



Australian Government

Department of Sustainability, Environment, Water, Population and Communities

Assessment of the
South Australian Sea Urchin Fishery

October 2011

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

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

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

Table 1: Summary of the South Australian Sea Urchin Fishery

<p>Publicly available information relevant to the fishery</p>	<ul style="list-style-type: none"> • South Australian <i>Fisheries Management Act 2007</i> • South Australian <i>Fisheries Management (Miscellaneous Fishery) Regulations 2000</i> • The Department of Primary Industries and Resources South Australia submission on ecological sustainability - 2004 • Department of the Environment and Heritage Assessment report - 2005 • The Department of Primary Industries and Resources South Australia submission on ecological sustainability - 2008 • The Department of Primary Industries and Resources South Australia submission on ecological sustainability - 2011
<p>Area</p>	<p>The area of the fishery includes all state waters along the South Australian coastline. The majority of harvesting occurs along the western coast of the Eyre Peninsula, with the main locations being the Streaky Bay and Coffin Bay areas.</p> <p>There are no restrictions on the depth to which the sea urchins can be harvested from although the harvesting methods (free diving and hookah only) and atmospheric conditions limit access to some sea urchin populations in certain areas such as offshore islands and reefs.</p>
<p>Fishery status</p>	<p>The Department of Primary Industries and Resources South Australia has adopted a precautionary approach to the management of the South Australian Sea Urchin Fishery.</p> <p>Due to the small size of the fishery (six operators), total annual catch is considered to have negligible impact on the overall stock. Total annual catch increased steadily from 2004 to 2008, but declined significantly in 2009 coinciding with a reduction in effort when key operators left the fishery. The catch-per-unit-effort rate has remained steady despite fluctuations in annual catch, indicating that stocks are most likely stable.</p> <p>The Department of Primary Industries and Resources South Australia has commissioned a report by the South Australian Research and Development Institute for the South Australian Miscellaneous Fishery, which includes the Sea Urchin Fishery. This report will provide an overview of catch and effort trends and basic biological parameters for species in the fishery on which to base further research and management decisions. The report is due in October 2011.</p>
<p>Target Species</p>	<p>The fishery targets purple sea urchins (<i>Heliocidaris erythrogramma</i>).</p> <p>This species is endemic to Australia and inhabits intertidal rocky reefs down to depths of 35 metres along the southern Australian coasts.</p> <p>Information on the biology of this species can be found in the 2005 assessment of the fishery located on the Department of Sustainability, Environment, Water, Population and Communities' website.</p>

Gear	Only non-mechanical fishing methods such as tongs, a single prolonged hook or a gloved hand may be used to collect sea urchins. Divers may free dive or use a hookah line (a long compressed air hose) operating out of small boats.
Season	Unrestricted. Fishing is mainly undertaken between May and December when roe is of the highest quality and market demand is greatest.
Commercial harvest	Due to the very low number of operators in the fishery, this information is commercial in-confidence.
Value of commercial harvest	Due to the very low number of operators in the fishery, this information is commercial in-confidence.
Take by other sectors	The only current data available regarding the recreational harvest of sea urchin was collected as part of the National Recreational and Indigenous Fishing Survey in 2000/2001. The survey estimated that the total annual catch of sea urchins was 147 individuals specimens with only 45 per cent of these retained. In addition, the South Australian Museum and the Malacological Society are permitted to take sea urchins for scientific purposes, however this take is very low.
Commercial licences issued	Harvesting of sea urchins is at low levels, with only one dedicated sea urchin fisher, and five scallop fishers with access to sea urchins. Each fisher is restricted to operating with one vessel and a maximum of two agents engaging in fishing activities from the registered vessel at any one time, being any combination of either: <ul style="list-style-type: none"> • licence holder; • a registered master other than the licence holder; or • an agent of the licence holder. Harvesters remove on average 40 per cent of sea urchins from an area at any given time, and only harvest when yield is a minimum of 6.6 – 7.0 per cent roe.
Management arrangements	The fishery is managed as a limited entry fishery, with non-transferable licences. Due to resource constraints, no formal management plan exists for the fishery. The regulations that govern the management of the fishery are established in the <i>Fisheries Management (Miscellaneous Fisheries) Regulations 2000</i> . <u>Management measures include:</u> <ul style="list-style-type: none"> • gear restrictions; • vessel restrictions; • limited entry (a total of six licences); • exclusion zones; and • total catch for all licence holders is monitored through monthly log sheets submitted detailing catch, effort and location (Marine Scalefish fishing areas).

Export	Exported after processing to Asian markets (primarily Hong Kong).
Interaction with Protected Species¹	Considered nil. At present, there have been no reported interactions between the fishery and any threatened species. All commercial fishers are required to report any interactions with protected species to the Department of Primary Industries and Resources South Australia and the Department of Sustainability, Environment, Water, Population and Communities. A Wildlife Interaction Logbook and identification guide has been developed to assist divers.
Ecosystem Impacts	Negligible due to harvesting methods.

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

Table 2: Progress in implementation of recommendations and conditions made in the 2008 assessment of the South Australian Sea Urchin Fishery.

Condition	Progress	Recommended Action
<p>1. Operation of the fishery will be carried out in accordance with the South Australian Sea Urchin Fishery management regime in the <i>Fisheries Management (Miscellaneous Fishery) Regulations 2000</i> in force under the <i>Fisheries Management Act 2007</i> (South Australia).</p>	<p>The Department of Sustainability, Environment, Water, Population and Communities considers that the South Australian Sea Urchin Fishery has continued to operate in accordance with the management regime in force under the <i>Fisheries Management Act 2007</i> (South Australia), and consistent with the <i>Fisheries Management (Miscellaneous Fishery) Regulations 2000</i>.</p>	<p>The department considers that this condition has been met.</p> <p>The department recommends that this action be continued (see Recommendation 1, Table 4)</p>
<p>2. The Department of Primary Industries and Resources, South Australia (PIRSA) will advise DEWHA of any material change to the fishery’s management arrangements that could affect the criteria on which EPBC decisions are based, within 3 months of that change being made.</p>	<p>PIRSA has maintained communication with the department through annual reports and has communicated management changes to the department as they have arisen. PIRSA will continue to communicate management changes to the department in the future.</p> <p>There have been no management changes in the fishery since the 2008 assessment.</p>	<p>The department considers that this condition has been met.</p> <p>The department recommends that this action be continued (see Recommendation 2, Table 4)</p>

Condition	Progress	Recommended Action
<p>3. PIRSA to produce and present reports to DEWHA annually as per Appendix B to the <i>Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition</i>.</p>	<p>In July 2007 PIRSA provided the department with information on the new South Australian <i>Fisheries Management Act 2007</i> and <i>Fisheries Management (General) Regulations 2007</i> that came into effect 1 December 2007.</p> <p>The ‘Annual Progress Report’ was also provided to the department in December 2007 containing a summary of management changes that had taken place and a summary of progress for PIRSA’s fisheries.</p> <p>PIRSA has maintained communication with the department and has communicated management changes through annual reports.</p>	<p>The department considers that this condition has been met.</p> <p>The department recommends that this action be continued (see Recommendation 3, Table 4)</p>
<p>4. PIRSA to finalise the development of formal management arrangements for the SUF.</p>	<p>PIRSA has committed to develop a policy document for South Australia’s Miscellaneous small dive fisheries appropriate to the size and harvest quantities of the fisheries (including the sea urchin fishery). This policy document will include the ongoing management arrangements and management objectives for the dive fisheries, including sea urchin, turbo shells and scallop.</p> <p>Limited resources and other priorities have stalled progress on this condition but the department acknowledges that this process is still underway, noting that the development of formal management arrangements for all South Australian fisheries is a legislative requirement under the <i>Fisheries Management Act 2007</i>.</p>	<p>The department considers that this condition has been significantly progressed and new management arrangements for the fishery will be in place in the near future.</p> <p>Further information required to develop formal management arrangements will be provided through the report from the South Australian Research and Development Institute, which is expected to be completed in October 2011. The department considers that the formalisation of the fishery management arrangements will significantly improve the performance of the fishery against the <i>Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd edition</i>. The department recommends that this condition should continue in a modified form (see Recommendation 5, Table 4).</p>

Recommendation	Progress	Recommended Action
<p>1. In developing the management arrangements, PIRSA to undertake an Ecological Risk Assessment, and to initiate appropriate management responses based on the outcomes of that process.</p>	<p>PIRSA has commissioned a report from the South Australian Research and Development Institute for the South Australian Miscellaneous Fishery, which includes Sea Urchins, to provide an overview of catch and effort trends and basic biological parameters for species in the fishery on which to base further research and management decisions.</p> <p>The report will help address knowledge gaps in the fishery and will inform the risk assessment process. The report is due to be provided to PIRSA in October 2011.</p>	<p>PIRSA has indicated that a risk assessment will be performed based on the outcomes of the current research report being prepared for the fishery. This information will also be used in the process of developing formal management arrangements for the fishery.</p> <p>The department considers that this recommendation has been partially met and that the action should be continued (see Recommendation 4, Table 4).</p>
<p>2. Develop and implement research strategies to address key gaps in the knowledge of sea urchin biology and ecology appropriate to the scale of the fishery. In the absence of scientific data, a precautionary approach should continue to be applied.</p>	<p>The project being conducted by the South Australian Research and Development Institute for the Miscellaneous fisheries will directly address this recommendation by addressing key knowledge gaps in the fishery. The project will provide fisheries catch and effort data and basic biological parameters for the species that form the Miscellaneous Fishery (except for giant crabs). The report from this project is due in October 2011 and will help to inform future management arrangements for sea urchins and other species targeted in the Miscellaneous fisheries.</p> <p>In 2011-12, logbook information from the Miscellaneous fisheries will be used to provide catch and effort data analyses. A literature review on biological information will also be conducted.</p>	<p>The department considers that this recommendation has been partially met and that the action should be continued (see Recommendation 4, Table 4).</p>

<p>3. PIRSA to collaborate with other jurisdictions where appropriate and actively pursue consistent and complementary research needs and management arrangements for the target species.</p>	<p>PIRSA contributes to cross-jurisdictional discussions on management arrangements, including for the Miscellaneous fisheries.</p>	<p>This recommendation is ongoing. The department recommends that PIRSA continue to work with other jurisdictions as appropriate.</p>
<p>4. PIRSA to develop and implement finer scale data collection, reporting and management measures appropriate to the scale of the fishery in order to mitigate the risk of localised and serial depletion of sea urchins in the fishery.</p>	<p>There are five licence holders who have access to sea urchins. The department has received total catch data which shows the catch ranges over a five year period. For confidentially reasons, catch and effort data has been removed from the public submission but has been provided to the department to inform the assessment of the fishery under the EPBC Act.</p> <p>The fishery currently operates in localised areas, taking relatively small numbers of sea urchins. Catch per unit effort has been relatively stable over the past five years, which suggests that catch rates are limited by input rather than by stock levels.</p> <p>PIRSA has indicated that it will consider finer scale management in the process of developing formal management arrangements for the fishery.</p>	<p>The department considers that the management arrangements are sufficient to mitigate localised and serial depletion in the fishery, given the relatively small take from the fishery. PIRSA has indicated that finer scale data collection and management will be considered in development of formal management arrangements for the fishery based on the South Australian Research and Development Institute project report.</p> <p>The department considers that this recommendation has been partially met and that the action should be continued (see Recommendation 4, Table 4).</p>

Table 3: The Department of Sustainability, Environment, Water, Population and Communities assessment of the South Australian Sea Urchin Fishery against the requirements of the EPBC Act related to decisions made under Part 13A.

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

Part 13A

Section 303BA Objects of Part 13A

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

- (a) to ensure that Australia complies with its obligations under CITES² and the Biodiversity Convention;
- (b) to protect wildlife that may be adversely affected by trade;
- (c) to promote the conservation of biodiversity in Australia and other countries;
- (d) to ensure that any commercial utilisation of Australian native wildlife for the purposes of export is managed in an ecologically sustainable way;
- (e) to promote the humane treatment of wildlife;
- (f) to ensure ethical conduct during any research associated with the utilisation of wildlife; and
- (h) to ensure the precautionary principle is taken into account in making decisions relating to the utilisation of wildlife.

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

Part 13A

Section 303DC Minister may amend list	The Department of Sustainability, Environment, Water, Population and Communities assessment of the South Australian Sea Urchin Fishery
<p>(1) Minister may, by instrument published in the Gazette, amend the list referred to in section 303DB (list of exempt native specimens) by:</p> <ul style="list-style-type: none">(a) including items in the list;(b) deleting items from the list; or(c) imposing a condition or restriction to which the inclusion of a specimen in the list is subject; or(d) varying or revoking a condition or restriction to which the inclusion of a specimen in the list is subject; or(e) correcting an inaccuracy or updating the name of a species.	<p>It is not possible to list exhaustively the factors that you may take into account in amending the list of exempt native specimens. The objects of Part 13A, which are set out above this table, provide general guidance in determining factors that might be taken into account. A matter that is relevant to determining whether an amendment to the list is consistent with those objects is likely to be a relevant factor.</p> <p>The department considers that the amendment of the list of exempt native specimens to include product taken in the South Australian Sea Urchin Fishery would be consistent with the provisions of Part 13A as:</p> <ul style="list-style-type: none">▪ the fishery will not harvest any Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) listed species;▪ there are management arrangements in place to ensure that the resource is being managed in an ecologically sustainable way (see Table 1);▪ the operation of the South Australian Sea Urchin Fishery is unlikely to be unsustainable and threaten biodiversity within the next five years; and▪ the <i>EPBC Regulations 2000</i> do not specify marine invertebrates, such as sea urchins, as a class of animal in relation to the welfare of live specimens.

<p>(3) Before amending the list referred to in section 303DB (list of exempt native specimens), the Minister:</p> <p>(a) must consult such other Minister or Ministers as the Minister considers appropriate; and</p> <p>(b) must consult such other Minister or Ministers of each State and self-governing Territory as the Minister considers appropriate; and</p> <p>(c) may consult such other persons and organisations as the Minister considers appropriate.</p>	<p>The department considers that the consultation requirements have been met.</p> <p>Although a decision to amend the list of exempt native specimens does not require public consultation under the EPBC Act, the submission for ongoing export approval for the fishery was published on the department's website for 21 business days. The public comment period on the Department of Primary Industries and Resources South Australia submission sought comment on the annual reports/submission for the South Australian Sea Urchin Fishery and provided sufficient opportunity for consultation with other persons and organisations. No comments were received.</p>
<p>(5) A copy of an instrument made under section 303DC is to be made available for inspection on the Internet.</p>	<p>The instrument for the South Australian Sea Urchin Fishery made under section 303DC will be gazetted and made available on the department's website.</p>

Part 16

<p>Section 391 Minister must consider precautionary principle in making decisions</p>	<p>The Department of Sustainability, Environment, Water, Population and Communities assessment of the South Australian Sea Urchin Fishery</p>
<p>(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.</p>	<p>The precautionary principle has been considered in the preparation of advice in relation to decisions under section 303DC.</p>
<p>(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.</p>	

The Department of Sustainability, Environment, Water, Population and Communities' recommendations to the Department of Primary Industries and Resources South Australia for the South Australian Sea Urchin Fishery

The material submitted by the Department of Primary Industries and Resources South Australia indicates that the South Australian Sea Urchin Fishery operates in accordance with the Australian Government *Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd edition*.

The fishery is a limited entry fishery, with non-transferrable licences. Due to resource constraints, no formal management plan exists for the fishery. The regulations that govern the management of the fishery are established in the South Australian *Fisheries Management (Miscellaneous Fisheries) Regulations 2000*.

The Department of Sustainability, Environment, Water, Population and Communities recognises that the Department of Primary Industries and Resources South Australia has adopted a precautionary approach to the management of the South Australian Sea Urchin Fishery through limited entry to the fishery, non transferable licences and gear restrictions. The department considers that the range of management measures are sufficient to ensure that the fishery is conducted in a manner that does not lead to over fishing and stocks are not currently over fished.

Taking into account that harvesting is done entirely by hand (resulting in no interactions with protected species, no byproduct or bycatch issues) the department considers that fishing operations are managed to minimise their impact on the structure, productivity, function and biological diversity of the ecosystem.

The department considers that product taken in the fishery should be included in the list of exempt native specimens under Part 13A of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) for a period of five years. To contain and minimise the risks in the longer term the recommendations listed in Table 4 have been made. Unless a specific time frame is provided in the recommendation each recommendation should be addressed during the five year period.

Table 4: South Australian Sea Urchin Fishery Assessment – Summary of Issues and Recommendations October 2011

	Issue	Recommendation
1	<p><u>General Management</u> Export decisions relate to the arrangements in force at the time of the decision. To ensure that these decisions remain valid and export approval continues uninterrupted, the Department of Sustainability, Environment, Water, Population and Communities needs to be advised of any changes that are made to the management regime and make an assessment that the new arrangements are equivalent or better, in terms of ecological sustainability, than those in place at the time of the original decision. This includes operational and legislated amendments that may affect sustainability of the target species or negatively impact on byproduct, bycatch, protected species or the ecosystem.</p>	<p>Recommendation 1 Operation of the fishery will be carried out in accordance with the South Australian management arrangements made under the South Australian <i>Fisheries Management Act 2007</i> and consistent with the <i>Fisheries Management (Miscellaneous Fishery) Regulations 2000</i>.</p> <p>Recommendation 2 The Department of Primary Industries and Resources, South Australia to advise the department of any intended amendments to the management arrangements that may affect the criteria on which <i>Environment Protection and Biodiversity Conservation Act 1999</i> decisions are based.</p>

2	<p><u>Annual Reporting</u></p> <p>It is important that reports are produced and presented to the department annually in order for the performance of the fishery and progress in implementing the recommendations in this report and other managerial commitments to be monitored and assessed throughout the life of the declaration. Annual reports should 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 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 the department’s recommendations. Electronic copies of the Guidelines are available from the department’s website at http://www.environment.gov.au/coasts/fisheries/publications/guidelines.html</p>	<p>Recommendation 3</p> <p>The Department of Primary Industries and Resources South Australia to produce and present reports to the department annually as per Appendix B to the <i>Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition</i>.</p>
3	<p><u>Monitoring and Evaluation of the Fishery</u></p> <p>The Department of Primary Industries and Resources South Australia has adopted a precautionary approach to the management of the South Australian Sea Urchin Fishery, although catch data collection and biological information is limited in the fishery. In previous assessments the Department of Primary Industries and Resources South Australia agreed to:</p> <ul style="list-style-type: none"> • undertake an Ecological Risk Assessment as part of the process of developing formal management arrangements for the fishery; • determine an acceptable catch range for the target species; • participate in ongoing cross-jurisdictional collaboration with other sea urchin fisheries in other jurisdictions (such as the Victorian Sea Urchin Fishery and the New South Wales Sea Urchin and Turban Shell Restricted Fishery); • implement a system to validate commercial logbook data; and • when the Miscellaneous Fishery Management Plan is developed, consider the implementation of finer spatial scale management and reporting. 	<p>Recommendation 4:</p> <p>Upon finalisation of the ‘Data Summary Miscellaneous Fishery’ project, the Department of Primary Industries and Resources South Australia to:</p> <ol style="list-style-type: none"> a) provide the Department of Sustainability, Environment, Water, Population and Communities with a copy of the final report, subject to confidentiality provisions; and b) outline how the outcomes of the report will be incorporated into the management of the Sea Urchin Fishery.

	<p>The Department of Primary Industries and Resources South Australia has commissioned a report for the South Australian Miscellaneous Fishery, which includes the Sea Urchin Fishery, to provide an overview of catch and effort trends and basic biological parameters for species in the fishery on which to base further research and management decisions. The report is due in October 2011.</p> <p>The Department of Sustainability, Environment, Water, Population and Communities requests that the final report, subject to confidentiality provisions, and an outline of how the outcomes of the report will be incorporated into the management of the fishery, be provided to the department for consideration in relation to decisions made under Part 13A of the EPBC Act.</p>	
4	<p><u>Future Management Arrangements for the Fishery</u></p> <p>To meet the Guidelines, commercial fisheries should have a management regime that is strategic and contains objectives and performance criteria by which the effectiveness of the management measures can be evaluated.</p> <p>The Department of Primary Industries and Resources South Australia has indicated that by 2014 a policy paper for the ‘Miscellaneous’ dive fisheries will be developed. This document will set out the management arrangements for all small South Australian dive fisheries including the Scallop and Turbo Fisheries, the Specimen Shell Fishery and the Sea Urchin Fishery. The policy paper will also contain objectives and criteria to assess the effectiveness of the management arrangements.</p> <p>The Department of Sustainability, Environment, Water, Population and Communities considers the completion and implementation of the policy paper with its objectives and performance criteria to be a key part of achieving compliance with the Guidelines.</p>	<p>Recommendation 5: The Department of Primary Industries and Resources South Australia to develop and implement a Policy Document outlining:</p> <ul style="list-style-type: none"> • the ongoing management arrangements; and • management objectives; <p>for all ‘Miscellaneous’ dive fisheries, including the South Australian Sea Urchin Fishery, before the end of 2014.</p>

