes to the management regime; and • annual reporting in accordance with the requirements of the Australian Government <i>Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition</i> <p>The instrument of declaration for the Northern Territory Trepang Fishery specifies the standard and any additional conditions applied.</p>
(8) A condition may relate to reporting or monitoring.	One of the standard conditions relates to reporting.
(9) The Minister must, by instrument published in the <i>Gazette</i> , revoke a declaration if he or she is satisfied that a condition of the declaration has been contravened.	
(11) A copy of an instrument under section 303FN, or this section is to be made available for inspection on the Internet.	The instrument for the Northern Territory Trepang Fishery made under section 303FN and the conditions under section 303FT will be gazetted and made available on the department's website.

Part 16

Section 391 Minister must consider precautionary principle in making decisions	The department's assessment of the Northern Territory Trepang Fishery
(1) The Minister must take account of the precautionary principle in making a decision under section 303DC and/or section 303FN, to the extent he or she can do so consistently with the other provisions of this Act.	The precautionary principle has been considered in the preparation of advice in relation to decisions under section 303DC and section 303FN.
(2) The precautionary principle is that lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment where there are threats of serious or irreversible environmental damage.	

The Department of Sustainability, Environment, Water, Population and Communities' final conditions and recommendations to the Northern Territory Department of Resources for the Northern Territory Trepang Fishery

The material submitted by the Northern Territory Department of Resources demonstrates that the management arrangements for the Northern Territory Trepang Fishery meet most of the requirements of the Australian Government *Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition*.

The department considers that overall the management regime for the Northern Territory Trepang Fishery aims to ensure that fishing is conducted in a manner that does not lead to over-fishing and that stocks are not currently overfished.

Management arrangements in the fishery include:

- limited number of commercial licensees (maximum of six);
- limited number of crew and collectors/divers on each licence;
- gear restrictions (hand collection only);
- two separate management zones, with not more than three licensees authorised to operate in each zone, and
- catch performance indicators which trigger management actions if exceeded.

Taking into account the lack of bycatch and byproduct due to the hand collection methods used in the fishery and the management arrangements for sea cucumber species, the department considers that the management regime for the Northern Territory Trepang Fishery provides for fishing operations to be managed to minimise their impact on the structure, productivity, function and biological diversity of the ecosystem.

While the fishery is relatively well managed, the department has identified a number of risks and uncertainties that must be managed to ensure that impacts are minimised including:

- the inherent vulnerability of sea cucumber species in general to over-exploitation;
- the potential for serial and localised depletion of the target species; and
- the lack of information on stock distribution and abundance.

The key challenges for this fishery will be:

- developing and implementing further performance measures to mitigate the risks of localised and serial depletion of sea cucumber species; and
- obtaining additional stock information and incorporating this information into the fishery management arrangements.

The department considers that, until it can be demonstrated that these issues have been adequately addressed, declaration of the harvest operations of the Northern Territory Trepang Fishery as an approved wildlife trade operation for three years, until 30 July 2014, is appropriate. The department considers that the declaration should be subject to the conditions listed in Table 4. To contain and minimise the risks in the longer term the recommendations outlined in Table 4 have been made.

Unless a specific timeframe is provided, each condition and recommendation must be addressed within the term of the declaration.

Table 4: Northern Territory Trepang Fishery Assessment– Summary of Issues, Conditions and Recommendations – July, 2011

Issue	Condition
<p>General Management</p> <p>Export decisions relate to the arrangements in force at the time of the decision. To ensure that these decisions remain valid and export approval continues uninterrupted, the Department of Sustainability, Environment, Water, Population and Communities needs to be advised of any changes that are made to the management regime and make an assessment that the new arrangements are equivalent or better, in terms of ecological sustainability, than those in place at the time of the original decision. This includes operational and legislated amendments that may affect sustainability of the target species or negatively impact on byproduct, bycatch, protected species or the ecosystem.</p>	<p>Condition 1: Operation of the fishery will be carried out in accordance with the management regime in force under the Northern Territory <i>Fisheries Act</i> and the Northern Territory <i>Fisheries Regulations</i>.</p> <p>Condition 2: The Northern Territory Department of Resources to inform the Department of Sustainability, Environment, Water, Population and Communities of any intended amendments to the Northern Territory Trepang Fishery management arrangements that may affect the assessment of the fishery against the criteria on which <i>Environment Protection and Biodiversity Conservation Act 1999</i> decisions are based.</p>
<p>Annual Reporting</p> <p>It is important that reports be produced and presented to the department annually in order for the performance of the fishery and progress in implementing the recommendations in this report and other managerial commitments to be monitored and assessed throughout the life of the declaration. Annual reports should include: a description of the fishery; management arrangements in place; research and monitoring outcomes; recent catch data for all sectors of the fishery; status of target stock; interactions with protected species; impacts of the fishery on the ecosystem in which it operates; and information outlining progress in implementing recommendations resulting from the previous assessment of the fishery. For a complete description of annual reporting requirements see Appendix B of the <i>Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition</i> available from the department's website at: http://www.environment.gov.au/coasts/fisheries/publications/guidelines.html.</p>	<p>Condition 3: The Northern Territory Department of Resources to produce and present reports to the Department of Sustainability, Environment, Water, Population and Communities annually as per Appendix B to the <i>Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition</i>.</p>

Issue	Recommendation
<p>Stock assessment and management</p> <p>The Department of Sustainability, Environment, Water, Population and Communities has identified the following risks to the sustainability of the operation of the Northern Territory Trepang Fishery:</p> <ul style="list-style-type: none"> • the absence of a robust stock assessment; • limited management measures for ensuring that harvest is limited to sustainable levels; • limited information on critical elements of sandfish distribution and abundance; and • potential for localised and serial depletion. <p>The department acknowledges the work of the Northern Territory Department of Resources on the implementation of a monitoring framework for detecting localised and serial depletion. This was done through amending logbooks for the fishery to include the recording of harvest areas using global positioning system (GPS) coordinates, allowing the collection of finer spatial data. The department notes that industry has a rotational harvest roster in place for the fishery, but that this was primarily implemented to maintain high catch rates. The department considers that the data obtained through logbook records provide a basis to implement finer scale management, and could be used to develop performance measures to formalise management arrangements to mitigate the risk of localised and serial depletion.</p> <p>The department notes that the operator in the fishery, on behalf of the Northern Territory Department of Resources, conducted a pilot survey of <i>Holothuria scabra</i> (sandfish), however the outcomes of the survey were inconclusive. Industry intends to repeat the survey using revised methods and gear. The department recommends that the Northern Territory Department of Resources incorporate the results of future stock assessment work and review yield estimates and reference points as appropriate. The department also recommends that the Northern Territory Department of Resources develop and implement performance measures to minimise the potential for localised and serial depletion, as information on stock distribution and abundance becomes available.</p> <p>Sustainable yield estimates are important to allow the sustainable management of the fishery. A recommendation was included in both the 2004 and 2007 assessments for the development of sustainable yield estimates. The Northern Territory Department of Resources reviewed the current limit reference points in 2007, taking into account biological characteristics and other available published research. In addition, performance indicators and limit reference points are reviewed annually. The outcomes of these reviews have confirmed that the current management approach, in light of available information, is adequate to ensure the sustainability of the fishery. Catch data from 2001 to 2009 indicates that catch per unit effort has been relatively stable in the fishery across a range of catch levels up to around 300 tonnes. However, this apparent stability could be attributable to industry's rotational harvest arrangements. Refined yield estimates combined with effective performance measures to ensure localised or serial depletion is not occurring would provide greater confidence in the sustainability of harvest levels in the fishery.</p>	<p>Recommendation 1:</p> <p>The Northern Territory Department of Resources to utilise logbook data on catch location to develop and implement performance indicators to mitigate the risk of localised and serial depletion.</p> <p>Recommendation 2:</p> <p>The Northern Territory Department of Resources to continue to incorporate stock information into the management arrangements of the fishery.</p>

Collaborative approach to management of regional sea cucumber harvest

The sea cucumber fisheries of northern Australia generally harvest many of the same species and face many of the same issues in terms of uncertain stocks and limited biological information. For example, *Holothuria scabra* (sandfish) is a key target species in both the Northern Territory Trepang Fishery and the Western Australian Bêche-de-mer Fishery. With few licence holders, licence holders common to many of the fisheries and vertical integration of harvesting and processing, there is both opportunity for collaborative and complementary implementation of robust management arrangements and the threat of rapid, relatively uncontrolled transfers of effort from species to species and between fisheries.

Submissions from a number of fishery management agencies for initial assessment of sea cucumber fisheries under the EPBC Act indicated that a high level of collaboration and coordination in regard to sea cucumber research and existed through North Australian Fishery Management workshops during the late 1990's.

International trade in sea cucumbers was initially discussed at the 12th Conference of the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 2002. A technical workshop was held in 2004 to consider and review biological and trade information to assist establishing conservation priorities for sea cucumbers. Subsequently, attention has focussed on the development of recommendations for Parties to improve the conservation of sea cucumber stocks. At the 14th Conference of the Parties in 2007, the Parties adopted a decision to bring the need to increase efforts to address challenges in the sustainable management of sea cucumber fisheries to the specific attention of the Food and Agriculture Organisation of the United Nations (FAO).

In November 2007 the FAO held a workshop on Sustainable Use and Management of Sea Cucumber Fisheries (Purcell, 2010). A decision of the 15th Conference of the Parties in 2010 was for the Animals Committee of CITES to evaluate the outcomes of the workshop and recommend appropriate follow-up actions at the 16th meetings of the Conference of the Parties (to be held in March 2013).

Given the increased international scrutiny of management arrangements for sea cucumber resources, the department considers that close cooperation between all jurisdictions responsible for managing Australian sea cucumber resources is necessary.

Recommendation 3:

The Northern Territory Department of Resources to facilitate and pursue collaborative research and complementary management arrangements for sea cucumber resources with all relevant jurisdictions across northern Australia.

References

Purcell SW (2010) *Managing sea cucumber fisheries with an ecosystem approach*.
FAO Fisheries and Aquaculture Technical Paper No. 520, FAO, Rome, Italy.

Acronyms

CITES	Convention on International Trade in Endangered Species
DPIFM	(Northern Territory) Department of Primary Industry Fisheries and Mines
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EPBC Regulations	<i>Environment Protection and Biodiversity Conservation Regulations 2000</i>
GPS	Global Positioning System
NT	Northern Territory
SCUBA	Self Contained Underwater Breathing Apparatus