Assessment of Samoa's Trochus (*Tectus niloticus*) Fishery:

History, Status and Recommendations for Management

by

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Summary

Tectus niloticus, commonly known as trochus, was introduced to Samoan waters in 1990. Its introduction was aimed at establishing a fishery that would enhance the availability of marine resources for utilisation. Further introductions from Vanuatu, through Fiji, were made in 2003.

The 2014 Samoa Trochus Survey was conducted to assess and gather information on trochus population size, structure and distribution in Samoa's reefs. This report provides the current status of the resource, and outlines recommendations for the management of trochus for future harvest.

This report presents the current status of the trochus fishery, from the northeast to the western coastline of Upolu. The assessment was limited to these locations due to time and funding constraints. However, we are confident in making conclusions for Samoa as a whole, based on the market landing statistics that were collected from all the market outlets, including the Salelologa fish market in Savaii.

The survey covered six areas, with location names based on where the survey started and ended, or by village/district name:

1. Apia – Toamua
2. Fagalii – Vailele
3. Fagaloa (district of 3 villages Lona, Maasina, Ta'elefaga)
4. Faleasiu – Nofoalii
5. Faleolo – Mulifanua
6. Saoluafata (including Fusi and Faleapuna)

A total of 53 stations, covering 4.6 hectares of the northeast to western coastline of Upolu, and at depths of less than 15 meters, were assessed. The areas covered included the back reef, reef crest, reef front and outer shoal habitats of the barrier reef.

During the survey, a total of 20 invertebrate species were recorded, with 688 live *Tectus niloticus* (trochus) and 66 dead trochus recorded. The overall average trochus density for all sites combined was 146 ind/ha-1 ±46SE. Densities at all six survey sites are lower than the regional reference density of 500–600 ind/ha-1 for commercial exploitation.

The smallest live trochus measured was 15 mm (at Saoluafata site) and the largest 130 mm (at Faleasiu – Nofoalii site). The mean size for all sites combined was 95.0 ±0.9SE mm. Amongst the sites, average size differed within the order of 10–15 mm. Live trochus size distribution displayed a near-normal distribution.

Trochus is harvested, and its flesh is extracted and put into bottles of various sizes with sea water, and sold at market outlets. Trochus first appeared in market landing data in 2006, and production has gradually increased since then, until a slight drop in 2013 (which might be the impact of tropical cyclone Evan at the end of 2012), and increased again in 2014. On average, fishers collect about 100 live trochus shells every fishing trip.

The results from the in-water survey and the market landing data revealed that the trochus population has successfully established in Samoa more than 20 years since it was introduced. Management measures and options are recommended, and set out in this report, for the market potential of value-added shell and the future harvest of trochus. Formulating a management and development plan to ensure the trochus fishery is sustainably utilised and managed is also recommended.

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