

Laamu atoll mariculture project: Low profile cage for retaining sea cucumbers

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For grow-out studies on sea cucumbers, a cage was designed that 1) did not need to have netting above the water level during high tides (low profile), and 2) could easily be scaled-up to encompass as large an area as needed. A low profile cage was desired because of the strong currents in the reef flat area in which we were working. If the cage netting needed to be above the water level during high tides, the cage would have to be more than 2 m high. This height of netting would require an excessive amount of support to withstand the currents.

Two low profile cage styles were constructed. In both cage styles the plastic netting (1/2 inch (12.7 mm) mesh) was buried about 10 cm into the substrate, and then protruded about 30 cm above the substrate. The top of the netting was curled down over a rerod stake (8 to 10 mm diameter) so that the top looked like an inverted 'V' with the interior part of the 'V' being about 10 to 15 cm above the substrate (Fig. 1). The rerod simply provided support for the netting, and was placed at various intervals along the netting depending upon the strength of the current in the area where the cage was placed. In most areas, an interval of 0.5 to 1 m was adequate. The netting was attached to the rerod using cable ties and rope. The inverted 'V' was used to see if a sea cucumber crawling up the side of the netting might get wedged into this 'V' and then just crawl back down the netting to the substrate. Such events were observed several times.

The 'V' had to be tight enough so that the animal could not rotate through the 'V', and then crawl around and then out of the cage. This completed the first cage style. The second cage style simply added copper foil along the inner edge of the inverted 'V' to see if this would help retain the animals.

The low profile cages retained juvenile *Holothuria fuscogilva* and *H. nobilis*, but not *Stichopus chloronotus*, *S. variegatus*, *Actinopyga mauritiana* and *Thelenota ananas*. These later species climbed readily, and were able to avoid getting wedged into the in-

verted 'V'. In contrast, *H. fuscogilva* and *H. nobilis* did get wedged into the inverted 'V', and were retained at a level of about 95 per cent. The addition of copper foil did not improve retention rates for *H. fuscogilva* and *H. nobilis*, nor did it help retain the other species tested.

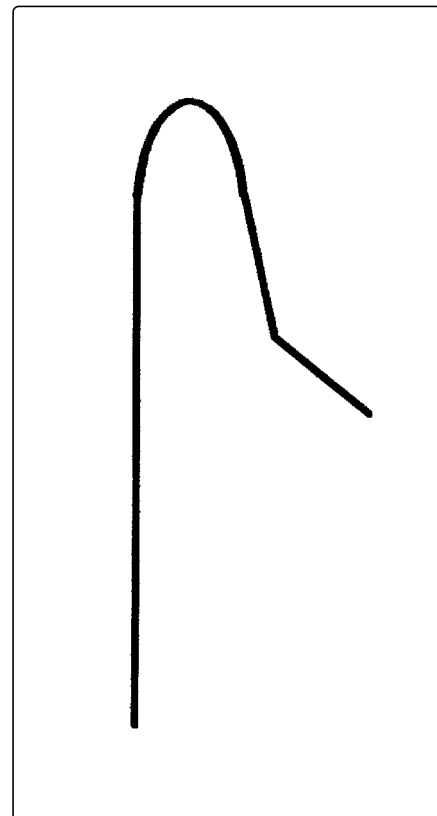


Figure 1

Rerod stake design for low profile cages

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