

am of the view that the *SPC Trochus Bulletin* should be broadened and changed into a multi-species bulletin with the proposed name changed to *SPC Molluscs (non-pearl) Bulletin*, keeping trochus as the 'anchoring' species. I believe the new title for the bulletin is the way for the future and the SPC Fisheries Information Section is in agreement.

Dear readers, it is your bulletin. I would like to hear your views on the proposed change to widen the scope and relevance of the *Trochus Bulletin* to the Indo-Pacific communities. All readers who are not keen on this change kindly send me their comments and views by the end of March 2002. If there is no opposition to the proposal, I will seek approval from Dr Tim Adams, SPC Marine Resources Director to change the title of the bulletin.

I look forward to hearing and receiving some interesting contributions to the *SPC Mollusc (non-pearl) Bulletin No. 9* from all of you.

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PS: This bulletin, as well as several other SPC Marine Resources Division publications, is available on SPC Website at: www.spc.int/coastfish



The Torres Strait trochus fishery

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Brief history

The Torres Strait trochus (*Trochus niloticus*) fishery is a small, single-species commercial and subsistence fishery, which is an important source of income for some islanders, especially women and children.

Although trochus has been fished for subsistence purposes for centuries, it is only since the early 1900s that this tropical marine snail was commercially harvested. The commercial harvest of trochus shell began in 1912 when trial shipments were sent from Torres Strait reefs to Japan, the United Kingdom and Europe. Within three years the annual catch was nearly 970 tonnes and by the 1920s the trochus fishery had spread south to new grounds along the east coast of Queensland, as far south as Mackay (Nash 1985).

Exported shell was used primarily in the manufacture of buttons and jewellery. The fishery continued until the mid-1950s but collapsed when plastics superseded natural shell products in the manufacture of buttons. The fishery experienced a boom in the late 1970s and early 1980s when renewed market demands from the fashion houses of Europe once again adopted the use of natural buttons on their shirts (Nash 1986).

Current fishery trends

Trochus is usually taken by free diving, although SCUBA and hookah may also be used. Fishers typically operate from dories/dinghies crewed by two to three Islanders. Reef top collection of trochus is possible at low tide.

Fishery participants comprise Australian traditional inhabitants only and there are approximately 47 Torres Strait Islander dinghies licensed to commercially fish for trochus in Torres Strait.

Participation in the fishery is relatively low at present, due largely to a recent decline in overseas market demand. Effort in the fishery, as with the adjacent fishery on the east coast of Queensland, is strongly influenced by market forces. Additionally, other fisheries, such as tropical rock lobster and sea cucumber, remain relatively more profitable for Torres Strait Islanders at this time.

While present activity in the fishery is relatively low compared with historic levels, small catches continue to be taken from the central and eastern islands. An unknown but relatively small quantity may also be taken by islanders for subsistence purposes.

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Records held by the prime mother-ship transporting trochus shell out of Torres Strait indicate approximate catches in 1999 of about 24 tonnes. Log returns from individual islands indicate that the commercial catch of trochus during 1998 was also relatively small at 1.8 tonnes. The 1997 catch was 17 tonnes, with a value of approximately AUD 0.1 million. The total catch for 1996 was 9.35 tonnes.

Management arrangements

Commercial and traditional fishing within the Australian section of the Torres Strait Protected Zone (TSPZ) is managed by the Protected Zone Joint Authority (PZJA) under the Commonwealth Torres Strait Fisheries Act 1984 (Fig. 1). The PZJA comprises the Commonwealth and Queensland Ministers responsible for fisheries. Fisheries resources of the TSPZ are managed in accordance with the provisions of the Torres Strait Treaty, ratified in 1985. The Treaty requires Australia and Papua New Guinea to cooperate in the conservation, management and optimum utilisation of resources of the region primarily for the benefit of traditional inhabitants of the two countries.

Management and licensing tasks are administered by the Australian Fisheries Management Authority and the Queensland Fisheries Service based out of Thursday Island and Brisbane. The Queensland Boating and Fisheries Patrol perform surveillance and enforcement duties on Thursday Island.

Participation in the Torres Strait trochus fishery is limited to traditional inhabitants. This fishery, as all other Torres Strait fisheries, has a policy that scopes for an increase in fishing effort — where there is latitude for such an increase — and is reserved exclusively for Torres Strait Islanders.

Management objectives

The objectives adopted for the Torres Strait Trochus Fishery are to:

- manage the resource so as to achieve optimum utilisation;
- maximise opportunities for traditional inhabitants of Australia; and
- encourage traditional inhabitants of the Torres Strait to participate in the trochus fishery.

Management regulations

A minimum and maximum size limit (8–12.5 cm) applies to trochus (except traditional fishing) and this is the most widely used management tool used throughout trochus fisheries. The minimum size limit is considered effective in protecting

small trochus and allows individual trochus to spawn once before capture. Size at first maturity for trochus in the Great Barrier Reef Region has been found to be 5.5–6.5 cm. Therefore this limit is considered effective in preventing overfishing.

A maximum size limit also applies in recognition that larger trochus make a major contribution to egg production. However, the effectiveness of the upper size limit in protecting the breeding stock has been questioned, primarily because trochus larger than the upper size limit will sooner or later die of old age, disease or predation (King 1995). Additionally, once these individuals have died, the upper limit will continue to protect large, reproductive animals only if fishing pressure on the fraction of the population in the legal size range (8–12.5 cm) is light enough to allow an adequate proportion of the population to grow beyond the upper size limit. Nonetheless, from an economic perspective, the maximum size limit is useful in maintaining a high quality of marketed shell.

Trochus harvesting is restricted to hand collection or by hand-held, non-mechanical implements; the use of underwater breathing apparatus is permitted. An annual total allowable catch (TAC) of 150 tonnes also applies in the fishery.

Condition of the fishery

No specific stock assessment work has been carried out in Torres Strait to determine the size of the standing stock and rates of recruitment into the stock. The status of trochus stocks in Torres Strait is uncertain. There is also little, if any, reliable catch per unit effort information for the fishery in Torres Strait and sustainable yield estimates for the fishery must therefore incorporate a high level of uncertainty in their assessment.

References

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- Nash, W.J. 1986. Commercial culture of the marine gastropod *Trochus niloticus* in Torres Strait: Its feasibility and prospects. In: A.K Haines, G.C. Williams and D. Coates (eds). Torres Strait Fisheries Seminar, Port Moresby, 11–14 February 1985. AGPS, Canberra. 53–76.

