



Australian Government

Department of the Environment and Water Resources

Assessment of the
**Western Australia Shark Bay Crab (Interim)
Managed Fishery**

NOVEMBER, 2007

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This document is an assessment carried out by the Department of the Environment and Water Resources of a commercial fishery against the Australian Government *Guidelines for the Ecologically Sustainable Management of Fisheries*. It forms part of the advice provided to the Minister for the Environment and Water Resources 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 and Water Resources or the Australian Government.

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Table 1: Summary of the Western Australia Shark Bay Crab (Interim) Managed Fishery

<p>Publicly available information relevant to the fishery</p>	<ul style="list-style-type: none"> • WA <i>Fish Resources Management Act 1994</i> (FRM Act) • WA <i>Fish Resources Management Regulations 1995</i> • WA <i>Shark Bay Crab Fishery (Interim) Management Plan 2005</i> (the Management Plan) • <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) • Department of Fisheries WA (DFWA) Final Application to the Australian Government Department of the Environment and Heritage on the Shark Bay Experimental Crab Fishery, August 2004 • Department of Environment and Heritage Assessment Report 2004 • Department of Fisheries Western Australia State of the Fisheries Report 2003/04 • Department of Fisheries Western Australia State of the Fisheries Report 2004/05 • Department of Fisheries Western Australia State of the Fisheries Report 2005/06
<p>Area</p>	<p>The Shark Bay Crab (Interim) Managed Fishery (SBCIMF) is located in the northern waters of Shark Bay, Western Australia (WA) approximately 800km north of Perth. Shark Bay is a marine embayment covering 13,000km², located in the Gascoyne region. The north-west corner of the SBCIMF area extends into Commonwealth waters. The main fishing zone extends from Quobba Point in the north, to Bernier and Dorre Islands in the west and south to Cape Peron. However, a limited amount of fishing also occurs in the lower gulfs of Shark Bay.</p>
<p>Fishery status</p>	<p>The performance measure for the export of crabs from the SBCIMF requires that the breeding stocks are maintained, as demonstrated by adult crab abundance (catch per unit effort, or CPUE). In 2004/05 the CPUE in the Shark Bay fishery, at 1.61 kg/trap lift, remained above the minimum CPUE of approximately 1 kg/trap lift, which has proved adequate to support recruitment to the SBCIMF.</p> <p>In the 2004 Department DFWA submission, DFWA indicated that acceptable catch ranges were yet to be determined for the SBCIMF as there was insufficient time series data for the commercial fishery to allow ranges to be set, and as a developmental fishery some increase in catch rates were expected. DFWA indicated acceptable catch ranges would be developed, once sufficient catch data became available.</p> <p>Currently, there are no resource concerns for this species.</p>
<p>Target Species</p>	<p>The fishery targets blue swimmer crabs (<i>Portunus pelagicus</i>).</p> <p>Information on the biology of this species can be found in the 2004 assessment of the fishery located on the Department of the Environment and Water Resources' (DEW) website: http://www.environment.gov.au/coasts/fisheries/wa/shark-</p>

	bay/report.html
Byproduct Species	Operators in the SBCIMF are permitted to retain coral crabs (<i>Charybdis cruciata</i>) and sand crabs (<i>Ovalipes australiensis</i>) as byproduct. However, the take of these two species has been negligible.
Gear	<p>The SBCIMF uses purpose-designed crab pots that must be in a series of not less than 20 crab traps joined together by a negatively buoyant rope. Pots are designed to enable the escape of non target species and undersized target species to a size of approximately 120 mm, mainly through a specialised design and through the requirement for escape gaps to be included in all pots used in the SBCIMF.</p> <p>The Shark Bay prawn and scallop trawl fisheries also retain crabs as byproduct. DFWA consider the take of blue swimmer crab by the indigenous and recreational sectors is not significant.</p>
Season	All year.
Commercial harvest 2004/05	In 2004/05 the SBCIMF recorded its highest total catch of 560 tonnes (t), an increase from 401 t caught in 2003/04, and 478 t caught in 2001/02. Effort in Shark Bay increased significantly during 2004/05, with the SBCIMF operators made 347,940 trap lifts over 1,178 days, up from 290,860 trap lifts over 1,047 fishing days during 2003/04.
Value of commercial harvest 2004/05	SBCIMF catch valued at approximately \$ 2.5 million (total WA catch of blue swimmer crab worth \$4.6 million). Beach prices vary between \$4.00 - \$6.00/kg live weight.
Take by other sectors	In 2004/05 the Shark Bay Prawn and Scallop trawl fleet caught 166 t. Recreational fishing surveys in the Gascoyne region was carried out during 1998/99, estimating a recreational blue swimmer crab catch of 968 kg.
Commercial licences issued	Currently 5 operators in the SBCIMF – authorisations issued by exemption and/or permit and conditions on the Fishing Boat Licence.
Management arrangements	<p>The fishery was previously managed under experimental arrangements in force under the <i>Fish Resources Management Act 1994</i>. On 1 December 2005 the Management Plan was gazetted and became the primary legislation governing the SBCIMF.</p> <p>The Management Plan consolidated the former management arrangements that were used to administer the fishery during the last assessment, however the substance of those management arrangements is unchanged.</p> <p>Management of the fishery is based on a mixture of input and output controls. Such controls include:</p> <ul style="list-style-type: none"> • Regulation of the number of licenses; • Spatial restrictions; • Fishing method and gear specifications; • Prohibition on the harvest of berried females; • Restrictions on species retained; and

	<ul style="list-style-type: none"> • Minimum size limit of 127 mm carapace width (CW) for recreational fishers and 135 mm CW for commercial fishers in Shark Bay.
Export	<p>A large proportion of the Shark Bay catch is value added product with an increasing proportion destined for the developing export market.</p> <p>The majority of the product is sold through local and interstate markets. Several Shark Bay fishers have been exploring markets in south-east Asia and value-adding of product on the domestic market.</p>
Bycatch	<p>Considered low. Pots are purpose-designed to minimise the capture of non-target species and are therefore an inefficient way to catch fish, the majority of which are able to escape through the entrance gaps when the pot is soaking or being hauled. Small numbers of fish are infrequently captured in crab pots, but the fishers are not permitted to retain them.</p>
Interaction with Protected Species	<p>The crab trap longline system has little possibility of interacting with protected species such as marine turtles. The impact on protected species is considered to be low.</p>
Ecosystem Impacts	<p>Fishing with traps results in limited habitat disturbance, with only minor dragging of traps on the bottom during trap retrieval. Sand and associated biota do not get brought to the surface in commercial blue swimmer crab traps as the mesh used on traps is sufficiently large to allow the escape of any sand-dwelling macrobenthos. Although seagrasses are occasionally brought to the surface with the trap, the infrequent nature of this occurrence, and the small amount of living seagrass removed, results in minimal habitat damage.</p>
Impacts on World Heritage property	<p>The previous assessment considered the possible impacts on the World Heritage values of the Shark Bay World Heritage Area. Given that areas of Shark Bay are closed to fishing, the SBCIMF is relatively small in scale and the fishing methods are relatively benign, it is considered that the SBCIMF is unlikely to compromise the World Heritage values for which Shark Bay was listed. On this basis DEW considers that an action taken by an individual fisher, acting in accordance with the Management Plan, would not be expected to have a significant impact on the World Heritage values of the Shark Bay World Heritage Area.</p> <p>On this basis DEW considers that an action taken by an individual fisher, acting in accordance with the Management Plan, would not be expected to have a significant impact on a matter protected by the EPBC Act.</p>

Table 2: Progress in implementation of recommendations and conditions made in initial assessment of the then Shark Bay Experimental Crab Fishery (now the SBCIMF).

Condition	Progress	Recommended Action
<p>1. Operation of the fishery will be carried out in accordance with the WA [SBCIMF] management regime in force under the <i>Fish Resources Management Act 1994</i>.</p>	<p>DFWA has advised DEW that the SBCIMF continues to operate in accordance with the management regime in force under the FRM Act. On 1 December 2005, the Management Plan was gazetted and became the primary legislation governing the SBCIMF.</p> <p>The Management Plan consolidates and supersedes the former management arrangements (i.e. the exemptions and conditions on fishing boat licences) that were used to administer the SBCIMF during the last WTO assessment, however the substance of those management arrangements is unchanged.</p>	<p>This condition has been met and will continue to apply as a condition to the new WTO declaration (Condition 1, Table 4).</p>
<p>2. DFWA will inform the Department of the Environment and Heritage (DEH) of any intended amendments to the WA [SBCIMF] management regime that may affect the sustainability of the target species or negatively impact on byproduct, bycatch, protected species or the</p>	<p>DFWA advised DEW that no amendments to the SBCIMF management regime have been made (other than the move to the interim plan), that adversely affect the sustainability of the target species or negatively impact on byproduct, bycatch, protected species or the ecosystem.</p>	<p>This condition has been met and will continue to apply as a condition to the new WTO declaration (Condition 2, Table 4).</p>

ecosystem.		
<p>3. Reports to be produced and presented to DEH annually, and to include:</p> <ul style="list-style-type: none"> • information sufficient to allow assessment of the progress of DFWA in implementing the recommendations made in the <i>Assessment of the Shark Bay Experimental Crab Fishery 2004</i> and the commitments made in the <i>Final Application to the Australian Government Department of the Environment and Heritage on the Shark Bay Experimental Crab Fishery</i>; • A description of the status of the fishery and catch and effort information; • A statement of the performance of the fishery against objectives, performance indicators and measures once developed; and • Research undertaken or completed relevant to the fishery. 	<p>A description of the status of the SBCIMF, catch and effort information, performance of the fishery against objectives and relevant research is reported annually in the Department's State of the Fisheries Report.</p> <p>A more comprehensive review of the fisheries research conducted on the SBCIMF is presented in the final report on FRDC project no. 2001/068 by Bellchambers et al. (2005).</p>	<p>This condition has been met and will continue to apply as a condition to the new WTO declaration (Condition 3, Table 4).</p>

Recommendation	Progress	Recommended Action
<p>1. DFWA to advise DEH of any material change to the [SBCIMF's] legislated management regime that could affect the criteria on which EPBC decisions are based, within three months of that change being made.</p>	<p>Between 1998 and 2005 up to five operators were exempted under section 7 (3) (c) of the FRM Act from a commercial fishing prohibition in the Shark Bay Marine Park for the purpose of exploring and developing the SBCIMF. Management control was administered by conditions on fishing boat licences imposed by the Chief Executive Officer under section 69 of the FRM Act. Over this period, the Fishery demonstrated economic and biological sustainability that warranted the development of more formal management control, which was implemented in December 2005 in the form of the Management Plan.</p> <p>Reference to the gazettal and implementation of the Management Plan was made publicly available in the 2005/2006 State of the Fisheries Report. Implementing the Management Plan has served to strengthen management control and provided greater tenure and security for operators while maintaining a sustainable level of</p>	<p>Ongoing (Condition 2 Table 4).</p>

	<p>fishing effort. It is not expected to affect the criteria on which EPBC Act decisions are based.</p>	
<p>2. The ESD Report, including all performance measures, responses and information requirements to be incorporated into the management regime and decision making process.</p>	<p>In consultation with relevant stakeholders, DFWA is progressing the development of formal policy guidelines for all WA commercial fisheries that will include ecological, economic and social objectives and performance indicators. In the interim, DFWA reports against performance indicators for the SBCIMF in the <i>State of the Fisheries Report</i>.</p>	<p>Ongoing. DEW encourages DFWA to continue progressing the development of formal policy guidelines, and to continue preparing reports against performance indicators in the annual <i>State of the Fisheries Report</i>.</p>
<p>3. DFWA to ensure, where appropriate, that any relevant indigenous, conservation, world heritage and recreational interests in the fishery are considered through consultative mechanisms.</p>	<p>The SBCIMF moved from an experimental to an interim managed fishery following consultation with external stakeholders including the Regional Recreational Fishing Advisory Committee and the Western Australian Fishing Industry Council. Feedback and comments received were taken into account when preparing the legislation. DFWA received support throughout the external consultation process to progress the SBCIMF towards more formal management arrangements.</p> <p>At this stage, neither industry nor DFWA have proposed any</p>	<p>Ongoing. DEW have recommended that DFWA to take into consideration the findings of the Fisheries Research and Development Corporation (FRDC) project (2001/068), which advised DFWA to undertake investigations of other user groups in the area in which the SBCIMF operates, such as recreational and indigenous fishers (Recommendation 4, Table 4).</p>

	<p>changes to the Management Plan that require additional consultation. A full review of the SBCIMF and the Management Plan will be undertaken prior to the Management Plan's expiry on 21 August 2010. This review will include consultation with a broad range of stakeholders. DFWA fully supports, and actively encourages, involving the broad range of stakeholders in its consultation processes.</p>	
<p>4. By the end of 2006, DFWA to develop fishery specific performance measures for the target species (blue swimmer crab) and fishery specific objectives, performance indicators and measures, based on the best available information, for the two byproduct species.</p>	<p>The performance measure for the SBCIMF requires that blue swimmer breeding stocks are maintained, as demonstrated by adult crab abundance, measured by CPUE. Blue swimmer CPUE has remained well above the historical minimum CPUE of approximately 1 kilogram per trap lift.</p> <p>Catches of sand crab (<i>Charybdis cruciata</i>) and coral crab (<i>Ovalipes australiensis</i>) the two-byproduct species reported in the original assessment, have not eventuated into significant enough quantities to warrant the development of management objectives. On occasions when these species are captured, they are frequently</p>	<p>DEW has recommended that within two years, DFWA to review and update performance measures, indicators, management responses and information requirements for blue swimmer crab in the SBCIMF. As part of this review, DFWA to develop a total acceptable catch range as a performance measure (Recommendation 1, Table 4).</p> <p>DEW has also recommended that within two years, DFWA to develop performance measures, based on the best available information, for the two byproduct species (Recommendation 2, Table 4).</p>

	<p>returned to the sea alive as operators report they are too small and inconsistently captured to be marketed.</p> <p>While numbers of both byproduct species have been recorded during quarterly catch monitoring surveys since 2003, DFWA considers the incidence of capture so low as to not warrant further action.</p>	
<p>5. DFWA to incorporate into the management regime, an objective to minimise protected/listed species interactions, to minimise or maintain at sustainable levels the take of other non-retained species and to minimise impacts on the marine environment.</p>	<p>The logbook used by operators was modified in 2001 to include a section where any interactions with protected or listed species can be recorded. No interactions with protected or listed species have been reported by operators or observed by Departmental research officers since the last WTO assessment.</p> <p>Operators in the SBCIMF are not permitted to retain species caught in their traps other than crabs of the Family Portunidae. The crab traps used are designed to minimise the capture of other marine creatures and there is no incentive to capture such species. Quarterly on-board sampling by Departmental officers has indicated low numbers of non-</p>	<p>DEW has recommended that the findings of the FRDC project (2001/068) be considered in the management arrangements of the SBCIMF (Recommendation 4, Table 4). The report recommends that DFWA improve the participation and accuracy of compulsory blue swimmer crab logbook returns.</p> <p>Blue swimmer crab logbook returns provide essential information not only on total catches and CPUE but also on the undersize and ovigerous components of commercial catches. While the majority of fishers currently participate in the logbook program it is important that all the fishers participate to ensure that future management decisions are based on a true representation of the fishery. Furthermore, it is important that catch details are recorded thoroughly and accurately, i.e. that all data categories be completed particularly with respect to spatial information, and that these be completed for all of the traps in the fishery. Bycatch should also be included to provide information required to fulfil ESD requirements.</p>

	<p>retained species, such as small finfish and starfish, which have been quickly returned to the water alive when captured. The incidence of capture of non-retained species has been considered so low as to not warrant further action.</p> <p>Permitted gear types, specifications and trap setting configurations were legislated in the Management Plan in 2005 to minimise any potential impacts the traps may cause on the benthic marine environment or the potential to entangle marine species. The traps are relatively lightweight and set in a series of not less than 20 crab traps, in part to avoid the traps from dragging along the bottom. The negatively buoyant rope and strings of traps with only a float set at each end significantly reduces the amount of rope and floats in the water.</p>	
<p>6. By December 2006, DFWA to conduct a compliance risk assessment to determine the most effective use of resources and to specify the measures needed to ensure adequate compliance with the management regime. DFWA</p>	<p>A comprehensive compliance risk assessment, which included on-board field observations was undertaken in the SBCIMF between May and July 2007. DFWA has developed a matrix of risks and mitigation strategies to</p>	<p>Met. DEW encourages DFWA to continue to implement mitigation strategies identified in the compliance risk assessment.</p>

<p>to develop a compliance strategy for the fishery, to address compliance issues identified as high risk, that includes clear management actions and the means of measuring the performance of the strategy on a defined and regular basis.</p>	<p>address the potential compliance issues identified.</p>	
<p>7. DFWA, in its annual <i>State of the Fisheries Report</i>, to report on the performance of the [SBCIMF] against performance measures that relate to the sustainability of the fishery, once developed.</p>	<p>An annual review of the performance of the SBCIMF against the CPUE performance measure has been provided in the annual <i>State of the Fisheries Report</i>, available on DFWA's website.</p>	<p>Ongoing. (Recommendation 3, Table 4)</p>
<p>8. DFWA to develop a research strategy for the fishery that:</p> <ul style="list-style-type: none"> • Identifies research information needs and priorities to meet the management information, stock assessment and performance measurement needs of the fishery; and • Investigates potential synergies with other blue swimmer crab research. 	<p>A research strategy to identify research information needs and priorities to meet the management information, stock assessment and performance measurement needs of the SBCIMF, and potential synergies with other blue swimmer crab research, is presented in the final report on FRDC project no. 2001/068 by Bellchambers <i>et al.</i> (2005).</p>	<p>Ongoing. DEW has recommended that the findings of the FRDC project (2001/068) be considered in the management arrangements of the SBCIMF (Recommendation 4, Table 4).</p>
<p>9. Noting the pending development of the Interim Management Plan and the potential for fishing efficiency to</p>	<p>On-board research monitoring has continued in the SBCIMF on a quarterly basis since 1998. Information is collected on the</p>	<p>Ongoing. Noting the possible progression from an interim managed fishery to a managed fishery, the potential increase in fishing efficiency and effort, and for the fishery to continue to evolve, DEW recommends that DFWA consider the</p>

<p>increase and for the fishery to continue to evolve, DFWA to review the management arrangements of the fishery to ensure that blue swimmer crab stocks continue to be fished within ecologically sustainable levels.</p>	<p>size-frequency, distribution and abundance of blue swimmer crabs in Shark Bay as well as information noted on bycatch species. This information is used in conjunction with the daily fishing logbooks and monthly catch and effort returns provided by all fishers to ensure catch and effort levels remain sustainable. Data are analysed on an annual basis and to date, there are no indications from the scientific data or from industry that fishing is at an unsustainable level.</p> <p>The blue swimmer stock will continue to be monitored quarterly for the life of the Management Plan (which expires in August 2010). Prior to the SBCIMF potentially moving to a managed fishery, a thorough review of the Management Plan, and impact on byproduct and bycatch species will be undertaken.</p>	<p>recommendations of the FRDC project (2001/068) in the management arrangements of the SBCIMF (Recommendation 4, Table 4).</p>
<p>10. DFWA to implement an education program to ensure that industry has the capacity to make protected species reports at an appropriate level of accuracy.</p>	<p>The voluntary logbook used by all operators was modified in 2001 to include a section where operators can record any interactions with protected or listed species. Research technicians aboard quarterly sampling trips and</p>	<p>Ongoing. No further recommendation necessary.</p>

	<p>management staff have helped educate skippers and/or permit holders of reporting any such interactions to DEW.</p> <p>All licence holders have been issued the NHT published “Protected Marine Species Identification Guide” for reference when reporting any interactions with listed/protected species.</p>	
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Table 3: DEW assessment of the SBCIMF 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 DEW website.

Part 13

<p>Division 1 Listed threatened species Section 208A Minister may accredit plans or regimes</p>	<p>DEW assessment of the SBCIMF</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 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 (other than conservation dependent 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 SBCIMF will be managed under the:</p> <ul style="list-style-type: none"> • <i>WA Fish Resources Management Act 1994</i> • <i>WA Fish Resources Management Regulations 1995</i> • <i>WA Shark Bay Crab Fishery (Interim) Management Plan 2005</i> <p>DFWA advised DEW that the fishery moved from experimental to interim management status in December 2005. The Management Plan consolidated the former management arrangements (i.e. the exemptions and conditions on fishing boat licences) that were used to administer the Fishery during the last WTO assessment, however the substance of those management arrangements is unchanged. DEW agreed that the amendments did not significantly affect the sustainability of the SBCIMF. Therefore, DEW considers the current operation of the SBCIMF is not likely to adversely affect the conservation status of a listed threatened species or a population of that species</p>

<p>Division 2 Migratory species Section 222A Minister may accredit plans or regimes</p>	<p>DEW assessment of the SBCIMF</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 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 SBCIMF will be managed under the:</p> <ul style="list-style-type: none"> • <i>WA Fish Resources Management Act 1994</i> • <i>WA Fish Resources Management Regulations 1995</i> • <i>WA Shark Bay Crab Fishery (Interim) Management Plan 2005</i> <p>DFWA advised DEW that the fishery moved from experimental to interim management status in December 2005. The Management Plan consolidated the former management arrangements (i.e. the exemptions and conditions on fishing boat licences) that were used to administer the Fishery during the last WTO assessment, however the substance of those management arrangements is unchanged. DEW agreed that the amendments did not significantly affect the sustainability of the SBCIMF. Therefore, DEW considers the current operation of the SBCIMF is not likely to adversely affect the conservation status of a listed migratory species or a population of that species.</p>

<p>Division 3 Whales and other cetaceans Section 245 Minister may accredit plans or regimes</p>	<p>DEW assessment of the SBCIMF</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</p>	<p>The SBCIMF will be managed under the:</p> <ul style="list-style-type: none"> • <i>WA Fish Resources Management Act 1994</i> • <i>WA Fish Resources Management Regulations 1995</i> • <i>WA Shark Bay Crab Fishery (Interim) Management Plan 2005</i>

<p style="text-align: center;">Territory;</p> <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 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>DFWA advised DEW that the fishery moved from experimental to interim management status in December 2005. The Management Plan consolidated the former management arrangements (i.e. the exemptions and conditions on fishing boat licences) that were used to administer the Fishery during the last WTO assessment, however the substance of those management arrangements is unchanged. DEW agreed that the amendments did not significantly affect the sustainability of the SBCIMF. Therefore, DEW considers the current operation of the SBCIMF is not likely to adversely affect the conservation status of a listed cetacean or a population of that species.</p>
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<p>Division 4 Listed marine species Section 265 Minister may accredit plans or regimes</p>	<p>DEW assessment of the SBCIMF</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 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 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</p>	<p>The SBCIMF will be managed under the:</p> <ul style="list-style-type: none"> • <i>WA Fish Resources Management Act 1994</i> • <i>WA Fish Resources Management Regulations 1995</i> • <i>WA Shark Bay Crab Fishery (Interim) Management Plan 2005</i> <p>DFWA advised DEW that the fishery moved from experimental to interim management status in December 2005. The Management Plan consolidated the former management arrangements (i.e. the exemptions and conditions on fishing boat licences) that were used to administer the Fishery during the last WTO assessment, however the substance of those management arrangements is unchanged. DEW agreed that the amendments did not significantly affect the sustainability of the</p>

status of a listed marine species or a population of that species.	SBCIMF. Therefore, DEW considers the current operation of the SBCIMF is not likely to adversely affect the conservation status of a listed marine species or a population of that species.
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Section 303AA Conditions relating to accreditation of plans, regimes and policies	DEW assessment of the SBCIMF
This section applies to an accreditation of a plan, regime or policy under section 208A, 222A, 245 or 265.	DEW recommends that SBCIMF be accredited under sections 208A, 222A, 245 and 265.
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: <ul style="list-style-type: none"> (a) during a particular period; or (b) while certain circumstances exist; or (c) while a certain condition is complied with. <p>In such a case, the instrument of accreditation is to specify the period, circumstances or condition.</p>	No condition has been imposed on SBCIMF to satisfy section 208A 222A, 245 and 265 under Part 13.
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 303DC Minister may amend list	DEW assessment of the SBCIMF
(1) Minister may, by instrument in published in the Gazette, amend the list referred to in section 303DB (list of exempt native specimens) by: <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 of revoking a condition or restriction to which the inclusion of a specimen in the list is subject; or (e) correcting an inaccuracy or updating the name of a species. 	

<p>(1C) The above does not limit the matters that may be taken into account in deciding whether to amend the list referred to in section 303DB (list of exempt native specimens) to include a specimen derived from a commercial fishery.</p>	
<p>(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>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 below 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>DEW considers that the amendment of the list of exempt native specimens to include product taken in the SBCIMF Wildlife Trade Operation (WTO) would be consistent with the provisions of Part 13A as</p> <ul style="list-style-type: none"> • 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 SBCIMF is unlikely to be unsustainable and threaten biodiversity within the next 3 years; and • the EPBC Regulations do not specify fish as a class of animal in relation to the welfare of live specimens. <p>DEW considers that the consultation requirements have been met. On 10 August 2004, the Minister wrote to Fisheries Ministers seeking their views on inclusion of WTOs on the Exempt List (see sub 04/1543). Responses in support of the proposal were received from all State, Territory and Commonwealth Fisheries Ministers. The public comment period on the DFWA submission sought comment on the annual reports and submission for the SBCIMF and provided sufficient opportunity for consultation with other persons and organisations.</p>

	A letter to the Hon Jon Ford advises him of the intention to declare the fishery an approved WTO under the EPBC Act.
(5) A copy of an instrument made under section 303DC is to be made available for inspection on the Internet.	The instrument for the SBCIMF made under sections 303DC will be gazetted and made available on the DEW website.

Section 303FN Approved wildlife trade operation	DEW assessment of the SBCIMF
(2) The Minister may, by instrument published in the <i>Gazette</i> , declare that a specified wildlife trade operation is an <i>approved wildlife trade operation</i> for the purposes of this section.	
<p>(3) The Minister must not declare an operation as an approved wildlife trade operation unless the Minister is satisfied that:</p> <p>(a) the operation is consistent with the objects of Part 13A of the Act; and</p> <p>(b) the operation will not be detrimental to:</p> <p>i. the survival of a taxon to which the operation relates; or</p> <p>ii. the conservation status of a taxon to which the operation relates; and</p> <p>(ba) the operation will not be likely to threaten any relevant</p>	<p>The SBCIMF is consistent with objects of Part 13A (listed after this table) as:</p> <ul style="list-style-type: none"> • 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 SBCIMF is unlikely to be unsustainable and threaten biodiversity within the next 3 years; and • the EPBC Regulations 2000 do not specify fish as a class of animal in relation to the welfare of live specimens. <p>DEW considers that the SBCIMF will not be detrimental to the survival or conservation status of a taxon to which it relates within the next 3 years, given the management measures currently in place, which include conservative minimum size limits, regulation on the number of licenses, gear restrictions, and the prohibition on the harvest of berried females.</p> <p>DEW considers that the SBCIMF will not threaten any relevant</p>

<p>ecosystem including (but not limited to) any habitat or biodiversity; and</p> <p>(c) if the operation relates to the taking of live specimens that belong to a taxon specified in the regulations – the conditions that, under the regulations, are applicable to the welfare of the specimens are likely to be complied with; and</p> <p>(d) such other conditions (if any) as are specified in the regulations have been, or are likely to be, satisfied.</p>	<p>ecosystem within the next 3 years, given the management measures currently in place, which include conservative minimum size limits, regulation on the number of licenses, gear restrictions, and the prohibition on the harvest of berried females.</p> <p>The EPBC Regulations do not specify fish as a class of animal in relation to the welfare of live specimens.</p> <p>No other conditions are specified in relation to commercial fisheries in the EPBC Regulations.</p>
<p>(4) In deciding whether to declare an operation as an approved wildlife trade operation the Minister must have regard to:</p> <p>(a) the significance of the impact of the operation on an ecosystem (for example, an impact on habitat or biodiversity); and</p> <p>(b) the effectiveness of the management arrangements for the operation (including monitoring procedures).</p>	<p>DEW considers that the SBCIMF will not be detrimental to the survival or conservation status of a taxon to which it relates within the next 3 years, given the management measures currently in place, which include conservative minimum size limits, regulation on the number of licenses, gear restrictions, and the prohibition on the harvest of berried females.</p> <p>The management arrangements that will be employed for the SBCIMF are likely to be effective. Management arrangements include conservative minimum size limits, regulation on the number of licenses, gear restrictions, and the prohibition on the harvest of berried females.</p>
<p>(5) In deciding whether to declare an operation as an approved wildlife trade operation the Minister must have regard to:</p> <p>(a) whether legislation relating to the protection, conservation or management of the specimens to which the operation relates is in force in the State or Territory concerned; and</p>	<p>The SBCIMF will be managed under the:</p> <ul style="list-style-type: none"> • <i>WA Fish Resources Management Act 1994</i> • <i>WA Fish Resources Management Regulations 1995</i> • <i>WA Shark Bay Crab Fishery (Interim) Management Plan 2005</i>

<p>(b) whether the legislation applies throughout the State or Territory concerned; and</p> <p>(c) whether, in the opinion of the Minister, the legislation is effective.</p>	<p>The WA <i>Fish Resources Management Act 1994</i> and <i>Fish Resources Management Regulations 1995</i> applies throughout WA waters.</p> <p>The management arrangements that will be employed for the SBCIMF are likely to be effective. Management arrangements include conservative minimum size limits, regulation on the number of licenses, gear restrictions, and the prohibition on the harvest of berried females.</p>
<p>(10) For the purposes of section 303FN, an operation is a wildlife trade operation if, and only if, the operation is an operation for the taking of specimens and:</p> <p>(d) the operation is a commercial fishery.</p>	<p>The SBCIMF is a commercial fishery.</p>

Section 303FR Public consultation	DEW assessment of the SBCIMF
<p>(1) Before making a declaration under section 303FN, the Minister must cause to be published on the Internet a notice:</p> <p>(a) setting out the proposal to make the declaration; and</p> <p>(b) setting out sufficient information to enable persons and organisations to consider adequately the merits of the proposal; and</p> <p>(c) inviting persons and organisations to give the Minister, within the period specified in the notice, written comments about the proposal.</p>	<p>DEW considers that consultation requirements of the EPBC Act for declaring a WTO have been met. A public notice, which set out the proposal to declare the SBCIMF a WTO and included the submission and annual reports, was released for public comment and closed on 8 October 2007 with no submissions 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 SBCIMF a WTO and included the submission and annual reports was released for public comment on 6 September 2007 and closed on 8 October, 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</p>	<p>No public comments about the proposal were received.</p>

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

Part 16

Section 391 Minister must consider precautionary principle in making decisions	DEW assessment of the SBCIMF
(1) The Minister must take account of the precautionary principle in making a decision under section 303DC and/or section 303FN, to the extent he or she can do so consistently with the other provisions of this Act.	The precautionary principle must be considered when making a decision to include specimens on the List of Exempt Native Specimens (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.	
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Objects of Part 13A

- (a) to ensure that Australia complies with its obligations under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (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 recommendations to DFWA for the WA SBCIMF

The material submitted by DFWA demonstrates that the management arrangements for the SBCIMF meet most of the requirements of the Australian Government *Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition*.

DEW recognises that the minimum legal size limit and prohibition on the take of berried females are conservative, and that the life history characteristics of the blue swimmer crab render it somewhat robust to fishing. As such, DEW 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 SBCIMF is relatively well managed, DEW has identified a number of risks and uncertainties that must be managed to ensure that impacts are minimised:

- The ability of current management arrangements to ensure the fishery remains ecologically sustainable should effort and catch increase with the development and expansion of the fishery;
- The need to update fishery specific objectives, performance measures and performance indicators for the target species;
- The lack of a total acceptable catch range for Shark Bay blue swimmer crab; and
- The need to develop performance measures for byproduct.

DEW is satisfied that the SBCIMF 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 the SBCIMF will be the need to update fishery specific objectives, performance measures and performance indicators for the target species, and the ability of management arrangements to ensure the SBCIMF remains ecologically sustainable should effort and catch increase with the development and expansion of the fishery. DEW considers that, until it can be demonstrated that these issues have been addressed, a three year Wildlife Trade Operation (WTO) declaration is appropriate.

DEW considers that the operation of the SBCIMF 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. DEW 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 low. For these reasons, the management arrangements were accredited under Part 13 of the EPBC Act in November 2004. This accreditation will continue to apply to the fishery.

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 (**Condition 3**, Table 4).

Table 4: SBCIMF Assessment – Summary of Issues, Conditions and Recommendations November 2007

	Issue	Condition
1	<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, DEW 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 amendments that may affect sustainability of the target species or negatively impact on byproduct, bycatch, protected species or the ecosystem.</p>	<p>Condition 1: Operation of the fishery will be carried out in accordance with the <i>Shark Bay Crab Fishery (Interim) Management Plan 2005</i> and management regime for the fishery in force under the <i>Western Australian Fish Resources Management Act 1994</i> and <i>Fish Resources Management Regulations 1995</i>.</p> <p>Condition 2: DFWA to advise DEW of any material change to the SBCIMF’s legislated management regime and/or arrangements that could affect the criteria on which EPBC Act decisions are based, within three months of that change being made.</p>
2	<p><u>Annual Reporting</u></p> <p>It is important that reports be produced and presented to DEW annually in order for the performance of the fishery and progress in implementing the recommendations in this report and other managerial commitments to be monitored and assessed throughout the life of the declaration (3 years).</p> <p>Annual reports should follow Appendix B to the <i>Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition</i> (the Guidelines) and include: a description of the fishery; management arrangements in place; research and monitoring</p>	<p>Condition 3: DFWA to produce and present reports to DEW annually as per Appendix B of the ‘<i>Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition</i>’.</p>

	<p>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, progress in implementing DEW recommendations. Electronic copies of the Guidelines are available from the DEW website at http://www.environment.gov.au/coasts/fisheries/publications/guidelines.html</p> <p>Further, while noting the low levels of non-target species caught in the fishery, DEW encourages DFWA to incorporate catch summaries of byproduct and bycatch into the annual State of the Fishery reporting in order to demonstrate the negligible take of byproduct and bycatch species. In order to quantify the amount of bycatch in the fishery, DFWA have advised DEW that they will undertake one season of quarterly onboard bycatch monitoring.</p>	
	<p>Issue</p>	<p>Recommendation</p>
<p>3</p>	<p><u>Review of performance measures, indicators and response timeframe</u></p> <p>The current performance measure for the export of crabs from the Shark Bay fishery requires that catch per unit effort (CPUE) remains above approximately 1 kg/trap lift. This performance measure is based on the CPUE from 1998 when the Experimental Carnarvon Crab Trap Fishery began. CPUE has remained well above the performance measure, and for 2004/05 the CPUE was 1.61 kg/trap lift, which has proved adequate to support recruitment to the fishery.</p> <p>In the 2004 DFWA submission, DFWA indicated that acceptable catch ranges are yet to be determined for the fishery as there was insufficient time series data for the commercial fishery to allow ranges to be set, and as a developmental fishery some increase in catch rates were expected. DFWA indicated that sufficient information should be available within the next 5 years for acceptable catch ranges to be developed.</p> <p>A Fisheries Research and Development Corporation (FRDC) project (2001/068) noted that the fishery possesses a capacity for further expansion. Further, the fishery does not appear to be fished to full capacity, and has the capacity to support an increase in</p>	<p>Recommendation 1: Within two years, DFWA to review and update performance measures, indicators, management responses and information requirements for blue swimmer crab in the fishery. As part of this review, DFWA to develop a total acceptable catch range for blue swimmer crab as a performance measure.</p> <p>Recommendation 2: Within two years, DFWA to develop performance measures, based on the best available information, for the two byproduct species.</p>

	<p>fishing effort. Due to the potential increase in effort of the fishery, DEW recommends DFWA review the appropriateness of performance measures and indicators to ensure any increase is managed accordingly.</p> <p>A comprehensive review will ensure current performance measures and responses maintain precautionary management principles, and consider additional components of the fishery. Part of this review should consider current monitoring and research information needs, and priorities to meet the stock assessment and management information requirements for the SBCIMF. Any new performance measures and indicators developed for the fishery should be linked to defined management actions to ensure ongoing sustainable management of the resources. DEW considers that this review should be undertaken prior to the extension or amendment of the current Management Plan.</p> <p>Catches of the two byproduct species sand crab (<i>Charybdis cruciata</i>) and coral crab (<i>Ovalipes australiensis</i>) have been recorded during quarterly catch monitoring surveys since 2003. To date, DFWA advise that catches have not eventuated into significant enough quantities to warrant the development of management objectives. However DEW recommend that DFWA develops byproduct performance measures - such as a total acceptable catch range - into the management regime to allow for ongoing monitoring of changes in byproduct catches between years. If there is an increase in the catch of byproduct above the acceptable catch range, DFWA should investigate the cause behind the increase to ensure that the take of byproduct species in the fishery remains sustainable.</p>	<p>Recommendation 3: DFWA to monitor performance measures and indicators for the SBCIMF. Within 3 months of becoming aware that a performance measure has not been met, DFWA to develop potential management responses and timeframes for implementation.</p>
4	<p><u>Future development of the fishery</u></p> <p>DFWA advises that a full review of the Interim Management Plan will be undertaken prior to the Plan's expiry on 21 August 2010. This review will include consultation with a broad range of stakeholders. Noting the possible progression to a Managed Fishery, the potential increase in fishing efficiency and effort, and for the fishery to</p>	<p>Recommendation 4: In its review of the management arrangements of the fishery, DFWA to take into consideration the findings of the FRDC project (2001/068) and any other relevant research.</p>

continue to evolve, DEW recommends that DFWA consider the following recommendations of the FRDC project (2001/068) in the management arrangements of the SBCIMF:

1. *Implementation of fishery independent assessment;*
2. *Encourage fishers to disperse fishing effort to utilise all areas available and provide addition information of stocks in the area;*
3. *Continued funding for research, monitoring and scientific input into future management decisions input;*
4. *Improve the participation and accuracy of compulsory blue swimmer crab logbook returns;*
5. *Continuation and extension of catch monitoring program;*
6. *Investigation of other user groups i.e. recreational and indigenous fishers; and*
7. *Allow adequate assessment periods when introducing change.*

References

Bellchambers, L., Sumner, N. and Melville-Smith, R. (2005) *Development of stock allocation and assessment techniques in WA blue swimmer crab fisheries*. Report to the Fisheries Research Development Corporation, Project No. 2001/068.

Acronyms

CITES	Convention on International Trade in Endangered Species
CPUE	Catch Per Unit Effort
CW	Carapace Width
DEH	Department of the Environment and Heritage
DEW	Department of the Environment and Water Resources
DFWA	Department of Fisheries, Western Australia
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
ESD	Ecologically Sustainable Development
FRDC	Fisheries Research and Development Corporation
FRM Act	WA <i>Fish Resources Management Act 1994</i>
LENS	List of Exempt Native Specimens
SBECF	Shark Bay Experimental Crab Fishery
SBCIMF	Shark Bay Crab Interim Managed Fishery
WA	Western Australia
WTO	Wildlife Trade Operation