



Australian Government

Department of Sustainability, Environment, Water, Population and Communities

Assessment of the
Victorian Sea Urchin Fishery

October 2011

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Disclaimer

This document is an assessment carried out by the Department of Sustainability, Environment, Water, Population and Communities of a commercial fishery against the Australian Government *Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition*. It forms part of the advice provided to the Minister for Sustainability, Environment, Water, Population and Communities on the fishery in relation to decisions under 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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Contents

Table 1: Summary of the Victorian Sea Urchin Fishery4

Table 1 contains a brief overview of the operation of the fishery including: the gear used, species targeted, byproduct species, bycatch species, annual catch, management regime and ecosystem impacts.

Table 2: Progress in implementation of recommendations and conditions made in the 2008 assessment of the Victorian Sea Urchin Fishery8

Table 2 contains an update on the progress that has been made by the fishery’s management agency in implementing the conditions and recommendations that formed part of the fishery's previous wildlife trade operation declaration.

Table 3: The Department of Sustainability, Environment, Water, Population and Communities’ (DSEWPaC) assessment of the Victorian Sea Urchin Fishery against the requirements of the EPBC Act related to decisions made under Part 13A. 12

Table 3 contains the department’s assessment of the Victorian Sea Urchin Fishery management arrangements against all the relevant parts of the *Environment Protection and Biodiversity Conservation Act 1999* that the delegate must consider before making a decision.

Final recommendations to the Victorian Department of Primary Industries for the Victorian Sea Urchin Fishery 15

This section contains the department’s assessment of the performance of the fishery 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 for a five year period.

Table 4: Victorian Sea Urchin Fishery Assessment - Summary of Issues and Recommendations October 2011 16

Table 4 contains a description of the issues identified by the department with the current management regime for the Victorian Sea Urchin Fishery 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 species for a five year period.

Table 1: Summary of the Victorian Sea Urchin Fishery

<p>Publicly available information relevant to the fishery</p>	<ul style="list-style-type: none"> • Victorian <i>Fisheries Act 1995</i> • Victorian <i>Fisheries Regulations 2009</i> • Application to the Department of Sustainability, Environment, Water, Population and Communities for the reassessment of the Victorian Sea Urchin Fishery - August 2011 • Victorian Department of Primary Industries' submission 'Fishery Status Report Sea Urchin Fishery' - 2008 • Department of the Environment and Heritage Assessment of the Victorian Sea Urchin Fishery - October 2005 • Statement of Management Arrangements for the Victorian Sea Urchin Fishery - 2005
<p>Area</p>	<p>The Victorian Sea Urchin Fishery is divided into two zones. The eastern zone encompasses the coastal waters east of Lakes Entrance to the New South Wales border. The other zone covers the area of Port Phillip Bay.</p> <p>Each zone is divided into a number of smaller scale areas referred to as 'reef codes'.</p>
<p>Target Species</p>	<p>The fishery targets white sea urchins (<i>Heliocidaris erythrogramma</i>) and black sea urchins (<i>Centrostephanus rodgersii</i>).</p> <p>In Port Phillip Bay, the total biomass of the white sea urchin was estimated as 9,100 tonnes. In eastern Victoria, the total biomass of the black sea urchin was estimated as 3,300 tonnes compared to 1,500 tonnes for the white sea urchin.</p> <p>Information on the biology of the above species can be found in the 2005 assessment of the fishery located on the department's website.</p>
<p>Fishery status</p>	<p>In the Victorian Sea Urchin Fishery, fishing for sea urchins is limited to five per cent of the unexploited biomass for each of the target species. This catch limit is based on research surveys of sea urchin populations in NSW and eastern Victoria, which recommended that an annual catch of up to five per cent of the unexploited biomass of both sea urchin species is likely to be sustainable.</p> <p>The catch of sea urchins in the Victorian Sea Urchin Fishery is estimated to be between one and five per cent of the unexploited biomass.</p>
<p>Gear</p>	<p>Sea urchins are harvested by hand using non mechanical fishing methods such as tongs and gloved hands. Divers may also use hookah gear or compressed air diving equipment.</p> <p>Recreational harvesters use methods similar to those used in the commercial fishery.</p>

Season	<p>Sea urchins are collected prior to spawning, as the primary commercial product derived from them is roe. The two target species generally spawn at different times of year:</p> <ul style="list-style-type: none"> • White sea urchin - June to January • Black sea urchin - February to July 																																																								
Commercial harvest by fiscal year	<p>Sea urchin harvest from eastern Victoria (live weight, tonnes)</p> <table border="1" data-bbox="496 450 1358 618"> <thead> <tr> <th>Species</th> <th>04/05</th> <th>05/06</th> <th>06/07</th> <th>07/08</th> <th>08/09</th> <th>09/10</th> </tr> </thead> <tbody> <tr> <td>Black sea urchin</td> <td>25</td> <td>13</td> <td>19</td> <td>7</td> <td>8</td> <td>11</td> </tr> <tr> <td>White sea urchin</td> <td>12</td> <td>7</td> <td>12</td> <td>7</td> <td>9</td> <td>4</td> </tr> <tr> <td>Total</td> <td>37</td> <td>20</td> <td>31</td> <td>14</td> <td>17</td> <td>15</td> </tr> </tbody> </table> <p>Sea urchin harvest from Port Phillip Bay (live weight, tonnes)</p> <table border="1" data-bbox="496 719 1358 887"> <thead> <tr> <th>Species</th> <th>04/05</th> <th>05/06</th> <th>06/07</th> <th>07/08</th> <th>08/09</th> <th>09/10</th> </tr> </thead> <tbody> <tr> <td>Black sea urchin</td> <td>2</td> <td>1</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>White sea urchin</td> <td>18</td> <td>18</td> <td>13</td> <td>9</td> <td>12</td> <td>13</td> </tr> <tr> <td>Total</td> <td>20</td> <td>19</td> <td>13</td> <td>9</td> <td>12</td> <td>13</td> </tr> </tbody> </table>	Species	04/05	05/06	06/07	07/08	08/09	09/10	Black sea urchin	25	13	19	7	8	11	White sea urchin	12	7	12	7	9	4	Total	37	20	31	14	17	15	Species	04/05	05/06	06/07	07/08	08/09	09/10	Black sea urchin	2	1	0	0	0	0	White sea urchin	18	18	13	9	12	13	Total	20	19	13	9	12	13
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Approximate value of commercial harvest 2010	<p>Black Sea Urchin - \$19,992.60 White Sea Urchin - \$102,596.50</p>																																																								
Take by other sectors	<p>The Victorian Department of Primary Industries considers that catch by other sectors is negligible.</p> <p>The most recent recreational and Indigenous fishing survey was conducted in 2001 (Henry & Lyle, 2003). The survey did not record any recreational sea urchin catch in Victoria. However, officers from the Victorian Department of Primary Industries have anecdotal evidence of low levels of recreational sea urchin harvest from Victorian coastal waters. The majority of recreational catch is likely to occur in the waters around Port Phillip Bay.</p> <p>A Recreational Fishing Licence is required to take sea urchins (exemptions apply), to which a maximum daily catch limit of 20 sea urchins applies. Recreational fishers must land all urchins whole.</p>																																																								

<p>Commercial licences issued</p>	<p>To commercially harvest sea urchins, a commercial fishing permit must be held, which specifies the species that may be targeted (sea urchins) and any additional conditions that relate to the permitted activity. Permits are issued for a period of time between one to three years. Historically, up to 24 permits have been issued in the fishery, however only 10 permits are currently in operation. The majority of the permits are held by the Eastern Victorian Sea Urchin Divers Association.</p> <p>Permit conditions specify fishing areas and permitted fishing methods. Only three of the 10 permits allow fishing within the Port Phillip Bay zone. Under the permit system, conditions may be amended by the Secretary of the Victorian Department of Primary Industries.</p> <p>Permit holders are required to meet a minimum harvest level of 3000 kilograms per year to retain their permit. This condition is in place to reduce latent effort and to ensure that management decisions can be made on an appropriate level of fishery dependant (catch) information.</p>
<p>Management arrangements</p>	<p>The management arrangements involve both input and output controls and other actions to improve performance measures.</p> <p><u>Input controls</u></p> <ul style="list-style-type: none"> • policy to minimize latent effort; • limited entry (currently 10 permit holders in operation); • area conditions on permits (e.g. intertidal zones); and • gear restrictions (hand collection only); <p><u>Output controls</u></p> <ul style="list-style-type: none"> • catch reference points; and • a voluntary Code of Practice by the industry group Eastern Victorian Sea Urchin Diver’s Association Inc. places size limits on both species in eastern Victoria. <p><u>Measures to monitor performance measures:</u></p> <ul style="list-style-type: none"> • completion and return of logbooks on a monthly basis; • prior notification of intent to fish required by the Victorian Department of Primary Industries; • development of new electronic Integrated Catch and Effort reporting systems; • routine inspections; • annual review of management arrangements in consultation with industry; • sea urchin biomass reductions trials; and • further research on sea urchin stocks and biology (funded through the Eastern Zone Abalone Industry Association).
<p>Export</p>	<p>Product from this fishery is not currently being exported; however there are potential market opportunities in Japan. Product from the fishery is currently sold in Western Australia, New South Wales and local markets in Victoria.</p>

Interaction with Protected Species¹	Considered nil. At present, there has been no reported interaction between the fishery and any protected species.
Ecosystem Impacts	Negligible due to the hand collection 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 initial assessment of the Victorian Sea Urchin Fishery

Conditions	Progress	Recommended Action
<p>Operation of the fishery will be carried out in accordance with the management regime for the fishery in force under the Victorian <i>Fisheries Act 1995</i> and <i>Fisheries Regulations 1998</i>.</p>	<p>The department considers that the Victorian Sea Urchin Fishery has continued to operate in accordance with the management regime in force under the Victorian <i>Fisheries Act 1995</i> and <i>Fisheries Regulations 1998</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>Department of Primary Industries (DPI) will advise the Department of the Environment, Water, Heritage and the Arts (DEWHA) of any intended change to the fishery's management arrangements that could affect the assessment against the criteria on which <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) decisions are based.</p>	<p>No changes to the management arrangements for the Victorian Sea Urchin Fishery have occurred since the last assessment in 2008.</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>
<p>DPI 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> (the Guidelines).</p>	<p>In 2009 the Victorian Department of Primary Industries provided the department with the 'Fishery Status Report 2008'.</p> <p>The current 'Fishery Status Report 2010' is currently in draft form and will be provided when finalised.</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>

Recommendations	Progress	Recommended Action
<p>DPI to review the management arrangements of the SUF, with consideration of progressing, the SUF, to a developed fishery. The review should include an assessment of the effectiveness of the current performance indicators and measures and consideration of suitable performance indicators and measures for impacts on the ecosystem.</p>	<p>The management arrangements for the Victorian Sea Urchin Fishery are reviewed annually in consultation with industry. Annual reviews are carried out in an informal manner through meetings with permit holders for Port Phillip Bay and representatives from the Eastern Victorian Sea Urchin Divers Association Inc. These reviews include an analysis of the performance of the fishery in relation to the current performance indicators. The Victorian Department of Primary Industries considers that the current performance indicators allow for the fishery to be managed in a precautionary and sustainable manner.</p> <p>The Victorian Department of Primary Industries has commenced formally reviewing the management arrangements for the Victorian Sea Urchin Fishery, with consideration being given to options such as quota management, zoning, stock assessments and turfs (areas designated to individual licences). Any future management changes will be reported to the Department of Sustainability, Environment, Water, Population and Communities prior to their implementation in the fishery.</p>	<p>The department considers that this recommendation has been met.</p>

Recommendations	Progress	Recommended Action
<p>DPI to;</p> <ul style="list-style-type: none"> a) conduct an ecological risk assessment (ERA) for all aspects of the SUF, including, but not limited to, areas at risk of localised and serial depletion; and b) develop and implement appropriate management measures, including priority research needs, to address risks identified in the ERA. 	<p>A formal ecological risk assessment has not been conducted for the fishery, although ecological risks are being considered as part of the annual review of the fishery. The most recent annual review stated that there was no indication of any high risks within the fishery, particularly relating to serial depletion. It also noted that the black sea urchin has been expanding its range further south due to strengthening of the East Australian Current.</p> <p>Reports provided by abalone and sea urchin divers have indicated that the white sea urchin populations are increasing in Port Phillip Bay. These observations are supported by data on urchin cover on reef habitat that is collected as part of fishery independent abundance surveys for abalone.</p> <p>Due to the size of the fishery, the department considers the current methodology for assessing risks in the fishery is appropriate for the scale and potential impact of this fishery.</p> <p>The Victorian Department of Fisheries expects that future annual reviews of the fishery will assist with the identification of key knowledge gaps and guide the development of new management arrangements.</p>	<p>The department considers that this recommendation has been met.</p>

Recommendations	Progress	Recommended Action
<p>DPI to collaborate with other jurisdictions and actively pursue consistent and complementary research needs and management arrangements for target species.</p>	<p>The Victorian Department of Primary Industries has consulted with Tasmania and New South Wales regarding the status of sea urchin fisheries and other relevant stock information. The department accepts that the Victorian Department of Primary Industries is sharing information and working collaboratively with adjacent jurisdictions to help further identify suitable management arrangements and methods of assessing and monitoring stocks.</p>	<p>The department considers that this recommendation has been met.</p>

Table 3: The Department of Sustainability, Environment, Water, Population and Communities’ assessment of the Victorian Sea Urchin Fishery against the requirements of the *Environment Protection and Biodiversity Conservation Act 1999* (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 Victorian 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 Victorian 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 Victorian Sea Urchin Fishery is unlikely to be unsustainable and threaten biodiversity within the next five years; and▪ the <i>Environment Protection and Biodiversity Conservation Regulations 2000</i> (EPBC Regulations) do not specify 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 22 business days. The public comment period on the Victorian Department of Primary Industries' submission sought comment on the submission for the Victorian Sea Urchin Fishery and provided sufficient opportunity for consultation with other persons and organisations. No comments were received.</p> <p>The Department of Sustainability, Environment, Water, Population and Communities also consulted with the Victorian Department of Primary Industries, as the Victorian Department of Primary Industries has management responsibilities for the fishery.</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 Victorian 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>Department of Sustainability, Environment, Water, Population and Communities assessment of the Victorian 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 Victorian Department of Primary Industries for the Victorian Sea Urchin Fishery.

The material submitted by the Victorian Department of Primary Industries indicates that the Victorian 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 10 permits currently in operation and is managed through a permit system under the Victorian *Fisheries Regulations 2009*.

The Department of Sustainability, Environment, Water, Population and Communities considers that the fishery is well managed and unlikely to have an unacceptable or unsustainable impact on the environment. The management arrangements include limited entry, conservative catch reference points and gear restrictions (hand collection only). 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 the lack of bycatch and byproduct due to the hand collection methods used in the fishery and the management arrangements for sea urchin species, the department considers that the management regime for the Victorian Sea Urchin Fishery provides for fishing operations to be 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* 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: Victorian 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 management regime for the fishery in force under the Victorian <i>Fisheries Act 1995</i> and <i>Fisheries Regulations 2009</i></p> <p>Recommendation 2 The Victorian Department of Primary Industries to advise the Department of Sustainability, Environment, Water, Population and Communities of any intended change to the fishery’s management arrangements that could affect the assessment against 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 Victorian Department of Primary Industries to produce and present reports to the Department of Sustainability, Environment, Water, Population and Communities annually as per Appendix B to the <i>Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition</i>.</p>
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