



South Australian Fisheries Management Series

Ecological Assessment of the South Australian Sea Urchin Fishery

Reassessment Report

Prepared for the Department of Environment, Water,
Heritage, and the Arts

For the purposes of Part 13 and 13(A) of the Environment Protection and
Biodiversity Conservation Act 1999

July, 2008

**Prepared by the Fisheries Division of Primary Industries and
Resources South Australia**

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Figure 1: Historical catch and effort data of sea urchin.

1. Purpose

This report has been prepared by the Fisheries Division of the Department of Primary Industries and Resources, South Australia (PIRSA).

The purpose of this report is to provide a revised assessment of the management arrangements in place for the South Australian Sea Urchin Fishery. This report updates the information provided to the Department of Environment, Water, Heritage and the Arts (DEWHA), in 2005 for assessment against the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). The report has been prepared in accordance with the 'Guidelines for the Ecologically Sustainable Management of Fisheries', 2nd Edition, and particularly addresses the level of change that occurred in the fishery since the 2005 assessment.

2. Background

In South Australia, the only sea urchin species commercially exploited are *Heliocidaris erythrogramma*. This species is endemic to Australia and inhabits intertidal rocky reefs down to depths of 35 meters along the southern Australian coasts. In South Australia, they are commonly found amongst rocks, boulders or crevices of shallow subtidal limestone and granite reefs. *H. erythrogramma* is usually 60 to 90 millimetres in diameter, but has been known to reach 125 millimetres.

3. Level of Assessment.

The South Australian Sea Urchin Fishery was assessed as an approved Wildlife Trade Operation in 2005. Since last assessment there have not been significant changes in most areas of interest or particular issues as outlined in page 5 of the 'Guidelines for the Ecologically Sustainable Management of Fisheries'.

Table 1: Level of assessment required by the South Australian Rock Lobster Fishery

Issue	Area of Interest	Yes	No
Fishery	Has there been any change to management arrangements, and/ or fishing practice?	X	
External Influences	Has there been any change in the target stock status?		X
Interaction with protected species	Has there been any change in the nature, scale, intensity of impact, and/or management response?		X
Ecosystem impact	Has there been any change to an environmental issue/influence outside of the fishery management agencies control?		X
Target Stock Status	Has there been any change to management arrangements, and/ or fishing practice?		X
By-product/ bycatch status.	Has there been any change in the by-product and/or by-catch stock status?		X

Considering the above, the level of submission requirement for the South Australian Rock Lobster Fishery is Standard plus ancillary.

However, it is important to note that all changes and progress in the recommendations provided by DEWHA have been communicated to DEWHA through annual reporting.

4. Fishery

4.1 *Management changes in the fishery*

PIRSA Fisheries has adopted a precautionary approach to the management of the sea urchin fishery. In the absence of scientific data and through concerns regarding the possibility of over-harvesting only a very limited number of entitlements to take sea urchin have been issued.

Sea urchins are harvested by both the recreational and commercial fishers.

Commercial Fishery Management

Since the assessment of the sea urchin fishery in 2005 the management arrangements have changed from an administrative perspective. Access to sea urchin is no longer granted by way of a Ministerial Exemptions under the Act, but by a formal fishery licence. For all intensive purposes this has not changed how the fishery is managed from an access and harvest point of view.

Due to the low harvest levels and small scale of the fishery, there are limited resources available to manage and develop the fishery. Limited resources also mean that a formal fishery management plan has not been developed.

PIRSA has continued to manage the fishery as a limited entry fishery, with non-transferable licences. The regulations that govern the management of the fishery are established in the *Fisheries Management (Miscellaneous Fisheries) Regulations 2007*.

Harvesting of sea urchins continues to be relatively small with only two dedicated sea urchin fishers, and five scallop fishers with an allowance to take sea urchins. The scallop divers have not reported any sea urchin harvest since 2001-02.

Each fisher is restricted to operating with one vessel and a maximum of two persons engaging fishing activities from the registered vessel at any one time being any combination of either the licence holder, a registered master other than the licence holder, and an agent of the licence holder.

Harvesting occurs from small vessels, and sea urchins are harvested by hand by means of divers operating on compressed air. Whole urchins are transported live to Adelaide and processed. Harvesters remove on average 40% of sea urchins from an area, and only harvest when yield is a minimum of 6.5-7%. Monthly catch data is supplied to SARDI and PIRSA.

Table 1. Summary of the South Australian Sea Urchin Fishery Management arrangements. .

Species harvested	<i>Heliocidaris erythrogramma</i>
Area	Areas surrounding Streaky Bay and Coffin Bay are the main harvesting locations.
Fishery status	Unknown
Gear	Harvested by divers using compressed air, by hand.
Number of licences	Two specific to sea urchin. Five scallop divers with a provision to take sea urchins.

Input controls	<ul style="list-style-type: none"> • Limited entry • Limited effort 1 boat per licence, agents per boat • Gear restrictions (hand harvest only)
Reporting	Monthly log sheets submitted, detailing each days diving.
By catch	None

Recreational Fishery Management

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. This survey indicated that recreational take of sea urchins is extremely small.

There are currently no recreational size, bag or boat limit restrictions in place for recreational fishers.

5. External Influences

There are no changes to an environmental issues, or influences outside of the fishery management agencies control.

6. Interaction with Protected Species

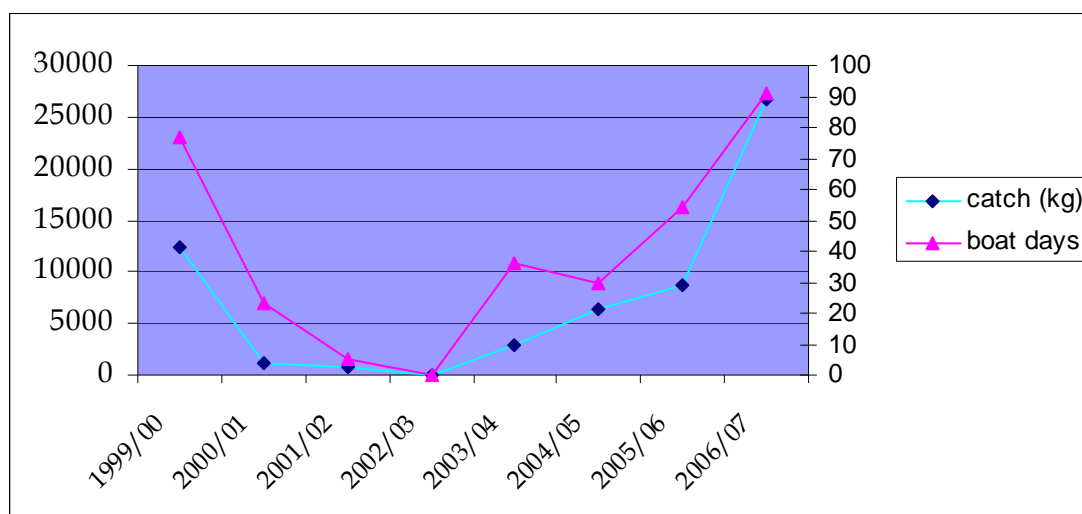
Interactions with protected species in this fishery are negligible.

All commercial fishers are required to report any interactions with threatened, endangered and protected species to PIRSA Fisheries and DEWHA. To assist fishers in this task, PIRSA Fisheries and the South Australian Research and Development Institute have developed a Wildlife Interaction Logbook and identification guide. A memorandum of understanding is currently being developed between PIRSA Fisheries and DEWHA regarding the reporting requirements relating to interactions.

7. Target Stock Status

The size and magnitude of the fishery is not thought to be large enough to impact negatively on the stock. Catch has increased significantly in the last year, while effort (boat days) have remained stable.

Figure 1: Historical catch and effort of sea urchin.



8. By-product and by-catch stock status

Each licence contains specific regulations outlining the methods of harvesting allowed (type and number of items of harvesting apparatus, exclusion zones) the south Australian sea urchin fishery is target specific, with negligible bycatch and therefore not believed to threaten any stocks of species inhabiting the same area (PIRSA Fisheries, 2007).

9. SEA URCHIN - Recommendation Summary

No	Recommendation	Progress	Target
1	PIRSA to advise DEH 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.	Ongoing	Ongoing
2	Within 18 months PIRSA to develop precautionary fishery specific objectives linked to performance indicators and performance measures for the target species and impacts on the ecosystem.	On hold	June 2007
3	PIRSA to develop and implement a robust system to validate commercial logbook reporting of catch and effort in the fishery	Moderate	June 2007

	within two years.		
4	PIRSA to develop and implement management strategies to address key gaps in the knowledge of sea urchin biology and ecology.	On hold	June 2008
5	Within 18 months, PIRSA to develop a process to improve estimates of recreational and Indigenous take and factor these into management arrangements.	Substantial	June 2007
6	Within 2 years PIRSA to develop and implement finer scale data collection and reporting and management measures to mitigate the risk of localised and serial depletion of sea urchins in the fishery.	On hold	June 2008

10. SEA URCHIN - Strategies and Actions

No	Proposed Strategies	Actions	Target
2	<ul style="list-style-type: none"> Assess and implement during development of management plan. 	Formalised industry working group to progress management plan. This issue on hold pending development of management plan.	June 2007
3	<ul style="list-style-type: none"> Review the current regulations governing Fish Processors. Develop consistent approach with other SA fisheries conducting similar validation trials. SARDI to continue validation of logbook returns. 	PIRSA Fisheries have commenced a review of the Fish Processor Regulations.	June 2007
4	<ul style="list-style-type: none"> Identify and prioritise gaps in knowledge of sea urchin biology and ecology during development of management plan. 	Formalised industry working group to progress management plan. This issue on hold pending development of management plan.	June 2008
5	<ul style="list-style-type: none"> Undertake a follow-up recreational survey. 	PIRSA have commenced a 12 month survey designed to be compatible with the national survey of 2000/01. Results from the survey will be available in March 2009.	June 2007

6	<ul style="list-style-type: none"> • Liaise with abalone fishery manager to discuss their operating arrangements • Discuss options with industry working group 	Formalised industry working group to progress management plan. This issue on hold pending development of management plan	June 2008
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11. References:

PIRSA Fisheries, 2004. Ecological Assessment of the South Australian Sea Urchin Fishery. Assessment report prepared for Environment Australia, against the Guidelines for the Ecologically Sustainable Management of Fisheries.