

SOME PRELIMINARY OBSERVATIONS FROM A SURVEY OF THE SOFT  
SEDIMENT BIOTA OF THE INNER AND MIDDLE SHELF OF THE  
GREAT BARRIER REEF FOLLOWING CYCLONE WINIFRED

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Documentation of the effects of cyclones, hurricanes or even storms on the macrobenthos of soft sediment areas is extremely limited. Accounts have often come from higher latitudes than the Great Barrier Reef and have rarely included numerical data. Even the most relevant have been restricted to shallow water (Stephenson *et al.*, 1974 and 1977) and usually estuarine conditions (Andrews, 1973; Reish, 1965). They have primarily demonstrated the biological effects of drastic salinity reductions, and few have examined the effects of siltation in any detail. There is even less information on the physical effects of water movement.

The passage of cyclone Winifred over the Great Barrier Reef lagoon near Innisfail early in February 1986, provided an opportunity to document some of the effects on the macrobenthos of the area.

A survey was undertaken between February 9 and 12, using the methods indicated in Birtles and Arnold (1983), and Arnold and Birtles (1985). Ninety samples were obtained from two transects running between the coast and the inner line of reefs. The most intensive sampling, using grabs, sledges, trawls and Scuba diving, was concentrated at six sites along the southern transect, east of Mourilyan Harbour. Sites and samples are shown in Figure 1.

The infaunal samples have not been examined, but initial observations of the sledge and trawl samples shows strong evidence of zoning of the epifaunal assemblages across the shelf in a comparable manner to that demonstrated in other parts of the Reef (Arnold and Birtles, 1985). A diverse epifaunal component had survived to the time of sampling, although heavy siltation was apparent across the shelf with particularly marked effects in the shallower stations. Pronounced sand waves were seen at 33 m; their structure and attendant biota was examined.

Some preliminary observations will be presented from the survey and compared with information available from other areas.

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**Figure 1. Post-cyclone Winifred sampling. Stations 1404 to 1457, 9/2/86 to 12/2/86.**

**Transect 1:** Mourilyan Harbour 078° to the south end of Feather Reef: 14 nautical miles.

Station numbers	G1	G76	G75	G74	G73	G72	G71	G70
Distance from North Head, Mourilyan Harbour (nautical miles)	1	2.1	3.0	5.3	6.7	8.6	11.4	13.5
Depth (m)	13	17	22	27	29	31	38	45

Frame-supported van Veen grabs (three replicate 76 mm diameter cores from each)	1404	1405	1406	1407	1408	1409	1410	1411
Smith McIntyre grabs (.06 sq m)	1440 1441	1444 1445	1448 1449	1423 1424		1434 1435	1428 1429	
Modified Ocklemann sledges (.65 m gape)	1442 1443	1446 1447	1450 1451	1422 1425 1426 1427		1436 1437 1438 1439	1430 1431 1432 1433	
Six fathom "Yankee" otter trawls	1457	1456		1455		1454	1452	
Scuba dives						1453		

**Transect II:** Ella Bay 072° to north of Arthur Patches; 17 nautical miles.

Station numbers.	V11	V9	V7	G63	G64	G65	G66	G67	G68	G69
Distance offshore (nautical miles)	1	2.5	4.0	5.7	7.7	9.6	11.4	13.4	15.2	16.8
Depth (m)	3	12	22	25	27	29	31	38	41	35

Frame-supported van Veen grabs (three replicate 76 mm diameter cores each)	1421	1420	1419	1418	1417	1416	1412	1413	1414	1415
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