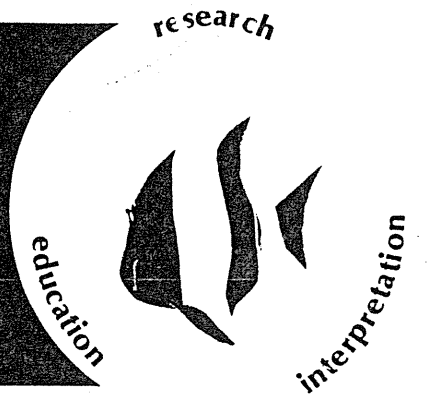
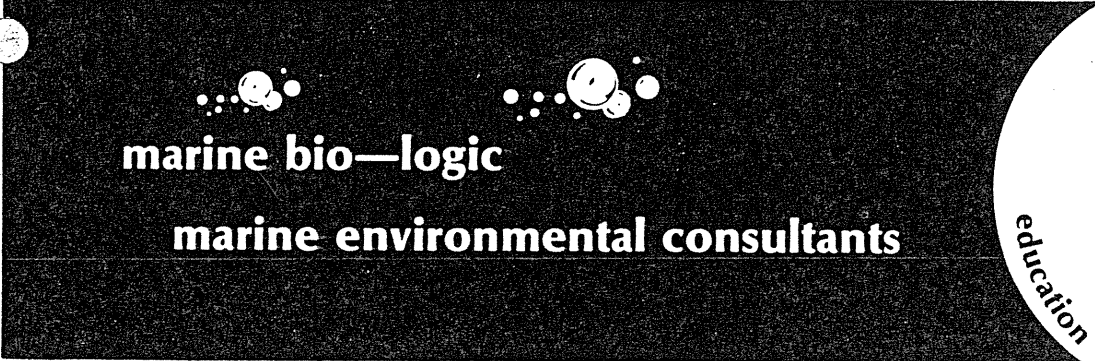


Kettle

1987b

9-5-11-37.



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02.02.87
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POSTSURVEY OF JOHN BREWER REEF
29/01/1987

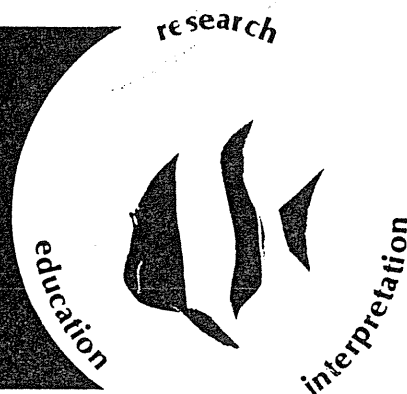
An exercise to determine crown-of-thorns starfish
distribution after a joint GBRMPA / RAN
eradication program.

Conducted by Brett Kettle for
MARINE BIO LOGIC

FFS 1 extra day \$200
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29. 01. 1987

POSTSURVEY OF *ACANTHASTER* ON JOHN BREWER REEF
MARINE BIO LOGIC 29/01/1987

AIMS:

To establish the status of the crown-of-thorns starfish (*Acanthaster planci*) infestation of John Brewer Reef after the recent starfish control exercise by the Great Barrier Reef Marine Park Authority and the Royal Australian Navy. *Viz.* to chart the position and density of any remaining adult populations. To comment on the effectiveness of the control exercise.

Methods:

In order to make a comparison between pre- and post-eradication surveys an identical manta survey technique was used.

The technique used was similar in most respects to the currently popular two minute manta tow method, with the exception that no board was used. Instead the towing rope was tied to the rear of the observer's (the author's) weight belt. Recent trials have suggested that this method affords greater manouverability and comfort to observers, thus reducing fatigue and enhancing the reliability of the observations. During these tows the observer (the author) noted tow counts at two minute intervals. The transect examined is marked on the accompanying reef outline, FIGURE 1, as transect A. This transect passed through the control area and was the only area found to contain adult crown-of-thorns starfish during the initial reef survey.

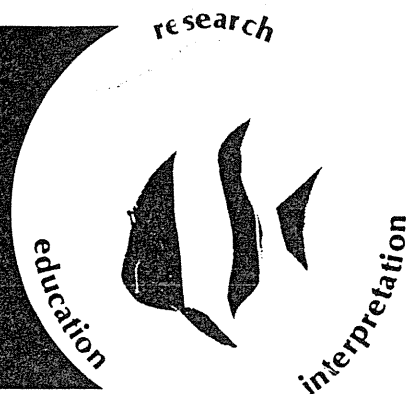
The habitat surveyed by belt transects and manta tows was restricted to the depth range zero to five metres.

Results:

Manta tow counts are included on the reef outline, FIGURE 1. Included in this figure are the initial tow counts in the same area of reef. The data presented require no statistical treatment.

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Discussion:

The initial estimate of starfish abundance (200-300 starfish) was proven by kill counts during the eradication exercise to be a gross under-estimation of the true starfish population. A final kill count of almost 1000 starfish suggested that a) the scientific survey was a poor estimate of the population size, and b) that the RAN had done a good job of eradicating the population.

The results of this survey suggest that even with a surprisingly high kill count, the Navy divers still missed a sizeable portion of the original population.

In the original survey twenty-eight starfish seen during two minute tows were interpreted to represent a population of 200 - 300 starfish. In fact c.940 were killed. In this survey seven starfish were seen. Estimations of the remaining population based on these counts and previous experience suggest that there could be as many as c.250 starfish remaining in the area.

The use of 100 m transect lines by the Navy divers would certainly have helped to improve their efficiency at covering the target area. Unfortunately these lines did not encompass the entire belt of the starfish distribution. Advice given to the navy divers was neglected.

Pre-survey report, page 5, last paragraph

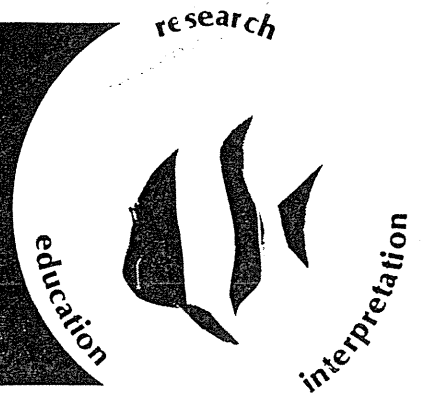
"Navy supervisors were requested to allow divers at either extremity of the transect to swim wide of the line searching for starfish higher on the reef crest or further into the lagoonal area."

As a result it is likely that the remaining population represents starfish that were outside of the removal area as well as those that were cryptic at the time of the eradication program.

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SUMMARY OF HOURS

THURSDAY 29/01/87

0930-1145	(2h15m)	travelling time on Reef Link.
1315-1355	(40m)	manta survey.
1445-1700	(2h15m)	travelling time on Reef Link.
2045-2245	(2h)	writeup.

TOTAL	7:10
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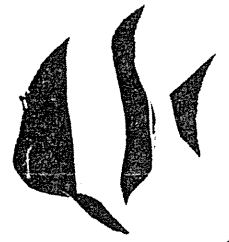
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FIGURE 1. POSTSURVEY OF JOHN BREWER REEF.

