

before the ceremony at the selected release site recommended by Kikutani et al. (1993) to avoid mortality of the trochus in the tanks due to disease or lack of food. The fishing vessel *Albacore*, which belongs to the Ministry of Fisheries, was used to transport the trochus for release. On 11 May 1994, the 800 un-tagged trochus were placed in 20 plastic containers with fresh algae and taken on board. Four hundred trochus were released on the reef of Fukave Island and the others on the reef of Euaiki Island.

Release ceremony

With his Royal Highness Prince Lavaka's attendance, the release ceremony of trochus took place on 30 May 1994. The Ministry of Foreign Affairs and Defence approved the use its patrol boat *Neiafu* for the ceremony. One hundred tagged trochus were released at the Fukave site.

Future direction

To make the transplantation successful, a regulation that bans the taking of trochus shell should be established. Follow-up surveys on the settlement and reproduction of the trochus should be conducted regularly.

To date, despite the numerous attempts to transplant trochus, there have been no records of adverse environmental, ecological or economic consequences (Nash 1993). However, in our trochus transplantation, the effects on the environment must be monitored carefully. It is also necessary to let the public know of the activities of the Ministry of Fisheries through various campaigns.

References

- Gillett, R. (1992). The August 1992 transplantation of trochus to Tonga and Niue. FAO/UNDP Regional Fishery Support Programme, Suva, Fiji.
- Gillett, R. (1994). The May 1994 transplantation of trochus to Tonga. Consultancy report.
- Kikutani, K., N. Manu, T. Tu'avao & Y. Taniguchi (1993). *Feasibility study of trochus and commercially important species (green snail) transplantation to the Kingdom of Tonga*. In: Report of the JICA short-term expert, JICA/ARDP. pp. 25–54.
- Nash, W.J. (1993). Trochus (Chapter 14). In: Wright, A. & L. Hill, eds., *Nearshore marine resources of the South Pacific*. Institute of Pacific Studies, Suva; Forum Fisheries Agency, Honiara; International Centre for Ocean Development, Canada. pp. 451–495.
- Sone, S. (1992). Preliminary survey report on trochus and the CIS transplantation in Tonga. JICA/ARCP. 9 pp.



Notes on trochus (Lola) shell production in South Sulawesi Province, Indonesia

*by Dr Rick Braley & Ir. Aspari Rachman,
Marine Science Education Project,
Ujung Pandang, Indonesia*

In the last issue (Bulletin #2) the production of trochus shell was presented for Maluku Province, Indonesia for the years 1987–1991.

Here, we present data from annual statistics for South Sulawesi Province obtained from the Provincial Fisheries Department (Dinas Perikanan, Ujung Pandang).

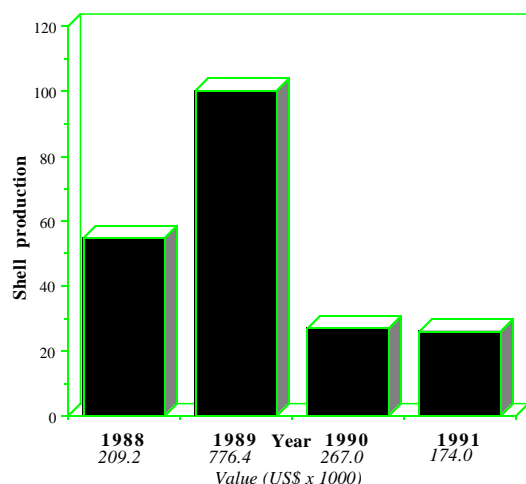
The figure on page 16 is based upon those records. Comparison with the Maluku records show a very similar pattern, with peak production in 1989 and a major plummet in 1990 and 1991.

The table is modified slightly from the Dinas Perikanan annual statistics to show the percentage

increase or drop in total shell weight from the previous year, and the annual value per tonne.

Records of trochus shell production for South Sulawesi Province

Year	% increase/decrease in total shell weight from previous years	U.S.\$/ tonne
1988	—	3,830
1989	-85.2	7,764
1990	-73.0	9,890
1991	-3.7	6,690



Trochus shell production (in tonnes) in South Sulawesi Province, Indonesia

The high price of shell per tonne in 1989 was certainly an incentive for increased fishing pressure here in South Sulawesi, and presumably also in Maluku.

However, the sharp decrease in total shell weight from 1989 to 1990 does indicate a serious reduction of stocks, especially considering that the value per tonne increased during this period.

This indication of serious reduction in stocks is reinforced by the ban on collection of trochus shell from 1992 onwards, by government regulation U.U. no. 5/1990. This ban includes other molluscs such as giant clams.

Recent trochus-related work by the SPC Coastal Fisheries Programme

by Dr Tim Adams,
Resource Assessment Section,
SPC, New Caledonia

Commonwealth of the Northern Marianas

The final fieldwork of the Inshore Fisheries Research Project took place in May 1994. A rapid reconnaissance of the trochus resources of Saipan, Tinian and Rota was carried out by a team of marine resources staff from several countries, and options for future management of the resource were recommended to the Department of Natural Resources, Division of Fish and Wildlife.

Saipan was seeded with trochus in 1938, and trochus were probably transferred to Tinian and Rota in the early 1950s by local fishermen, alongside the transfer to Guam. No commercial harvesting of trochus has been allowed in the Northern Marianas since a period of particularly heavy exploitation at the end of the 1970s, and one of the aims of the survey was to see if a return to commercial harvesting was advisable.

The team, consisting of Tim Adams (SPC Fisheries Resource Adviser), Virgil Alfred (Marshall Islands), Ian Bertram (Cook Islands), Asap Bukurrou (Palau) and Tom Flores (Guam), together with a varying number of CNMI Fisheries Officers, ably led by Richard Seman, spent four weeks surveying the three islands and completing the recommendations.

Most of the work consisted of rapid area surveys using timed swims and transects, but a small mark-recapture experiment was performed on one small patch-reef to demonstrate the use of this method for estimating abundance.

Tinian and Rota, with their narrow fringing reefs, proved to be poor habitats for developing dense populations of trochus, and most of the shells were found on the Saipan barrier reef. At the time of the survey many of the adult trochus on the Saipan reef-top demonstrated gonadal ripeness by oozing green eggs when picked up, and there were considerable numbers of approximately one-year-old juveniles in shallow water, particularly on areas of the reef remote from shore.

Formally, as with all IFRP country surveys, the report and its recommendations are confidential to the commissioning Government until we are given the all-clear, but SPC can correspond on methodological or scientific aspects of the survey. At this stage, any requests for the text of the draft report itself should be addressed to the Chief of the Division of Fish and Wildlife (fax (670) 322 3386).

Other trochus seeding news

A trochus survey was carried out on the island of Lifou, New Caledonia, recently under the auspices of the Université française du Pacifique and ORSTOM. Although the main island of New Caledonia is a prolific trochus-producer, *Trochus niloticus* appears to be completely absent from the offshore Loyalty Islands, and Lifou was seeded with trochus in 1989.

This particular seeding is interesting because it involved the transfer of juvenile shells resulting from aquaculture onto a reef where trochus was not already present – something that has apparently not been attempted anywhere else (the experimen-