

OCEANOGRAPHY

1

Sedimentation between the Herbert River Delta and Orpheus Island

PERIOD: Jan 1981 - Dec 1982

ORGANIZATIONS: James Cook University, Department of Geology
Australian Institute of Marine Science

PROJECT LEADERS: Dr D. Johnson
Dr M. Risk

CONSULTATION AND LIAISON: Dr C. Cuff, Geology, JCU
Mr N.C. Davidson, Honours Student, JCU

SUPERVISOR: Mr. R. Kenchington
FINANCIAL SUPPORT: GBRMPA - \$5,150

OBJECTIVES

To detail the terrigenous-carbonate transition between the Herbert River Delta and fringing reefs at Orpheus Island. To quantify sediment inputs to the reef. To investigate the geochemical record in coral skeletons.

IMPLICATIONS/MANAGEMENT NEEDS

This study will indicate the extent of the effects of terrigenous impacts to the Great Barrier Reef lagoon and enable gradients of effects to be described. Such information is needed as background to monitoring activities and also to evaluate extreme inputs to the Great Barrier Reef lagoon from the land.

METHODOLOGY

Fringing reefs were investigated using a small boat to collect samples. Sediment traps were set on the reef. Bottom samples and push cores were taken between the delta and the reefs, and results integrated with earlier shallow seismic profiling studies.

STATUS

Field work has been completed. Final report is being prepared.

LOCALITY: Herbert River Delta - Orpheus Island

Drift Card Study of Great Barrier Reef Surface Currents

PERIOD: Jan 1981 - July 1983

ORGANIZATION: James Cook University, Department of Marine Biology

PROJECT LEADERS: Dr J.D. Collins

CONSULTATION AND LIAISON: Australian Coastal Surveillance Organisation
Mr. T. Walker, QNPWS

PROJECT OFFICER: Mr R. Kenchington

SUPERVISOR: Mr R. Kenchington

FINANCIAL SUPPORT: GBRMPA - \$70,040

OBJECTIVES

To produce an integrated picture of drift over the Great Barrier Reef lagoon. To establish correlations between drift and wind patterns.

IMPLICATIONS/MANAGEMENT NEEDS

This project will provide data which is important to understanding surface water movements in the Great Barrier Reef. It will enable production of predictive models for oil slick dispersal and dispersal of larvae. It will also provide a set of data upon which to base hypotheses for more refined studies of water movement in the Great Barrier Reef Region.

METHODOLOGY

80,000 drift cards will be released regularly over an 18 month period by Coastal Surveillance aircraft at 14 sites in the Great Barrier Reef Region. Computer analysis of data from returned drift cards will be undertaken and related to wind data throughout the Region.

STATUS

A report on the pilot study drops has been prepared for GBRMPA.

Walker, T.A. and Collins, J.D. 1981. A drift card study in the central region of the Great Barrier Reef Lagoon.

Drops of drift cards did not start until November 1981. The initial period of the project was spent on optimum card studies and gathering meteorological data.

A paper of relevance to the project was published earlier:

Walker, Terry and Collins, John. 1980. Surface currents of the central Great Barrier Reef studied. *Australian Fisheries* 39(12) 8-9.