



Australian Government

Department of Sustainability, Environment, Water, Population and Communities

Assessment of the
Northern Territory Mud Crab Fishery

September 2012

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Disclaimer

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 Parts 13 and 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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This section contains the department's assessment of the NT Mud Crab Fishery's performance against the Australian Government's *Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition* and outlines the reasons the department recommends that product derived from the fishery be included in the list of exempt native specimens.

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Table 4 contains a description of the issues identified by the department with the current management regime for the NT Mud Crab Fishery and outlines the proposed recommendations that would form part of the delegate's decision to include product from the fishery in the list of exempt native specimens.

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Table 1: Summary of the Northern Territory (NT) Mud Crab Fishery

<p>Publicly available information relevant to the fishery</p>	<ul style="list-style-type: none"> • Northern Territory <i>Fisheries Act 1988</i> • Northern Territory Fisheries Regulations 1993 • <i>Mud Crab Fishery Management Plan</i> • <i>NT Mud Crab Fishery 2011 – Progress in implementing the Department of Sustainability, Environment, Water, Population and Communities recommendations made in the assessment of the NT Mud Crab Fishery 2007</i> • <i>Northern Territory Mud Crab Fishery - A report against the Guidelines for the Ecologically Sustainable Management of Fisheries – 2007</i> • <i>Assessing the ecological sustainability of the Northern Territory Mud Crab Fishery - 2001</i> • <i>Mud Crab Fishery Status Report 2010</i> • <i>Mud Crab Fishery Status Report 2009</i> • <i>Mud Crab Fishery Status Report 2008</i> • <i>Mud Crab Fishery Status Report 2007</i> • <i>Marine bioregional plan for the North Marine Region 2012</i> • DSEWPAC (formerly Department of the Environment and Heritage) <i>Assessment of the Northern Territory Mud Crab Fishery 2002</i>
<p>Area</p>	<p>The NT Mud Crab Fishery operates in tidal waters between the Queensland and Western Australian borders, with most activity concentrated in the Gulf of Carpentaria. Some fishers also operate along the north Arnhem coast, Van Diemen Gulf, Chambers Bay and the west coast to the Victoria River region. Crabbing operations are confined to coastal and estuarine areas, predominantly mud flats.</p> <p>Commercial crab fishing is not permitted in Darwin Harbour, most creeks adjoining Shoal Bay, Leaders Creek and the waterways of Kakadu National Park.</p> <p>Recreational fishers may crab in all waters of tidal influence except in Kakadu National Park. Most recreational crabbing activity occurs in the Darwin Harbour and Shoal Bay area, the McArthur River and the Roper River.</p> <p>The fishery's operations occur adjacent to the North Marine Region.</p>
<p>Target Species</p>	<p>Mud crab/ mangrove crab (<i>Scylla serrata</i>) accounts for 99% of catch from all sectors.</p> <p>Orange mud crab (<i>S. olivacea</i>) is also caught, and accounts for the remainder of the catch.</p> <p>Information on the biology of the species is found in the Department of Sustainability, Environment, Water, Population and Communities DSEWPAC's initial assessment of the fishery.</p> <p>A bait net component of the fishery takes small amounts of mullet, blue threadfin, milk shark and catfish, which are used to bait pots.</p>

Fishery status	The <i>Mud Crab Fishery Status Report 2010</i> indicates that the harvest status of the fishery is considered fully developed, suggesting sustainable levels of fishing and satisfactory stock levels, with catch and fishing levels close to the sustainable yield.
Byproduct Species	<p>There is little byproduct in the fishery due to the highly selective gear used to target large mud crabs. In 2010, byproduct of commercial crabbing operations included bream (95kg), cod (17kg) and catfish (8kg). These were mainly used to bait pots.</p> <p>Byproduct of the bait net component includes very small amounts of queenfish, trevally and bream.</p>
Gear	<p>Crab pots are permitted to be used by commercial operators. These must have a float attached and must not exceed 0.5m³ in volume or 1m in any dimension.</p> <p>There is no maximum limit on the number of crab pots commercial operators can use. Operators can use 30 pots per unit of entitlement and can lease any number of units. Four units seem to be the maximum practical limit.</p> <p>Small mesh nets can be used under a restricted bait net entitlement to harvest fish for use as crab bait. Nets can only be set in the open sea within 3 nautical miles of the coast, and the nets must be attended at all times. The use of bait nets is prohibited at a number of areas around the coast.</p> <p>The recreational sector is subject to the same gear controls as commercial fishers. Most use collapsible traps. Dillies (which consist of a panel of mesh on a steel frame) may also be used but must not be constructed in such a way that would cause entanglement of mud crabs or other aquatic life.</p> <p>A gear restriction of five pots (or dillies) per person applies, with a maximum of 10 pots per vessel. Mud crabs may also be harvested by a hand spear, hand-held hook, hook and line, hand net, cast net or drag net.</p> <p>Fishing tour operator clients are subject to the same gear controls as recreational fishers.</p> <p>Indigenous fishers can use the same gear as recreational fishers. Spearing and hand harvesting are the most popular methods.</p>
Season	Generally all year-round. However wet season flooding can restrict access to the Gulf of Carpentaria for several months.
Commercial harvest	<p>In 2010 the commercial sector caught 395 tonnes of mud crabs.</p> <p>In 2000, the annual commercial mud crab catch exceeded 1000 tonnes. This was considered to be due to high recruitment during favourable environmental conditions. Since then, the introduction of restrictions on the take of commercially unsuitable crab or 'soft crab' accounts for some of the decline in catch and catch per unit effort.</p>
Value of commercial harvest	The 2010 harvest was valued at \$7.9 million.

Take by other sectors	<p><u>Recreational</u></p> <p>The 2001 <i>National Recreational and Indigenous Fishing Survey</i> indicated that over 82,000 mud crabs (approximately 65 tonnes) were harvested in 2000. The 2010 Status Report states that approximately 74% of these were caught in the Darwin Harbour/Shoal Bay area.</p> <p>There are no restrictions in the Recreational sector on the take of 'soft' crabs, however, the testing and release of such crabs is encouraged.</p> <p><u>Indigenous</u></p> <p>During the period of 2000-01, harvest was approximately 86,000 crabs (approximately 69 tonnes). Indigenous groups now also own some fishing licences.</p> <p><u>Charter</u></p> <p>In 2010, the Fishing Tour Operator sector landed 1152 mud crabs of which 410 were retained. Targeting mud crabs only amounts to a small part of the effort of the sector.</p>
Commercial licences issued	<p>The commercial sector is restricted to 49 individual licences. Each licence is allocated two units of entitlement valued at 30 pots each. All licences were fully utilised in 2010. Fishers can now lease any number of individual units.</p>
Management arrangements	<p>The NT Mud Crab Fishery is managed under the Northern Territory <i>Fisheries Act 1988</i>, and the Northern Territory Fisheries Regulations 1993. The NT Department of Primary Industry and Fisheries (DPIF) is responsible for managing the fishery.</p> <p>Management measures include:</p> <ul style="list-style-type: none"> • minimum legal size limits (commercial minimum size limits are slightly higher than recreational minimal size limits) • restrictions on gear for commercial and recreational fishers • a prohibition on the take of all berried female mud crabs (i.e. with eggs attached) for commercial and recreational fishers • limited entry (restricted to 49 transferable licences) for commercial fishers • possession limits for recreational fishers • area closures for commercial and recreational fishers, and • licensing of fishing tour operators.
Export	<p>Catch is mainly directed to domestic markets, although there has been some export to Singapore, China and USA.</p>
Bycatch	<p>Bycatch is reported to be minimal in the fishery due to the selective nature of the crab pots used, which target large mud crabs.</p> <p>Bycatch includes undersized mud crabs (which must be released), and unmarketable (empty or low meat content crabs). Blue swimmer crabs, cod and catfish can also be caught as bycatch, and can be retained if desired.</p> <p>Due to the highly selective methods of hand fishing or spearing, the Indigenous sector has negligible bycatch.</p>

Interaction with Protected Species¹	There have been no reported interactions with threatened, endangered, or protected species since the fishery was last assessed by DSEWPAC in 2007.
Ecosystem Impacts	<p>The fishery has minimal impact on the benthic environment due to the fishing methods used that effectively target large mud crabs. The fishery also has very low bycatch.</p> <p>SEWPaC has reviewed the impacts of the fishery and considers that the current level of mud crab harvest is unlikely to significantly impact on the ecosystem.</p> <p>The fishery operates adjacent to the North Marine Region. Due to the minimal impacts of the fishery on the benthic environment and low bycatch, it is considered unlikely that the conservation values of the North Marine Region would be impacted by the fishery.</p>
Impacts on World Heritage property/RAMSAR site	<p>The Kakadu National Park is listed as a World Heritage Area. Fishing for crabs (both commercial and recreational) is not permitted in the waterways of Kakadu National Park.</p> <p>The department considers that an action taken by an individual fisher, acting in accordance with the fishery management regime, would not be expected to have a significant impact on the Kakadu National Park or the world heritage values of the Kakadu World Heritage area.</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.

Table 2: Progress in implementation of recommendations made in the previous assessment of the Northern Territory (NT) Mud Crab Fishery

Recommendation	Progress	Recommended Action
<p>1. DPIFM to inform the Department of the Environment and Water Resources (DEW) of any intended amendments to the NT Mud Crab Fishery's management arrangements that may affect the criteria on which <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) decisions are based.</p>	<p>The Department of Primary Industry and Fisheries (DPIF, formerly DPIFM) has advised that changes were made to the <i>Mud Crab Fishery Management Plan</i> in 2010 to:</p> <ul style="list-style-type: none"> • implement unitisation of pot entitlements in the fishery • strengthen penalties for non-compliance <p>DPIF has advised that there have been no changes to the management arrangements in 2011.</p> <p>DPIF has advised that further amendments are expected to occur during 2012 including unitisation of bait net entitlements. These will not alter the current amount of net entitlement in the fishery.</p>	<p>The department considers this recommendation has been met and remains ongoing.</p> <p>(See Recommendation 2, Table 4).</p>

Recommendation	Progress	Recommended Action
<p>2. DPIFM to produce and present reports to DEW annually.</p> <p>Reports to include:</p> <ul style="list-style-type: none"> i. Information sufficient to allow assessment of the progress of DPIFM in implementing the recommendations made in the Assessment of the NT Mud Crab Fishery 2007, and ii. A description of the fishery, management arrangements in place, available catch data for all sectors of the fishery, status of target stock including performance of the fishery against objectives, performance indicators and measures, interactions with protected species, impacts of the fishery on the ecosystem in which it operates and research and monitoring outcomes. <p>Information should only be provided on those aspects which are relevant to the fishery and that articulate 'changes' since the last annual report.</p>	<p>DPIF has provided reports to the department annually.</p>	<p>The department considers that this recommendation has been met and will remain ongoing.</p> <p>(See Recommendation 3, Table 4).</p>

Recommendation	Progress	Recommended Action
<p>3. DPIFM to monitor the status of mud crabs in relation to trigger reference points. Within 3 months of becoming aware of a reference point being triggered, DPIFM to develop a clear timetable for the implementation of appropriate management responses.</p>	<p>The department acknowledges the continued monitoring which has been occurring in regard to catch and effort levels. DPIF has advised that these are observed through logbook returns, observation of crabbing activities and size frequency monitoring via a monthly market monitoring program.</p> <p>DPIF has confirmed that they will develop a clear timetable for the implementation of management responses appropriate to reference points being triggered.</p> <p>DPIF has also advised that the implementation of the revised management responses in response to reference points being triggered will most likely be referred to the Mud Crab Fishery Management Advisory Committee, which will provide further advice to the Director of Fisheries.</p> <p>The department expects DPIF to continue the ongoing monitoring of trigger reference points and ensure that appropriate management responses are implemented in a timely manner.</p>	<p>The department consider that this recommendation has been met.</p>

Recommendation	Progress	Recommended Action
<p>4. DPIFM to continue to actively pursue the development of collaborative research with other jurisdictions and agencies and ensure that management arrangements for the NT Mud Crab Fishery continue to take account of the results of research conducted.</p>	<p>DPIF advised of two research projects conducted in 2011 in collaboration with QLD.</p> <p>The first project, “Improving gear selectivity in Australian Mud Crab Fisheries” evaluated the effects of fitting different numbers and size of escape vents on mud crab pots.</p> <p>Project results showed the following:</p> <ul style="list-style-type: none"> • Pots fitted with two escape vents decreased the retention of under-sized crabs by up to 40% (compared to unvented control pots), and catch rates of legal-sized crabs in vented pots were generally the same or higher than those in unvented pots. • The addition of more than two escape vents led to further reductions in the catch of under-sized crabs, but compromised catch of legal-sized crabs. <p>DPIF has advised that they have arranged for the production of 1000 escape vents to be made (as samples) in each of two sizes (46 mm high for the NT commercial fishery and 50 mm high for the QLD mud crab fishery). The samples will be distributed to commercial fisheries in the NT and QLD for evaluation.</p> <p>The department encourages NT to continue to collaborate with QLD in regard to the use of the escape vents and to consider mandatory implementation of escape vents in crab pots within the NT Mud Crab Fishery.</p>	<p>The department considers this recommendation has been met.</p>

Recommendation	Progress	Recommended Action
(Recommendation 4 cont'd.)	<p>The second project “A strategic review of fisheries research and management in Northern Australia” involved modelling available NT and QLD mud crab catch, effort and market monitoring data. The project used the Growth Type Group (GTG) Model and based on monthly annual observations data.</p> <p>The project found that the estimate of fishing mortality for the NT commercial fishery was approximately half that obtained from previous models used and that the QLD Mud Crab fishery had similar results. DPIF considers that the project findings suggest that impacts of fishing on these fisheries is not as great as previously reported.</p> <p>DPIF also suggest that it is the biomass which is limiting effort and catches, and had advised that the overall opinion is that recruitment to the NT Mud Crab Fishery is heavily dependent on wet season rainfall. DPIF advises that this is also supported by recent collaborative analyses of rainfall and mud crab catch/effort patterns in the NT by Griffith University.</p> <p>The department acknowledges the collaborative research undertaken to date and expects DPIF to ensure that all results and findings are taken into account in the future management of the fishery.</p> <p>The department expects DPIF to continue research with other jurisdictions as appropriate.</p>	

Recommendation	Progress	Recommended Action
<p>5. Within 12 months, DPIFM to conduct an ecological risk assessment on the commercial (including the restricted bait net component) and recreational sector of the fishery to determine the impact of the removal of mud crabs from the ecosystem.</p> <p>The risk assessment should also involve:</p> <ul style="list-style-type: none"> the likely impact of the fishery on bycatch and protected species; and the level and effects of ghost fishing by lost or discarded mud crab apparatus. <p>DPIFM to investigate measures to ensure that issues identified at risk are minimised.</p>	<p>DPIF has advised that an Ecological Risk Assessment (ERA) workshop for the NT Mud Crab Fishery was conducted in December 2008, with the final report provided to the department.</p> <p>DPIF advised that no issues were considered to be of high risk to the ecologically sustainable management of the fishery. No specific changes to the management arrangements were considered necessary by DPIF.</p> <p>In addition, DPIF has advised that the Environmental Management System and Code of Practice for the NT Mud Crab Fishery are being reviewed and updated to include new information on maintaining the ecological health of the fishery, as part of a project being conducted by the NT Seafood Council and Seanet NT.</p> <p>This project is intended to improve the environmental standards and performance within the NT commercial fishing industry.</p>	<p>The department considers that this recommendation has been met.</p>

<p>6. Within 12 months, DPIFM to review the compliance risk assessment for the NT Mud Crab Fishery and specifically consider:</p> <ul style="list-style-type: none"> • catch and effort data validation; • compliance with commercial pot number restrictions and minimum size limits; • the ability to grade catches between pot lifts; and • educating licence holders and fishers on compliance issues. <p>Within 2 years, DPIFM to develop a compliance strategy to address risks identified.</p>	<p>The department is aware that a compliance risk assessment was carried out by DPIF in November 2009.</p> <p>The risk assessment indicated unauthorised use of gear and failure to keep accurate logbook records as the highest priorities for the fishery.</p> <p>DPIF has advised that strategies to address the identified risks were considered and further developed by DPIF and the Water Police Section of the NT Police, through strategic and operational planning processes. These include:</p> <ul style="list-style-type: none"> • a targeted approach to unlawful activities based on intelligence to date • improved education of operators with respect to accurate completion of logbook returns • a zero tolerance approach to submission of late or incomplete logbook records • development of prosecution impact statements for court education purposes <p>DPIF notes that an objective of amending the management arrangements to introduce unitisation and implement stronger penalties in the fishery was to reduce levels of non-compliance. The department also acknowledges that the Minister for Fisheries has released a discussion paper and considered public submissions on proposed amendments to the NT <i>Fisheries Act 1988</i> which include:</p> <ul style="list-style-type: none"> • placing greater responsibility on licence owners to ensure that fishing operations are undertaken lawfully; and • fisheries penalties that are reflective of the seriousness of the offence and are adequate to deter repeat offending. <p>Final consultation on the amendments to the <i>Fisheries Act 1988</i> has been undertaken. DPIF has advised that drafting of the new legislation will occur before the end of 2012, with the intention of having the amendments in by early 2013.</p> <p>The department expects to DPIF to advise when the new legislation/amendments have been finalised.</p>	<p>The department considers that this recommendation has been met.</p>
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<p>7. By December 2009, DPIFM to develop and implement an appropriate process to collect estimates of the recreational and indigenous take of mud crabs from NT waters and factor estimates, once available, into future stock assessments and management arrangements to ensure overall catch levels are sustainable.</p>	<p>The department acknowledges that a comprehensive 12 month recreational fishing survey was carried out in the NT and concluded at the end of 2010. The survey obtained data on recreational participation rates, catches, fishing effort, expenditure and attitudes.</p> <p>DPIF has advised that the survey data is currently being processed, extrapolated and analysed before a final report is available. DPIF advised that due to unforeseen circumstances and delays, the final report was not available by the intended time in early 2012.</p> <p>The report data is expected to provide input to revised recommendations and management arrangements applying to recreational fishing in the Northern Territory.</p> <p>DPIF has also confirmed that accurate data relating to Indigenous take of mud crabs in the fishery has not been available to date and advised it will continue to investigate appropriate methods to obtain this data.</p> <p>Given that there is a need for improvement in the collection and recording of recreational and Indigenous take of mud crabs, the department expects DPIF to ensure that once the above report is finalised, estimates are factored into future stock assessments and management arrangements to ensure future sustainability of catch levels within the fishery.</p>	<p>The department considers this recommendation has not been fully met and is ongoing in a modified form.</p> <p>(See Recommendation 4, Table 4).</p>
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<p>8. Within 18 months, DPIFM to implement a system for the reporting of all interactions with protected species. An education program for fishers on species recognition, interaction minimisation/mitigation measures and the importance of reporting is to be developed in conjunction with the reporting system.</p>	<p>Given the highly selective fishing gear used in the fishery (crab pots), DPIF has advised that it considers the use of general logbooks for commercial mud crab fishers as adequate to report protected species interactions. The logbooks include the recording of bycatch and provide comment on any Threatened, Endangered and Protected (TEP) species interactions. The reporting requirements of interactions with TEP species under the EPBC Act are clearly printed on the front cover of all commercial fisher logbooks.</p> <p>DPIF has also advised that the 2008 ERA conducted for the fishery concluded that mud crab pots pose a negligible risk to TEP species.</p> <p>Additionally, a reporting procedure has been developed for any TEP interactions occurring within Territory waters. DPIF has advised that a fact-sheet has been provided to all licence holders explaining the reporting requirements. The commercial logbooks also reflect reporting requirements for these interactions within NT waters.</p> <p>DPIF has confirmed that ongoing education on the importance of complete and accurate reporting of TEP interactions is provided to commercial fishermen during formal fishery interviews. This is supplemented by field visits.</p> <p>Species identification guides for <i>Glyphis</i> and sawfish have been developed and are distributed to improve reporting and information exchange.</p>	<p>The department considers this recommendation has been met.</p>
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Table 3: The Department of Sustainability, Environment, Water, Population and Communities' assessment of the Northern Territory Mud Crab Fishery against the requirements of the EPBC Act related to decisions made under Parts 13 and 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 Parts 13 and 13A. A complete version of the EPBC Act can be found on the department's website.

Part 13

Division 1 Listed threatened species Section 208A Minister may accredit plans or regimes	The department's assessment of the Northern Territory's (NT) Mud Crab Fishery
<p>(1) Minister may, by instrument in writing, accredit for the purposes of this Division:</p> <p>(c) a plan of management, or a policy, regime or any other arrangement, for a fishery that is:</p> <ul style="list-style-type: none"> i. made by a State or self-governing Territory; and ii. in force under a law of the State or self-governing Territory; <p>if satisfied that:</p> <p>(f) the plan, regime or policy requires persons engaged in fishing under the plan, regime or policy to take all reasonable steps to ensure that members of listed threatened species are not killed or injured as a result of the fishing; and</p> <p>(g) the fishery to which the plan, regime or policy relates does not, or is not likely to, adversely affect the survival or recovery in nature of the species.</p>	<p>The NT Mud Crab Fishery is managed under the Northern Territory <i>Fisheries Act</i>, the Northern Territory Fisheries Regulations, and the Mud Crab Fishery Management Plan.</p> <p>The Mud Crab Fishery Management Plan was accredited in September 2002. The department considers that the management regime for the NT Mud Crab Fishery requires operators to take all reasonable steps to ensure members of listed threatened species are not killed or injured as a result of the fishing.</p> <p>Currently, given the selective nature of the fishing gear used, evidence suggests that the NT Mud Crab Fishery has minimal, if any, interactions with listed threatened species. Therefore, the department considers the current operation of the NT Mud Crab Fishery is not likely to adversely affect the survival or recovery in nature of any listed threatened species.</p>

Part 13 (cont.)

Division 2 Migratory species Section 222A Minister may accredit plans or regimes	The department's assessment of the NT Mud Crab Fishery
<p>(1) Minister may, by instrument in writing, accredit for the purposes of this Division:</p> <p>(c) a plan of management, or a policy, regime or any other arrangement, for a fishery that is:</p> <ul style="list-style-type: none">i. made by a State or self-governing Territory; andii. in force under a law of the State or self-governing Territory; <p>if satisfied that:</p> <p>(f) the plan, regime or policy requires persons engaged in fishing under the plan, regime or policy to take all reasonable steps to ensure that members of listed migratory species are not killed or injured as a result of the fishing; and</p> <p>(g) the fishery to which the plan, regime or policy relates does not, or is not likely to, adversely affect the conservation status of a listed migratory species or a population of that species.</p>	<p>The NT Mud Crab Fishery is managed under the Northern Territory <i>Fisheries Act</i>, the Northern Territory Fisheries Regulations, and the Mud Crab Fishery Management Plan.</p> <p>The Mud Crab Fishery Management Plan was accredited in September 2002. The department considers that the management regime for the NT Mud Crab Fishery requires operators to take all reasonable steps to ensure members of listed migratory species are not killed or injured as a result of the fishing.</p> <p>Currently, given the selective nature of the fishing gear used, evidence suggests that the NT Mud Crab Fishery only has minimal interactions, if any, with listed migratory species or a population of that species. Therefore, the department considers the current operation of the NT Mud Crab Fishery is not likely to adversely affect the conservation status of a listed migratory species or a population of that species.</p>

Part 13 (cont.)

Division 3 Whales and other cetaceans Section 245 Minister may accredit plans or regimes	The department's assessment of the NT Mud Crab Fishery
<p>(1) Minister may, by instrument in writing, accredit for the purposes of this Division:</p> <p class="list-item-l1">(c) For State Fisheries: a plan of management, or a policy, regime or any other arrangement, for a fishery that is:</p> <p class="list-item-l2">i. made by a State or self-governing Territory; and</p> <p class="list-item-l2">ii. in force under a law of the State or self-governing Territory;</p> <p>if satisfied that:</p> <p class="list-item-l1">(f) the plan, regime or policy requires persons engaged in fishing under the plan, regime or policy to take all reasonable steps to ensure that cetaceans are not killed or injured as a result of the fishing; and</p> <p class="list-item-l1">(g) the fishery to which the plan, regime or policy relates does not, or is not likely to, adversely affect the conservation status of a species of cetacean or a population of that species.</p>	<p>The NT Mud Crab Fishery is managed under the Northern Territory <i>Fisheries Act</i>, the Northern Territory Fisheries Regulations, and the Mud Crab Fishery Management Plan.</p> <p>The Mud Crab Fishery Management Plan was accredited in September 2002. The department considers that the management regime for the NT Mud Crab Fishery requires operators to take all reasonable steps to ensure whales and other cetaceans are not killed or injured as a result of the fishing.</p> <p>Currently, given the selective nature of the fishing gear used, evidence suggests that the NT Mud Crab Fishery only has minimal interactions, if any, with whales and other cetaceans. Therefore, the department considers the current operation of the NT Mud Crab Fishery is not likely to adversely affect the conservation status of a species of cetacean or a population of that species.</p>

Part 13 (cont.)

Division 4 Listed marine species Section 265 Minister may accredit plans or regimes	The department's assessment of the NT Mud Crab Fishery
<p>(1) Minister may, by instrument in writing, accredit for the purposes of this Division:</p> <p class="list-item-l1">(c) For State Fisheries: a plan of management, or a policy, regime or any other arrangement, for a fishery that is:</p> <p class="list-item-l2">i. made by a State or self-governing Territory; and</p> <p class="list-item-l2">ii. in force under a law of the State or self-governing Territory;</p> <p>if satisfied that:</p> <p class="list-item-l1">(f) the plan, regime or policy requires persons engaged in fishing under the plan, regime or policy to take all reasonable steps to ensure that members of listed marine species are not killed or injured as a result of the fishing; and</p> <p class="list-item-l1">(g) the fishery to which the plan, regime or policy relates does not, or is not likely to, adversely affect the conservation status of a listed marine species or a population of that species.</p>	<p>The NT Mud Crab Fishery is managed under the Northern Territory <i>Fisheries Act</i>, the Northern Territory Fisheries Regulations, and the Mud Crab Fishery Management Plan.</p> <p>The Mud Crab Fishery Management Plan was accredited in September 2002. The department considers that the management regime for the NT Mud Crab Fishery requires operators to take all reasonable steps to ensure members of listed marine species are not killed or injured as a result of the fishing.</p> <p>Currently, given the selective nature of the fishing gear used, evidence suggests that the NT Mud Crab Fishery only has minimal interactions, if any, with listed marine species. Therefore, the department considers the current operation of the NT Mud Crab Fishery is not likely to adversely affect the conservation status of a listed marine species or a population of that species.</p>

Part 13 (cont.)

Section 303AA Conditions relating to accreditation of plans, regimes and policies	The department's assessment of the NT Mud Crab Fishery
(1) This section applies to an accreditation of a plan, regime or policy under section 208A, 222A, 245 or 265.	The department recommends that the management regime for the NT Mud Crab Fishery be accredited under sections 208A, 222A, 245 and 265.
(2) The Minister may accredit a plan, regime or policy under that section even though he or she considers that the plan, regime or policy should be accredited only: (a) during a particular period; or (b) while certain circumstances exist; or (c) while a certain condition is complied with. In such a case, the instrument of accreditation is to specify the period, circumstances or condition.	The department considers that no conditions are required for the accreditation of the management regime for the NT Mud Crab Fishery under Part 13.
(7) The Minister must, in writing, revoke an accreditation if he or she is satisfied that a condition of the accreditation has been contravened.	

Part 13A

Section 303BA Objects of Part 13A

(1) The objects of this Part are as follows:

- (a) to ensure that Australia complies with its obligations under CITES² 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.

² Convention on International Trade in Endangered Species of Wild Fauna and Flora

Section 303DC Minister may amend list	The department's assessment of the NT Mud Crab 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>(1A) 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, the Minister must rely primarily on the outcomes of any assessment in relation to the fishery carried out for the purposes of Division 1 or 2 of Part 10.</p>	<p>No assessment of the NT Mud Crab Fishery has been carried out under Part 10 of the EPBC Act.</p>
<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 NT Mud Crab Fishery until 22 September 2017 would be consistent with the provisions of Part 13A as:</p> <ul style="list-style-type: none"> ▪ the fishery will not harvest any Convention on International Trade in Endangered Species of Wild Fauna and Flora (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 NT Mud Crab Fishery is unlikely to be unsustainable and threaten biodiversity within the next 5 years, and the Environment Protection and Biodiversity Conservation Regulations 2000 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. The application from the NT DPIF was released for public comment from 20 July 2012 to 23 August 2012. The public comment period sought comment on:</p> <ul style="list-style-type: none"> ▪ the proposal to amend the list of exempt native specimens to include product derived from the NT Mud Crab Fishery, ▪ the NT DPIF application for the NT Mud Crab Fishery. <p>No comments were received.</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 NT Mud Crab Fishery made under section 303DC will be gazetted and made available on the department's website.</p>

Part 16

Section 391 Minister must consider precautionary principle in making decisions	The department's assessment of the NT Mud Crab 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.	Having regard to the precautionary management measures in place in these fisheries, summarised in Table 1, the department considers that the precautionary principle has been accounted for in the preparation of advice in relation to a decision 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.	

Part 12

Section 176 Bioregional Plans	The department's assessment of the NT Mud Crab Fishery
(5) Subject to this Act, the Minister must have regard to a bioregional plan in making any decision under this Act to which the plan is relevant.	The <i>Marine bioregional plan for the North Marine Region</i> has been considered in the preparation of advice in relation to decisions under section 303DC and section 303FN. Due to the minimal impacts of the fishery on the benthic environment and low bycatch, it is considered unlikely that the conservation values of the North Marine Region would be impacted by the fishery.

The Department of Sustainability, Environment, Water, Population and Communities' final recommendations to the Northern Territory (NT) Department of Primary Industry and Fisheries (DPIF) for NT Mud Crab Fishery

The material submitted by NT DPIF indicates that the NT Mud Crab Fishery operates in accordance with the Australian Government *Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition*.

Since the previous Australian Government assessment of the NT Mud Crab Fishery, DPIF has:

- conducted an Ecological Risk Assessment for the fishery, which did not identify any issues of high risk to the ecologically sustainable management of the fishery
- conducted a compliance risk assessment for the fishery, which identified unauthorised use of gear and failure to keep accurate log book records as the highest priorities, and developed strategies to address the risks
- carried out a survey of recreational and Indigenous take and will use the results to inform decisions made regarding recreational fisheries management, and
- strengthened penalties for non-compliance.

Management controls include:

- minimum legal size limits applying to commercial and recreational fishers
- a prohibition on the take of all berried female mud crabs for commercial and recreational fishers
- gear restrictions
- limited entry (restricted to 49 transferable licences)
- possession limits for recreational fishers, and
- area closures.

The department considers that the management measures employed in the NT Mud Crab Fishery are sufficient to ensure that the fishery is conducted in a manner that does not lead to over-fishing, and that stocks are not currently over-fished.

Taking into account the management measures for the NT Mud Crab fishery, and the minimal byproduct and bycatch, the department considers that fishing operations in the NT Mud Crab Fishery are managed to minimise their impact on the structure, productivity, function and biological diversity of the ecosystem.

The department considers that product taken in the NT Mud Crab Fishery should be included in the list of exempt native specimens under Part 13A of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) until 22 September 2017. To ensure that the decisions for the NT Mud Crab Fishery under the EPBC Act continue to be valid, the recommendations listed in Table 4 have been made.

Table 4: Northern Territory (NT) Mud Crab Fishery Assessment – Summary of Issues and Recommendations September 2012

	Issue	Condition/Recommendation
1	<p><u>General Management</u></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>Recommendation 1:</p> <p>Operation of the NT Mud Crab Fishery will be carried out in accordance with the management arrangements in force under the Northern Territory <i>Fisheries Act</i> and the Northern Territory Fisheries Regulations.</p> <p>Recommendation 2:</p> <p>The Northern Territory Department of Primary Industry and Fisheries to inform the Department of Sustainability, Environment, Water, Population and Communities of any intended amendments to the NT Mud Crab Fishery's management arrangements that may affect the criteria on which EPBC Act decisions are based.</p>
2	<p><u>Annual reporting</u></p> <p>It is important that reports be produced and presented to the Department of Sustainability, Environment, Water, Population and Communities 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 export status period (5 years).</p>	<p>Recommendation 3:</p> <p>The Northern Territory Department of Primary Industry and Fisheries 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>

	<p>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>	
3.	<p><u>Estimates of Recreational and Indigenous take</u></p> <p>To ensure the sustainability of a fishery, the <i>Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition</i>, requires that there is a reliable information collection system in place, appropriate to the scale of the fishery and that there is a robust assessment of the status of the species, including a review of the process and data collected.</p> <p>A comprehensive 12 month recreational fishing survey concluded in the Northern Territory at the end of 2010. The survey obtained data on recreational participation rates, catches, fishing effort, expenditure and attitudes. DPIF has advised that the survey data is being analysed in 2012 and the final report is in preparation. This report will provide input to revised recommendations and management arrangements applying to recreational fishing in the Northern Territory.</p> <p>DPIF has also advised that accurate data relating to Indigenous take of mud crabs in the fishery has not been available to date and as such, DPIF will continue to investigate appropriate methods in regard to obtaining this data.</p> <p>Given that there is a need for improvement in the collection and recording of recreational and Indigenous take of mud crabs, the department recommends that once the above report is finalised, DPIF should factor these estimates into future stock assessments and management arrangements to ensure the future sustainability of catch levels within the fishery.</p>	<p>Recommendation 4:</p> <p>After considering the final report of the 2010 recreational fishing survey, the Northern Territory Department of Primary Industry and Fisheries to:</p> <ol style="list-style-type: none"> revise the stock assessment for the fishery, taking account of the findings of the 2010 recreational fishing survey, review the management arrangements and implement new arrangements as necessary, to ensure the continued sustainability of the fishery, and continue to investigate appropriate methods of obtaining data on Indigenous take.

References

Department of Sustainability, Environment, Water, Population and Communities (2012) *Marine bioregional plan for the North Marine Region*

Northern Territory Government's Department of Regional Development, Primary Industry, Fisheries and Resources (2009) *Ecological risk assessment of the Northern Territory mud crab fishery*

Acronyms

CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
DPIFM	Northern Territory Department of Primary Industry, Fisheries and Mines
DPIF	Northern Territory Department of Industry and Fisheries (formerly DPIFM)
DSEWPAC	Department of Sustainability, Environment, Water, Population and Communities
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
ERA	Ecological Risk Assessment
NT	Northern Territory
TEP	Threatened, Endangered or Protected