



**Australian Government**

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**Department of the Environment, Water, Heritage and the Arts**

Assessment of the  
**Western Australia Beche-de-mer Fishery**

December, 2007

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This document is an assessment carried out by the Department of the Environment, Water, Heritage and the Arts of a commercial fishery against the Australian Government *Guidelines for the Ecologically Sustainable Management of Fisheries – 2<sup>nd</sup> Edition*. It forms part of the advice provided to the Minister for the Environment, Heritage and the Arts 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 the Environment, Heritage and the Arts or the Australian Government.

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**Table 1: Summary of the Western Australia (WA) Beche-de-mer Fishery (BDMF)**

<p><b>Publicly available information relevant to the fishery</b></p>	<ul style="list-style-type: none"> <li>• <i>WA Fish Resources Management Act 1994</i></li> <li>• <i>WA Fish Resources Management Regulations 1995</i></li> <li>• <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)</li> <li>• Department of Environment and Heritage <i>Assessment of the Western Australian Beche-de-mer Fishery 2004</i> (2004 Assessment)</li> <li>• Department of Fisheries Western Australia (DFWA) <i>Final Application to Australian Government Department of the Environment and Heritage on the Beche-de-mer Fishery, August 2004</i> (DFWA 2004 Submission)</li> <li>• <i>DFWA State of the Fisheries Report 2004/05</i></li> <li>• <i>DFWA State of the Fisheries Report 2005/06</i></li> </ul>
<p><b>Area</b></p>	<p>All waters adjacent to WA (with the exception of specific areas where fishing is prohibited) – Harvest primarily occurs in waters north from Exmouth Gulf to the Northern Territory (NT) border, but also occurs around Shark Bay.</p>
<p><b>Fishery status</b></p>	<p>The WA Beche-de-mer Fishery (BDMF) is a developmental fishery and as such, the stock status is difficult to determine. However, based on a biomass dynamics model, introduced in 2004, the target species are being taken at or below its maximum sustainable yield (MSY).</p>
<p><b>Target Species</b></p>	<p>Six species of beche-de-mer including:</p> <ul style="list-style-type: none"> <li>• <i>Holothuria scabra</i> (sandfish)</li> <li>• <i>H. fuscogilva</i> (white teat fish) (previously reported as <i>H. nobilis</i>)</li> <li>• <i>H. whitmaei</i> (black teat fish)</li> <li>• <i>Thelenota ananas</i> (prickly red fish)</li> <li>• <i>Actinopyga echninites</i> (deep water red fish)</li> <li>• <i>H. atra</i> (lolly fish)</li> </ul> <p>Information on the biology of these species can be found in the then, Department of the Environment and Heritage 2004 Assessment, available on the Department of the Environment, Water, Heritage and the Arts (DEWHA) website.</p> <p>Preliminary analysis of data from the recently implemented daily catch and effort logbooks, shows that 99% of the catch is sandfish (<i>H. scabra</i>).</p>
<p><b>Byproduct Species</b></p>	<p>None.</p>
<p><b>Gear</b></p>	<p>Hand collection by diving or wading in shallow waters.</p>
<p><b>Season</b></p>	<p>Year round, generally during neap tides (strong currents and poor visibility resulting from extreme tidal ranges renders fishing impossible at other times of the month).</p>
<p><b>Commercial harvest</b></p>	<p>In 2005, the total harvest by the fishery was 78 tonnes (t), which is similar to the total annual catch recorded since 2000. The catch-per-unit-effort (CPUE) has also remained relatively constant since 1998, with higher catch rates recorded in the initial years of the fishery.</p>

	<p>The 2005 biomass dynamics modelling for BDMF indicated a MSY of around 97 t, a slight decline from the 2004 estimate of 110 t.</p> <p>While six species of beche-de-mer are retained by the fishery, preliminary analysis of data from the recently implemented daily catch and effort logbooks shows that 99% of the catch is sandfish (<i>H. scabra</i>).</p>
<b>Value of commercial harvest</b>	The estimated commercial harvest in 2005 was \$622,000 – based on an average product price of \$8/kg live weight.
<b>Take by other sectors</b>	<p>No recreational take.</p> <p>An exemption to harvest beche-de-mer was granted to an Aboriginal community, which expired in 2005. Currently, there is no known indigenous take.</p> <p>Take by illegal, unreported and unregulated fishing in WA waters, is largely unknown. However, in December 2007, foreign fishermen were apprehended in Northern Territory waters with over 100 kg of beche-de-mer on board. While at the time of this report it was uncertain where the beche-de-mer was taken, it demonstrates foreign fishers are targeting beche-de-mer in northern Australian waters.</p>
<b>Commercial licences issued</b>	Six authorisations to operate in the fishery, which are currently held or controlled by a single operator.
<b>Management arrangements</b>	<p>Since its commencement the fishery has been managed through Fishing Boat Licence Conditions which allow the take of beche-de-mer, under the WA <i>Fish Resources Management Act 1994</i> and WA <i>Fish Resources Management Regulations 1995</i>. Additional controls are utilised including:</p> <p><u>Input controls</u></p> <ul style="list-style-type: none"> <li>• Limited entry (six endorsements, currently held or controlled by one operator);</li> <li>• Gear restrictions (harvest by hand only);</li> <li>• Limits on the number of divers operating under each endorsement (4 divers harvesting at any one time); and</li> </ul> <p><u>Output controls</u></p> <ul style="list-style-type: none"> <li>• Species-specific minimum legal size limits.</li> </ul>
<b>Export</b>	Exported to Asia after processing.
<b>Bycatch</b>	Due to the highly selective method of fishing, minimal interactions with other species occur.
<b>Interaction with Protected Species</b>	<p>Due to the highly selective and benign method of fishing used, minimal interactions with protected species occur.</p> <p>The daily reporting logbook, recently introduced into the fishery, allows fishers to record any interactions with protected species should they occur.</p>
<b>Ecosystem Impacts</b>	<p>Due to the highly selective method of fishing used, impacts to the physical ecosystem are negligible.</p> <p>In addition, impacts on the foodweb are unlikely given that take of the target species is limited and spread over a wide region.</p>

	<p>Preliminary evidence suggests that beche-de-mer species, in general, play an important role in maintaining the health of benthic marine ecosystems, including seagrass beds. While the current operation of the BDMF is unlikely to impact the ecosystem in which it operates, further development and expansion of the fishery may require improved knowledge and understanding of the impacts to the ecosystem from harvest of beche-de-mer.</p>
<p><b>Impacts on World Heritage property/RAMSAR site</b></p>	<p>The assessment also considered the possible impacts on the World Heritage values of the Shark Bay World Heritage Area, and the ecological character of RAMSAR sites at Eighty-mile Beach, Roebuck Bay and Ord River Floodplain.</p> <p>The BDMF uses a highly selective method of fishing, and has a low level of spatial overlap with these World Heritage and RAMSAR sites. On this basis DEWHA considers that an action taken by an individual fisher, acting in accordance with the management arrangements of the BDMF, would not be expected to have a significant impact on a matter protected by the EPBC Act.</p>

**Table 2: Progress in implementation of conditions and recommendations made in the 2004 assessment of the WA BDMF**

Condition	Progress	Recommended Action
<p>1. Operation of the fishery will be carried out in accordance with the management regime made under the <i>WA Fish Resources Management Regulations 1995</i> in force under the <i>WA Fish Resources Management Act 1994</i>.</p>	<p>Since 2004, the operation of the fishery has continued in accordance with management regime for the BDMF in place under the <i>WA Fish Resources Management Regulations 1995</i> in force under the <i>WA Fish Resources Management Act 1994</i>.</p>	<p>Ongoing, generic condition (<b>Condition 1</b>, Table 4).</p>
<p>2. The Department of Fisheries Western Australia (DFWA) will advise the Department of the Environment and Heritage (DEH) of any material change to the Beche-de-mer Fishery's legislated management plan and/or arrangements that could affect the criteria on which <i>Environment Protection and Biodiversity Conservation Act 1999</i> decisions are based, within three months of that change being made.</p>	<p>DFWA have advised that there have been no changes to the management regime for the BDMF since the 2004 assessment.</p>	<p>Ongoing, generic condition (<b>Condition 2</b>, Table 4).</p>
<p>3. Reports to be produced and presented to DEH annually, and to include:</p> <ul style="list-style-type: none"> <li>• information sufficient to allow assessment of the progress of DFWA's in implementing the recommendations made in the <i>Assessment of the Western Australian Beche-de-mer Fishery 2004</i>;</li> <li>• a description of the status of the fishery and catch and effort information;</li> <li>• a statement of the performance of the fishery against objectives, performance indicators and measures once developed; and</li> <li>• research undertaken or completed relevant to</li> </ul>	<p>The 2004/05 and 2005/06 <i>State of the Fisheries Report</i> (SOFR) produced by DFWA, details the status and performance of the BDMF and other relevant information since the 2004 assessment.</p>	<p>Ongoing, generic condition (<b>Condition 3</b>, Table 4).</p> <p>DFWA to note that information additional to that provided in the SOFR, may also be required. For example, to demonstrate the annual progress of the BDMF in implementing the recommendations and conditions from the latest export accreditation of the fishery, more specific information, additional to that provided in the SOFR, may be required.</p>

the fishery.		
<b>Recommendation</b>	<b>Progress</b>	<b>Recommended Action</b>
1. DFWA to advise DEH of any material change to the WA BDMF's legislated management plan and/or arrangements that could affect the criteria on which EPBC decisions are based, within three months of that change being made.	See Condition 2, Table 2	Ongoing, generic condition ( <b>Condition 2</b> , Table 4).
2. DFWA to ensure, where appropriate, that any relevant indigenous and conservation groups interests in the fishery are considered through consultative mechanisms throughout the development of the fishery.	<p>DFWA have advised that no issues have arisen in the BDMF that require consultation with conservation or indigenous groups since the 2004 assessment.</p> <p>DEWHA considers that these groups should be consulted on all issues relating to the management of the fishery, especially in the context of the formal review of management arrangements by DFWA, to occur in the next 2 – 3 years.</p> <p>DEWHA acknowledges that DFWA is currently reviewing its consultative structures and processes across the state, with a view to providing more effective engagement of a broader range of stakeholder groups. DFWA have indicated that this review will be finalised by mid-2008.</p>	<p>Ongoing amended recommendation.</p> <p>As part of DFWA's formal review of management arrangements for the BDMF, DEWHA has identified the need for consideration of indigenous and conservation groups interests during this process (<b>Recommendation 1</b>, Table 4).</p>
3. The ESD Report, including all performance measures, responses and information requirements to be incorporated into the management regime and decision making process.	In the DFWA 2004 Submission, DFWA advised DEWHA that it proposed to formally publish the management objectives and performance measures for the fishery in a series of ministerial guidelines. DFWA have since advised that the original intention to incorporate this requirement into Ministerial Policy Guidelines is no longer appropriate. DFWA are currently considering alternative options to ensure the management	<p>DEWHA understand that the full ESD report referred to in the DFWA 2004 Submission, is unlikely to be completed, and DFWA are considering alternative options to ensure management arrangements remain documented, publicly available and transparent.</p> <p>For the BDMF, DEWHA expects these</p>

	<p>objectives, framework and issues associated with the fishery are transparent and publicly available.</p> <p>DFWA continues to report against performance measures detailed in the ESD report (provided as part of DFWA's 2004 submission) in its annual SOFR, which is tabled in Parliament under legislative requirements of the <i>WA Fish Resources Management Act 1994</i>.</p> <p>Triggered performance measures are reviewed annually in February between DFWA and industry, to consider reasons for the trigger and if fishing effort and/or management arrangements need to be adjusted.</p>	<p>issues will be addressed as part of the formal review of management arrangements and performance measures (<b>Recommendation 1 &amp; 2</b>, Table 4).</p>
<p>4. DFWA to develop and implement a compliance risk assessment for the WABDMF and implement a compliance strategy to address any identified risks.</p>	<p>To date, no compliance risk assessment has been undertaken for the BDMF. DFWA have indicated that they intend to complete one in due course.</p>	<p>Ongoing recommendation (<b>Recommendation 5</b>, Table 4).</p>
<p>5. DFWA in its <i>Annual State of the Fisheries Report</i>, to report in the performance of the fishery against performance measures that relate to the sustainability of the fishery.</p>	<p>A description of the status of the BDMF, catch and effort information, performance of the fishery against performance measures and relevant research and monitoring, is provided by DFWA in its 2004/05 and 2005/06 SOFR.</p>	<p>Met and ongoing.</p> <p>Reporting requirements are now a generic condition for all WTO fisheries (<b>Condition 3</b>, Table 4).</p>
<p>6. Within 6 months DFWA to implement a revised logbook, inclusive of species specific data, to provide more reliable and comprehensive data for fishery management.</p>	<p>DFWA, in collaboration with industry have developed and trialled a daily logbook for the BDMF. The logbook is now mandatory and preliminary analysis has already revealed new information on stock structure and species composition of total catch.</p> <p>DEWHA commend DFWA and industry for the progress on the BDMF's logbook program, and</p>	<p>Complete.</p>

	consider its implementation and ongoing use as a key tool to improve the ecologically sustainable management of the fishery.	
7. DFWA to cooperate with other jurisdictions in efforts to undertake research on key gaps in the understanding of beche-de-mer biology and ecology.	<p>In its annual SOFR, DFWA has identified several areas for further research on beche-de-mer biology and ecology and that, resources permitting, additional studies are desirable.</p> <p>DFWA has advised that they are currently involved in discussions with NT government and industry about collaborative research priorities, which include stocks surveys and size-at-maturity research to establish whether size-limits are appropriate. Priorities from these discussions have been set, and resource requirements are now being drafted. Progress will depend on future funding, however it is noted that this industry has already attained research grants (see <a href="http://www.seafoodcrc.com.au">http://www.seafoodcrc.com.au</a>) and the outcomes will inform management in the BDMF.</p>	<p>Ongoing amended recommendation (<b>Recommendation 4</b>, Table 4).</p> <p>Understanding of the basic biology and ecology of beche-de-mer is fundamental to the ecologically sustainable management of beche-de-mer fisheries across Australia. Significant knowledge gaps still exist and DEWHA commends and encourages the continuation of collaborative research between agencies and industry.</p>
8. Within 2 years DFWA to implement data validation mechanisms to ensure that current information collected on the catch and effort patterns within the fishery is available to adequately inform management.	<p>The daily logbook (now mandatory) used by fishers greatly improves the nature and standard of data collected for the BDMF.</p> <p>However, no fishery independent data is collected for the BDMF, and as such robust and reliable fishery dependent data is vital for the sustainable management of the fishery.</p>	<p>DEWHA recommends DFWA, as part of its compliance risk assessment (<b>Recommendation 5</b>, Table 4), consider the accuracy, robustness and reliability of information provided by fishers on the catch and effort used to inform the management of the BDMF.</p>
9. DFWA to obtain estimates of sustainable harvest levels for key target species in the fishery.	<p>DFWA have developed a biomass dynamics model for the BDMF. In 2005, the model indicated a MSY of 97 t, after a MSY of 110 t in 2004.</p>	<p>DFWA have indicated that improved fine scale data will enable the biomass dynamics model to be completed for individual fishing blocks. This will</p>

	The biomass dynamics model is a recent management tool for the BDMF and will continue to be refined as more detailed catch and effort data is provided through the daily logbook reporting.	provide finer resolution of the potential yield of the target species and assist in the prevention of localised and serial depletion, an improvement DEWHA strongly endorses.
10. Within 18 months DFWA to review performance measures to take into account the best available information on sustainable harvest levels for the beche-de-mer fishery, implement species specific performance measures and revise the management response for the fishery to provide clear timeframes for the implementation of management action if a performance measure is exceeded.	DFWA indicated that previously, catch and effort data was not being collected at a fine enough scale to conduct such a review. However, DFWA also indicated that improved daily catch and effort data over-time, should provide adequate data for DFWA to consider developing and implementing species-specific indicators and performance measures for the fishery.	Ongoing amended recommendation ( <b>Recommendation 1 &amp; 2</b> , Table 4).  Aspects of this review process, such as revision of management responses, will also be addressed as part of DFWA's formal review of management arrangements.
11. DFWA to develop and implement within 18 months, measures to minimise localised depletion and serial depletion in the fishery.	DFWA have indicated that previous catch and effort data has been too coarse to allow an appropriate investigation of localised and serial depletion in the BDMF. However, preliminary analysis of recent fine scale data by DFWA has provided some new information, including the identification of five different stock areas. As more fine scale data is obtained the data and information produced to guide management of the fishery will also improve.	Ongoing amended recommendation ( <b>Recommendation 3</b> , Table 4).  DEWHA recommends DFWA continue to improve its knowledge and management of beche-de-mer stocks, to minimise localised and serial depletion in the fishery.
12. Within 2 years DFWA to review the current size limits on all target species to ensure that they are set in a precautionary manner consistent with available research on the size at first maturity of beche-de-mer species.	DFWA have advised that they are currently involved in discussions with NT government and Beche-de-mer industry about collaborative research priorities, which include size-at-maturity research to establish whether size-limits are appropriate.	Ongoing amended recommendation.  This issue has been incorporated into a broader recommendation ( <b>Recommendation 4</b> , Table 4) regarding research in the BDMF.

	<p>DFWA also note that the soft-bodies of beche-de-mer means that it is difficult to accurately measure their length. Industry and DFWA are working together to try and achieve a practical solution to this problem, to assess and ensure the effectiveness of legal minimum lengths as a management tool.</p>	
<p>13. DFWA to provide a mechanism which allows fishers to record interactions with protected/listed species. DFWA to ensure that industry has the capacity to make these reports at an appropriate level of accuracy.</p>	<p>The daily logbooks allow fishers to report any interactions with protected species.</p>	<p>A Memorandum of Understanding between DFWA and DEWHA for the Reporting of Fisheries Interactions with Protected Species is currently being negotiated to streamline reporting requirements for interactions with protected species, assisting fishers in meeting their requirements under the EPBC Act.</p>

**Table 3: DEWHA assessment of the WA BDMF 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 DEWHA website.

<b>Part 13</b>	
<b>Division 1 Listed threatened species Section 208A Minister may accredit plans, regimes or policies</b>	<b>DEWHA assessment of the BDMF</b>
<p>(1) Minister may, by instrument in writing, accredit for the purposes of this Division:</p> <ul style="list-style-type: none"> <li>(c) a plan of management, or a policy, regime or any other arrangement, for a fishery that is:               <ul style="list-style-type: none"> <li>i. made by a State or self-governing Territory; and</li> <li>ii. in force under a law of the State or self-governing Territory;</li> </ul> </li> </ul> <p>if <b>satisfied</b> that:</p> <ul style="list-style-type: none"> <li>(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 (other than conservation dependent species) are not killed or injured as a result of the fishing; and</li> <li>(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.</li> </ul>	<p>The management regime for the BDMF in place under the <i>WA Fish Resources Management Regulations 1995</i> in force under the <i>WA Fish Resources Management Act 1994</i>, was accredited in December 2004. The management arrangements for the BDMF have not significantly changed since this accreditation was granted. Consequently, a new Part 13 declaration is not needed at this time.</p> <p>In accrediting this plan, DEWHA considered that the management regime for the BDMF requires that all reasonable steps are taken to avoid the killing or injuring of listed threatened species. DEWHA also considers that the fishery does not, or is not likely to, adversely affect the survival in nature of listed threatened species or populations of that species.</p>

<p><b>Division 2 Migratory species</b>  <b>Section 222A Minister may accredit plans, regimes or policies</b></p>	<p><b>DEWHA assessment of the BDMF</b></p>
<p>(1) Minister may, by instrument in writing, accredit for the purposes of this Division:</p> <ul style="list-style-type: none"> <li>(c) a plan of management, or a policy, regime or any other arrangement, for a fishery that is: <ul style="list-style-type: none"> <li>i. made by a State or self-governing Territory; and</li> <li>ii. in force under a law of the State or self-governing Territory;</li> </ul> </li> </ul> <p>if <b>satisfied</b> that:</p> <ul style="list-style-type: none"> <li>(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</li> <li>(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.</li> </ul>	<p>The management regime for the BDMF in place under the <i>WA Fish Resources Management Regulations 1995</i> in force under the <i>WA Fish Resources Management Act 1994</i>, was accredited in December 2004. The management arrangements for the BDMF have not significantly changed since this accreditation was granted. Consequently, a new Part 13 declaration is not needed at this time.</p> <p>In accrediting this plan, DEWHA considers that the management regime for the BDMF requires that all reasonable steps are taken to avoid the killing or injuring of listed migratory species. DEWHA also considers that the fishery does not, or is not likely to, adversely affect the survival in nature of listed migratory species or populations of those species.</p>
<p><b>Division 3 Whales and other cetaceans</b>  <b>Section 245 Minister may accredit plans, regimes or policies</b></p>	<p><b>DEWHA assessment of the BDMF</b></p>
<p>(1) Minister may, by instrument in writing, accredit for the purposes of this Division:</p> <ul style="list-style-type: none"> <li>(c) a plan of management, or a policy, regime or any other arrangement, for a fishery that is: <ul style="list-style-type: none"> <li>i. made by a State or self-governing Territory; and</li> <li>ii. in force under a law of the State or self-governing Territory;</li> </ul> </li> </ul> <p>if <b>satisfied</b> that:</p>	<p>The management regime for the BDMF in place under the <i>WA Fish Resources Management Regulations 1995</i> in force under the <i>WA Fish Resources Management Act 1994</i>, was accredited in December 2004. The management arrangements for the BDMF have not significantly changed since this accreditation was granted. Consequently, a new Part 13 declaration is not needed at this time.</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 cetaceans 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 species of cetacean or a population of that species.</p>	<p>In accrediting this plan, DEWHA considers that the management regime for the BDMF requires that all reasonable steps are taken to avoid the killing or injuring of whales and other cetaceans. DEWHA also considers that the fishery does not, or is not likely to, adversely affect the survival in nature of whales and other cetaceans or populations of those species.</p>
<p><b>Division 4 Listed marine species</b>  <b>Section 265 Minister may accredit plans, regimes or policies</b></p>	<p><b>DEWHA assessment of the BDMF</b></p>
<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> <p>i. made by a State or self-governing Territory; and</p> <p>ii. in force under a law of the State or self-governing Territory;</p> <p>if <b>satisfied</b> 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 marine 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 marine species or a population of that species.</p>	<p>The management regime for the BDMF in place under the WA <i>Fish Resources Management Regulations 1995</i> in force under the WA <i>Fish Resources Management Act 1994</i>, was accredited in December 2004. The management arrangements for the BDMF have not significantly changed since this accreditation was granted. Consequently, a new Part 13 declaration is not needed at this time.</p> <p>In accrediting this plan, DEWHA considers that the management regime for the BDMF requires that all reasonable steps are taken to avoid the killing or injuring of listed marine species. DEWHA also considers that the fishery does not, or is not likely to, adversely affect the survival in nature of listed marine species or populations of that species.</p>

## Part 13A

Section 303DC Minister may amend list	DEWHA assessment of the BDMF
<p>(1) Minister may, by instrument in 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"><li>(a) including items in the list; or</li><li>(b) deleting items from the list; or</li><li>(c) imposing a condition or restriction to which the inclusion of a specimen in the list is subject; or</li><li>(d) varying of revoking a condition or restriction to which the inclusion of a specimen in the list is subject; or</li><li>(e) correcting an inaccuracy or updating the name of a species.</li></ul>	<p>In December 2004, the Delegate of the then Minister for the Environment and Heritage amended the list of exempt native specimens (LENS) established under section 303DB of the EPBC Act by including in the list:</p> <ul style="list-style-type: none"><li>• Specimens that are or are derived from fish or invertebrates, other than specimens that belong to species listed under Part 13 of the Act, taken in the WA Beche-de-mer Fishery.</li></ul> <p>with a notation that inclusion of the specimens in the list is subject to the following restrictions or conditions:</p> <ul style="list-style-type: none"><li>• The specimen, or the fish or invertebrate from which it is derived, was taken lawfully;</li><li>• The specimens are covered by the declaration of an approved Wildlife Trade Operation under Section 303FN of the Act in relation to the fishery.</li></ul>
<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"><li>(a) must consult such other Minister or Ministers as the Minister considers appropriate; and</li><li>(b) must consult such other Minister or Ministers of each State and self-governing Territory as the Minister considers appropriate; and</li><li>(c) may consult such other persons and organisations as the Minister considers appropriate.</li></ul>	<p>Under the EPBC Act, a decision to amend the list of exempt native specimens does not require a public consultation period. However, a public notice, which set out the proposal to grant export approval to the BDMF and included the DFWA 2007 Submission and 2004/05 and 2005/06 <i>State of the Fisheries Report</i> of the BDMF was released for public comment, which closed on 19 November 2007. DEWHA considers that this has provided sufficient opportunity for consultation with other persons and organisations.</p> <p>A letter to the Hon Jon Ford MLC advises him of the intention to declare the fishery an approved WTO under the EPBC Act.</p>
<p>(5) A copy of an instrument made under section 303DC is to be made</p>	<p>The instrument for the BDMF made under sections 303DC is available</p>

available for inspection on the Internet.	on the DEWHA website.
<b>Section 303FN Approved wildlife trade operation</b>	<b>DEWHA assessment of the BDMF</b>
(2) The Minister may, by instrument published in the Gazette, declare that a specified wildlife trade operation is an approved wildlife trade operation 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> <ul style="list-style-type: none"> <li>(a) the operation is consistent with the objects of Part 13A of the Act; and</li> <li>(b) the operation will not be detrimental to: <ul style="list-style-type: none"> <li>i. the survival of a taxon to which the operation relates; or</li> <li>ii. the conservation status of a taxon to which the operation relates; and</li> </ul> </li> <li>(ba) the operation will not be likely to threaten any relevant ecosystem including (but not limited to) any habitat or biodiversity; and</li> <li>(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</li> <li>(d) such other conditions (if any) as are specified in the regulations have been, or are likely to be, satisfied.</li> </ul>	<p>The BDMF is consistent with objects of Part 13A (listed after this table) as:</p> <ul style="list-style-type: none"> <li>• the fishery will not harvest any Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) listed species;</li> <li>• there are management arrangements in place to ensure that the resource is being managed in an ecologically sustainable way (see Table 1);</li> <li>• the operation of the BDMF is unlikely to be unsustainable and threaten biodiversity within the life of the WTO declaration; and</li> <li>• the EPBC Regulations 2000 do not specify fish as a class of animal in relation to the welfare of live specimens.</li> </ul> <p>DEWHA considers that the BDMF will not be detrimental to the survival or conservation status of a taxon to which it relates and will not threaten any relevant ecosystem within the life of the WTO declaration, given the management measures currently in place, which include minimum legal size limits, limited entry (currently six endorsements), gear restrictions (harvest by hand only) and limits on the number of divers operating under each endorsement.</p> <p>No other conditions are specified in relation to commercial fisheries in the EPBC Regulations 2000.</p>

<p>(4) In deciding whether to declare an operation as an approved wildlife trade operation the Minister must have regard to:</p> <ul style="list-style-type: none"> <li>(a) the significance of the impact of the operation on an ecosystem (for example, an impact on habitat or biodiversity); and</li> <li>(b) the effectiveness of the management arrangements for the operation (including monitoring procedures).</li> </ul>	<p>DEWHA considers that the BDMF will not have a significant impact on any relevant ecosystem within the life of the WTO declaration, given the management measures currently in place, which include minimum legal size limits, limited entry (currently six endorsements), gear restrictions (harvest by hand only) and limits on the number of divers operating under each endorsement.</p> <p>The management arrangements that will be employed for the BDMF (as listed in the above paragraph) are likely to be effective. The performance of the BDMF will be reviewed annually, against a series of objectives and performance indicators detailed in the DFWA 2004 Submission.</p>
<p>(5) In deciding whether to declare an operation as an approved wildlife trade operation the Minister must have regard to:</p> <ul style="list-style-type: none"> <li>(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</li> <li>(b) whether the legislation applies throughout the State or Territory concerned; and</li> <li>(c) whether, in the opinion of the Minister, the legislation is effective.</li> </ul>	<p>The BDMF will be managed under the management regime for the BDMF, made under the <i>WA Fish Resources Management Act 1994</i> and the <i>WA Fish Resources Management Regulations 1995</i>.</p> <p>The <i>WA Fish Resources Management Act 1994</i> applies throughout WA state waters. DFWA also manages the fishery in Commonwealth waters under an Offshore Constitutional Settlement (OCS) between the Australian and Western Australian Governments.</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> <ul style="list-style-type: none"> <li>(d) the operation is a commercial fishery.</li> </ul>	<p>The BDMF is a commercial fishery.</p>
<p><b>Section 303FR Public consultation</b></p>	<p><b>DEWHA assessment of the BDMF</b></p>
<p>(1) Before making a declaration under section 303FN, the Minister must cause to be published on the Internet a notice:</p>	<p>DEWHA considers that consultation requirements of the EPBC Act for declaring a WTO have been met. A public notice, which set out the</p>

<p>(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  (e) inviting persons and organisations to give the Minister, within the period specified in the notice, written comments about the proposal.</p>	<p>proposal to declare the BDMF a WTO and included the DFWA 2007 Submission and 2004/05 and 2005/06 <i>State of the Fisheries Report</i> of the BDMF was released for public comment, which closed on 19 November 2007. One public submission was 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 BDMF a WTO and included the DFWA 2007 Submission, DFWA 2004/05 and 2005/06 State of the Fisheries Report of the BDMF was released for public comment on 22 October and closed on 19 November 2007, a total of 20 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>DEWHA has considered the public comment received on the submission and the response from DFWA, in this assessment of the fishery.</p>
<p><b>Section 303FT Additional provisions relating to declarations</b></p>	<p><b>DEWHA assessment of the BDMF</b></p>
<p>(1) This section applies to a declaration made under section 303FN, 303FO or 303FP.</p>	<p>A declaration for the BDMF will be made under section 303FN.</p>
<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  (b) while certain circumstances exist; or  (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 commercial fishery WTO declaration include:</p> <ul style="list-style-type: none"> <li>• operation in accordance with the management regime;</li> <li>• notifying DEWHA of changes to the management regime; and</li> <li>• annual reporting in accordance with the requirements of the Australian Government <i>Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition</i>.</li> </ul> <p>The WTO instrument for the BDMF specifies the standard conditions</p>

	applied.
(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 Gazette, 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, 303FO or 303FP or this section is to be made available for inspection on the Internet.	The instrument for the BDMF made under sections 303FN and 303FT will be gazetted and made available on the DEWHA website.
<b>Part 16</b>	
<b>Section 391 Minister must consider precautionary principle in making decisions</b>	<b>DEWHA assessment of the BDMF</b>
(1) The Minister must take account of the precautionary principle in making a decision under section 303DC (whether or not to amend the list of exempt native specimens) and/or section 303FN (about declaring an operation to be an approved wildlife trade operation), to the extent he or she can do so consistently with the other provisions of the EPBC Act.	The precautionary principle must be considered when making a decision to include specimens on the LENS.
(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.	

### Objects of Part 13A

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

## **Final Conditions and Recommendations to DFWA for the WA Beche-de-mer Fishery**

The material submitted by DFWA demonstrates that the management arrangements for the BDMF meet most of the requirements of the Australian Government *Guidelines for the Ecologically Sustainable Management of Fisheries – 2<sup>nd</sup> Edition*. DEWHA recognises that the minimum legal size limits, limited entry (currently six endorsements), gear restrictions (harvest by hand only) and limits on the number of divers operating under each endorsement render it somewhat robust to fishing. As such, DEWHA considers that overall the management regime aims to ensure that fishing is conducted in a manner that does not lead to over-fishing and 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, DEWHA has identified a number of risks and uncertainties that must be managed to ensure that impacts are minimised including, but not limited to:

- formal review of management arrangements;
- consideration of species-specific indicators and performance measures;
- addressing potential local and serial depletion of target stocks;
- lack of a compliance risk assessment; and
- need for further research.

DEWHA is satisfied that the developmental fishery will not be detrimental to the survival or conservation status of the taxon to which it relates in the short term. Similarly, it is not likely to threaten any relevant ecosystem in the short term. To contain and minimise the risks in the longer term the recommendations listed below have been made. The key challenges for this fishery will be a review of current management arrangements and possible progression towards a more formal management regime, addressing potential local and serial depletion of target stocks, and improving knowledge of the target species' biology, ecology and stock structure. DEWHA considers that, until it can be demonstrated that these issues have been adequately dealt with, a three year WTO declaration is appropriate.

DEWHA considers that the operation of the fishery does not, or is not likely to, adversely affect the survival in nature of a listed threatened species or population of that species, or the conservation status of a listed migratory species, cetacean or listed marine species or a population of any of those species. DEWHA also considers that under the management plan operators are required to take all reasonable steps to avoid the killing or injuring of protected species, and the level of interaction under current fishing operations is very low. There have also been no changes to the management arrangements since the initial assessment of the fishery. For these reasons, DEWHA considers the accreditation of management arrangements for the BDMF under Part 13 of the EPBC Act in December 2004, remains valid.

Unless a specific time frame is provided in the recommendation each recommendation must be addressed within the life of the declaration (3 years). Note that a standard condition of a WTO is an annual reporting requirement, the details of which are provided in Table 4.

**Table 4: WA BDMF Assessment – Summary of Issues, Conditions and Recommendations, December 2007**

Issue	DEWHA Condition
<p><u>General Management</u></p> <p>Export decisions relate to the arrangements in force at the time of the decision. In order to ensure that these decisions remain valid and export approval continues uninterrupted, DEWHA 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 legislated amendments that may affect sustainability of the target species or negatively impact on by-product, bycatch, protected species or the ecosystem.</p>	<p><b>Condition 1:</b> Operation of the BDMF will be carried out in accordance with the management regime made under the Western Australian <i>Fish Resources Management Act 1994</i>.</p> <p><b>Condition 2:</b> DFWA to advise DEWHA of any intended material change to the BDMF legislated management regime and management arrangements that could affect the criteria on which EPBC Act decisions are based.</p>
<p><u>Annual reporting</u></p> <p>It is important that reports be produced and presented to DEWHA annually in order for the performance of the fishery and progress in implementing the conditions and recommendations in this report and other managerial commitments to be monitored and assessed throughout the life of the declaration.</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 conditions and recommendations resulting from the previous accreditation 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 DEWHA website at <a href="http://www.environment.gov.au/coasts/fisheries/publications/guidelines.html">http://www.environment.gov.au/coasts/fisheries/publications/guidelines.html</a>).</p>	<p><b>Condition 3:</b> DFWA to produce and present reports to DEWHA annually as per Appendix B of the <i>Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition</i>.</p>

Issue	DEWHA Recommendation
<p><u>Formal review of management arrangements</u></p> <p>The BDMF commenced operating in 1995 and since that time has been managed by a condition of WA Fish Boating Licences. Recent catch and effort data indicates the fishery has stabilised since the early years of the fishery, in which higher catch and effort were experienced.</p> <p>Given the stabilisation of the fishery's stocks, and the recent implementation of daily catch and effort logbooks providing improved catch and effort data, DEWHA consider the fishery is well placed to review and refine the management arrangements of the fishery, towards a more formal management regime. This comprehensive review will ensure the current management arrangements are adequate, based on the best available information and maintain precautionary management principles in their application.</p> <p>Additionally, the review should provide for appropriate consultative mechanisms to allow relevant indigenous and conservation groups interests to be considered. The current and future monitoring and research needs of the BDMF also need to be considered, to meet the stock assessment and management information requirements.</p>	<p><b>Recommendation 1:</b> In conjunction with relevant stakeholders, DFWA to conduct a formal review of the BDMF's management arrangements, and implement changes to the management regime, where appropriate.</p>
<p><u>Species-specific indicators and performance measures</u></p> <p>A recommendation was made in the 2004 assessment of the fishery for DFWA to review performance measures to take account of the best available information on sustainable harvest levels and develop and implement species-specific performance measures. DFWA indicated that previously, catch and effort data was not being collected at a fine enough scale to conduct such a review. However, improved daily catch and effort logbooks should provide adequate data for DFWA to consider developing and implementing species-specific indicators and performance measures for the fishery.</p>	<p><b>Recommendation 2:</b> DFWA to review, and where appropriate, develop and implement species-specific indicators and performance measures for the fishery.</p>

<p><u>Localised and serial depletion</u></p> <p>A recommendation was made in the 2004 assessment of the fishery concerning the potential for localised and serial depletion of target stocks in the BDMF. Beche-de-mer are broadcast spawners and if spawning stocks are reduced to below a critical level, then successful recruitment may not occur due to the greater distance between males and females. DEWHA considers that the risk of localised and serial depletion of the target stock and its impact on the wider ecosystem have not been adequately addressed in management arrangements for the fishery.</p> <p>DFWA have undertaken some preliminary investigation in addressing these concerns, but has indicated that data to date has not been adequate. With the implementation of the compulsory research logbooks in the BDMF, more suitable data is being obtained to inform management of the fishery.</p> <p>DEWHA recommends that DFWA continue to develop and implement measures to minimise the risk of localised and serial depletion. Management measures could include zoning and/or seasonal closures during identified spawning periods.</p> <p>In the 2004 and 2007 DFWA submissions, DFWA indicated that the biomass dynamic models for the BDMF may be completed at the level of each fishing block, to provide finer resolution of the potential yield of the target species once fine scale data has been collected. This approach will provide a more accurate picture of stock status at each block level and will assist in the prevention of localised and serial depletion in the fishery. DEWHA therefore continues to support the completion of biomass dynamic models at the level of each fishing block.</p>	<p><b>Recommendation 3:</b> DFWA to continue to develop and implement measures to minimise the risk of localised and serial depletion.</p>
<p><u>Research in the BDMF</u></p> <p>DFWA have indicated that the current level of research on beche-de-mer biology and ecology is not ideal and that, resources permitting, additional studies are desirable.</p>	<p><b>Recommendation 4:</b> DFWA to continue to pursue collaborative research with other jurisdictions and agencies, in order to identify research information needs and priorities to</p>

<p>Information and research needs identified by DFWA requiring additional effort, include;</p> <ul style="list-style-type: none"> <li>• improving knowledge of WA stocks to verify the adequacy of size limits;</li> <li>• utilising fine scale catch and effort reporting data, recently introduced into the fishery, to inform management; and</li> <li>• improving knowledge of beche-de-mer biology and ecology.</li> </ul> <p>In order to ensure the limited resources are utilised most effectively, DEWHA recommends DFWA identifies information gaps and prioritise key research areas for further development of the fishery. These information gaps and research priorities should then be clearly articulated in DFWA’s annual <i>State of the Fisheries Report</i>.</p> <p>DEWHA acknowledges that research priorities will need to be implemented within the constraints of available funds, and considers that continuing collaboration with other jurisdictions and agencies is important to assist and compliment the identified research needs.</p>	<p>meet the management, stock assessment and performance measurement needs of the BDMF.</p>
<p><u>Compliance risk assessment</u></p> <p>A recommendation was made in the 2004 assessment of the fishery for DFWA to conduct a compliance risk assessment. DFWA have indicated that this has not yet taken place, but that it is intended to be completed in due course.</p> <p>The completion of a compliance risk assessment for the fishery will enable DFWA to better direct available resources to further increase the effectiveness of limited enforcement and compliance activities.</p> <p>As part of the compliance risk assessment, DEWHA recommends DFWA consider: the impacts of illegal, unreported and unregulated fishing; compliance with management arrangements (eg. minimum legal size limits maximum number of divers) and fishing area closures (eg. marine parks and reserves); and, accuracy of information used to inform the management of the BDMF (eg. logbook reports of catch and effort).</p>	<p><b>Recommendation 5:</b> DFWA to conduct a compliance risk assessment for the fishery and implement a compliance strategy to address any identified risks.</p>

## Acronyms and Abbreviations

BDMF	WA Beche-de-mer Fishery
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CPUE	Catch per Unit Effort
DEH	Department of the Environment and Heritage (now DEWHA)
DEWHA	Department of the Environment, Water, Heritage and the Arts
DFWA	Department of Fisheries Western Australia
EPBC Act	<i>Environment Protection and Biodiversity Act 1999</i>
LENS	List of exempt native specimens
MSY	Maximum Sustainable Yield
NT	Northern Territory
OCS	Offshore Constitutional Settlement
RAMSAR	The Ramsar Convention on Wetlands
SOFR	State of the Fisheries Report
t	Tonnes
WA	Western Australia
WTO	Wildlife Trade Operation