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Trochus reseedling activities in Yap Outer Islands – an update

by Joe Fanafal and R. P. Clarke

Yap State is the second smallest of the four states that make up the young nation of the Federated States of Micronesia (FSM). It comprises 15 atolls and islands. The total population of the state is approximately 10,000, of whom 7,000 are concentrated on the main islands of 'Yap proper'.

Fisheries development activities in Yap State are increasing, and several fisheries projects predominantly aimed at pelagic species (i.e. tuna) are ongoing in Yap proper. These projects are expected to provide a number of jobs and economic benefits to Yap State's 'urban centre'.

However, in the outer islands, the prospects for economic development are less promising. One particular marine resource that may provide the basis of a 'fishery' for the outer islands is the harvesting of trochus or top shell.

The Yap State Marine Resources Management Division (MRMD) successfully implemented an outer-island trochus, *Trochus niloticus*, reseedling project in 1992. The primary objective of the project was to increase the number of islands and atolls on which trochus populations exist, thereby stimulating and

enhancing revenue-generating opportunities for isolated inhabitants of the outer islands of Yap State.

Currently, trochus harvests in Yap State are limited to Yap proper and the outer islands of Woleai and Ulithi. If sustainable populations of trochus are established, they can be harvested commercially, thereby enhancing income-generating opportunities in remote outer-island settings.

Presently such opportunities are scarce or dependent on government-provided jobs, copra, or handicrafts. A well-managed trochus fishery appears to be an ecologically and culturally viable mechanism for economic development in other Pacific Island states.

Project activity and accomplishments focused on seeding adult trochus on five outer-island sites (Elato, Lamotrek, Fachaulap, Sorol and Eauripik Atolls).

Three trips were taken on either regularly scheduled commercial merchant or chartered vessels. Adult trochus were provided from Ulithi and

Woleai Islands (N=2,500) with the assistance and permission of local Island councils. The trochus were maintained in holding tanks aboard each vessel for transportation to planned reseedling sites. Some mortality occurred during transit, but in most cases losses were not significant.

It is estimated that 1,607 adult trochus were successfully planted on four atolls, with an average of 321 individuals at each site (range 103–500). Average direct cost for each planting was approximately

US\$5,000 per site or US\$12.60 per seeded adult (excluding Eauripik where seeding was unlikely to be successful).

Monitoring will be required to determine both the relative and the economic success of the project. Data collected and reported here may assist in determining the economic and biological success of this type of development activity in the greater South Pacific region.

Trochus reseedling for the Yap State Marine Resources and Management Division, 1991–1992

Date seeded	Seedlings from	Island seeded	Number seeded	Mortality
21/11/91	Woleai	Elato	500	none
22/11/91	Woleai	Lamotrek	304	196
21/01/92	Ulithi	Sorol	500	none
22/08/92	Ulithi	Eauripik	103	397*
26/08/92	Woleai	Fachaulap	200	300*

* Note: High mortality, probably due to diesel fuel contamination of flushing water

Natural broodstock resources in Kosrae, Federated States of Micronesia

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T. niloticus have not been harvested in Kosrae since 1987 because stocks have been reduced by over-fishing. Broodstock animals were distributed from a trochus sanctuary to other sites by the Kosrae State Marine Resources Division (KMRD) in 1988. A survey to assess the status of the adult topshell in Kosrae was undertaken in 1993.

Methods

The survey was performed in September and October 1993. Eighteen sites on the coast of Kosrae were chosen for the survey (see figure).

The fixed-time swimming method was used for the survey (Nash 1985). The survey was limited to water 1–7 m deep on the reef slopes. This covered the ranges of water commonly accessible to free-diving topshell fisherman (Heslinga et al. 1984).

Map showing the survey sites on Kosrae, Federated States of Micronesia

