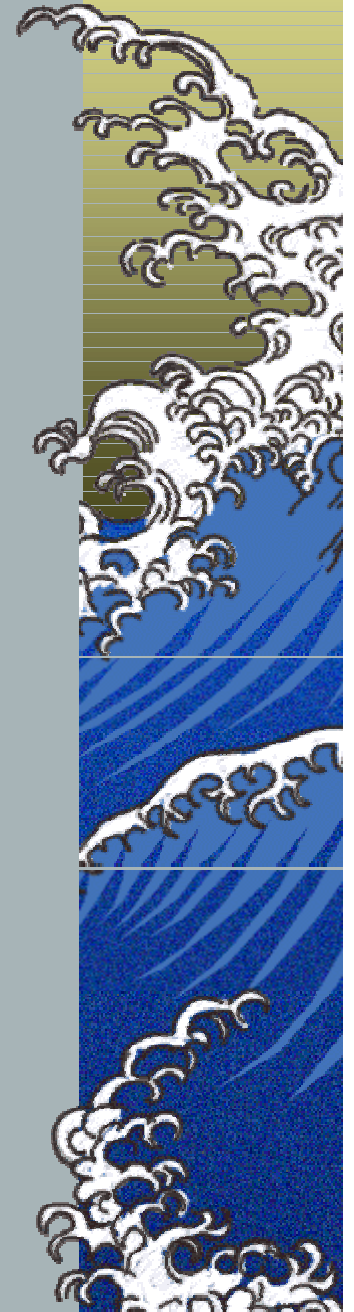


INSTITUTIONAL CAPACITY AND NATIONAL PRIORITIES IN CORAL REEF MONITORING IN BARBADOS

Angelique Brathwaite

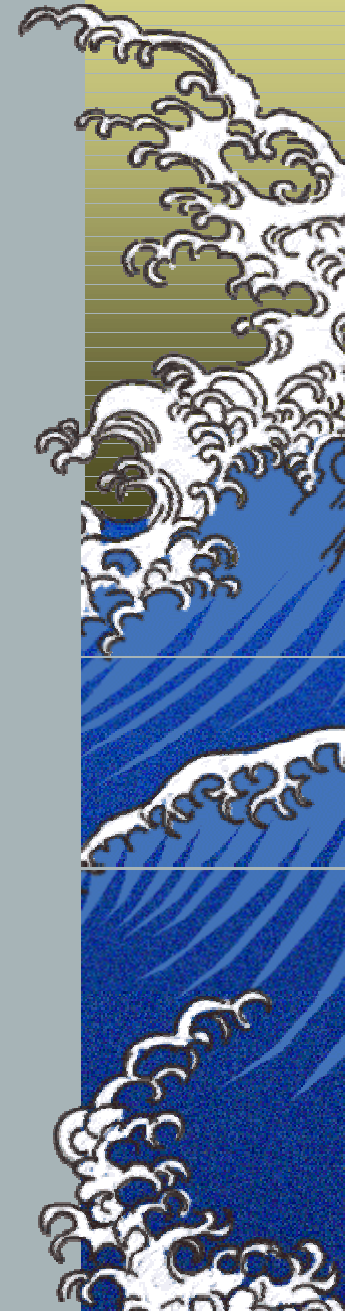


The Coastal Zone Management Unit

The Agency responsible for coral reef monitoring is the Coastal Zone Management Unit (CZMU) of the Ministry of the Environment, Energy and Natural Resources.

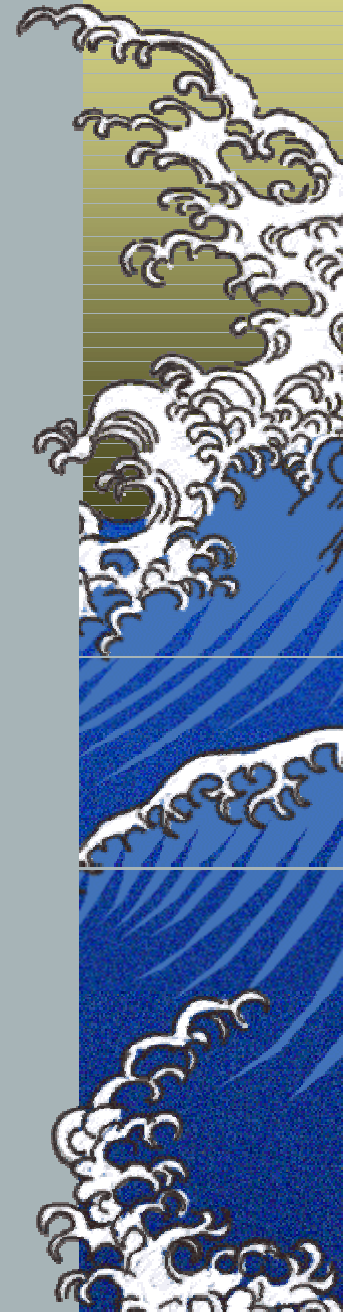
Our Mission Statement :

Working to ensure that the coast retains its vital and pivotal role in the Economic, Social and Physical Development of Barbados.



The Coastal Zone Management Unit

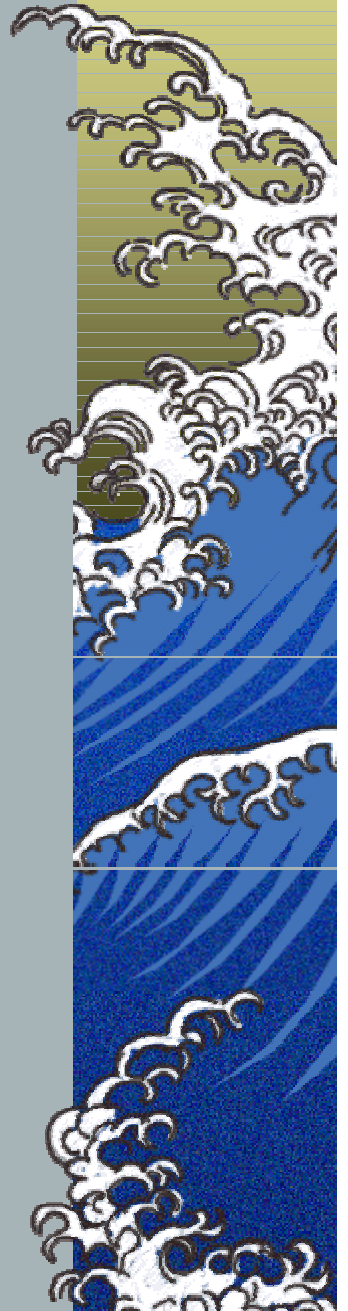
- ▶ *Set up in 1983 as a specialised Unit to deal with issues related to coastal erosion.*
- ▶ *Long term objective is to design and implement an “effective, comprehensive Coastal Zone Management Plan”.*



The Coastal Zone Management Unit

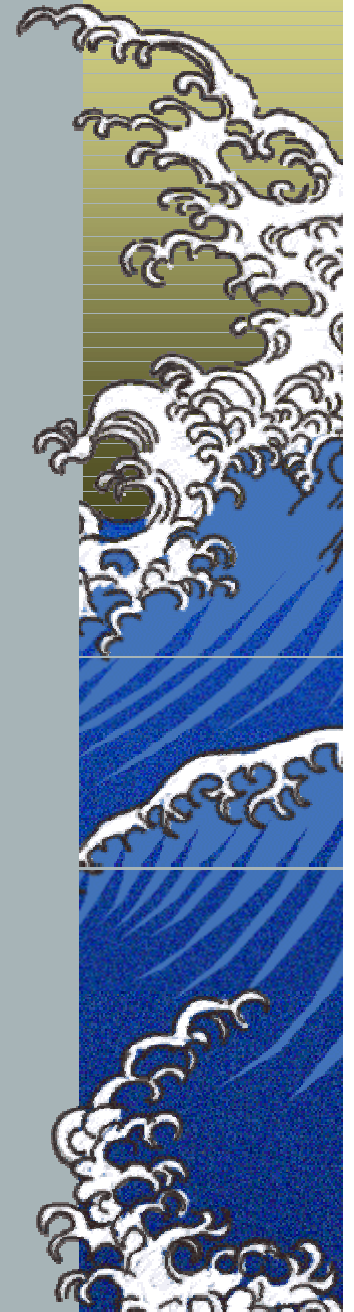
Project Execution

- ▶ *First major project work, was the 1983-84 Diagnostic and Pre-Feasibility Coastal Conservation Study, designed to determine and assess causes of coastal erosion and to make recommendations on remedial strategies. (funded by the IDB).*
- ▶ *Second project was the 1991-95 Feasibility and Pre-Investment Coastal Conservation Study, with an overall objective of researching and defining strategies for Beach Creation and Stabilization, Water Quality Improvement and Legal and Institutional Arrangements.*



The Coastal Zone Management Unit

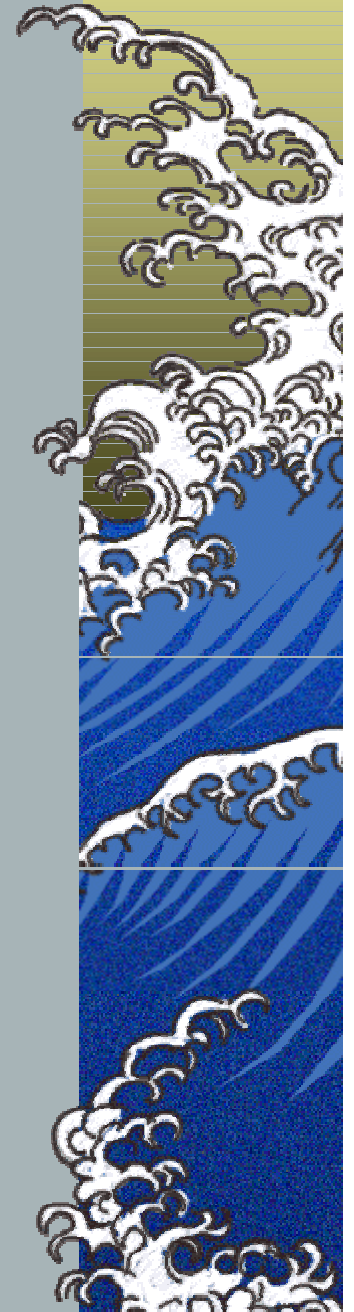
- ▶ *Third Project was the 1996-98 Diagnostic and Pre-Feasibility Study of the North, East and South East coasts.*



The Coastal Zone Management Unit

Present Work

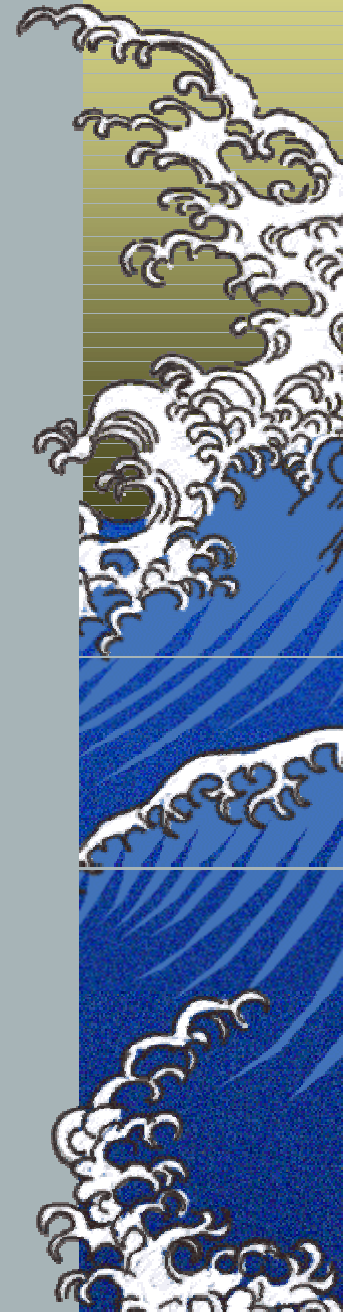
- ▶ *Oceanographic Assessments*
- ▶ *Coastal and Marine Research*
- ▶ *Coastal Engineering*
- ▶ *Development Control*
- ▶ *Education Outreach*



Personnel

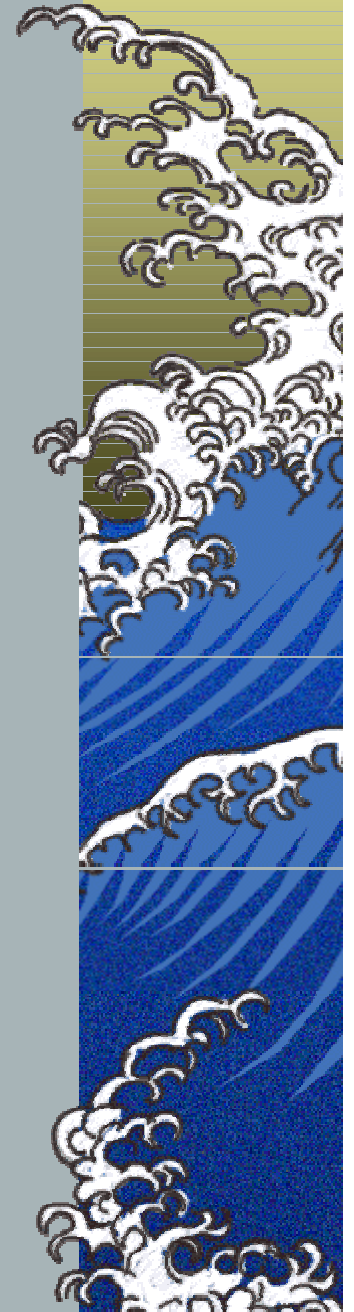
The CZMU technical staff is composed of :

- ▶ *Director*
- ▶ *Deputy Director*
- ▶ *Coastal Planner*
- ▶ *Coastal Engineer*
- ▶ *Civil Engineer*
- ▶ *Marine Biologist / SCUBA Instructor*
- ▶ *Water Quality Analyst/ SCUBA Instructor*
- ▶ *Research Officer/ GIS*
- ▶ *Hydrographic Surveyor*



Why Monitor Corals Anyway?

- ▶ *Studies coming out of the Bellairs Research Institute indicated that the most significant contributor to coral reef mortality was a deterioration in coastal water quality.*
- ▶ *In order for the Integrated Coastal Management Plan to effectively guide future management decisions, information was needed on the present conditions and resources of the marine environment.*



Coral Monitoring Programmes

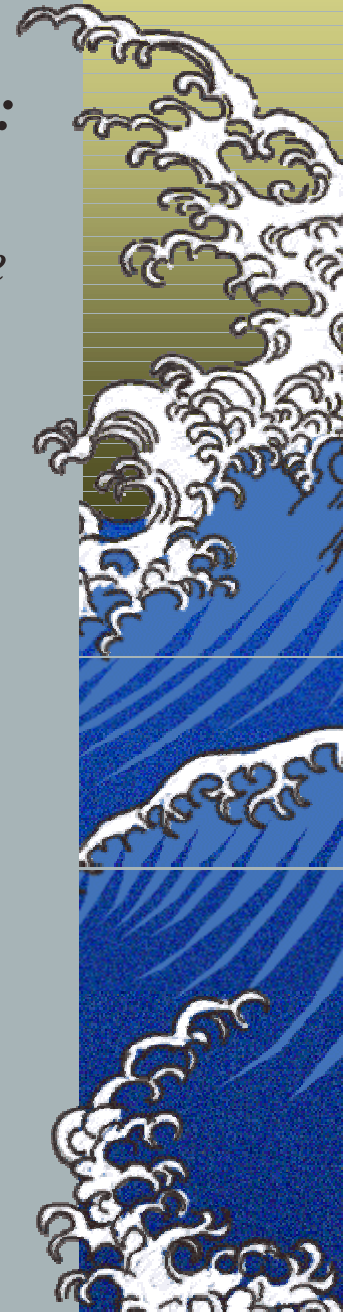
- ▶ *Preliminary information was taken from past research on the coral reef communities, primarily carried out by scientists attached to the Bellairs Research Institute.*
- ▶ *A comprehensive programme of coral reef surveys was initiated in 1987 in collaboration with the Bellairs Research Institute. This survey provided initial baseline data on the status of the reefs along the west and south coasts, and provided a basis from which all future reef monitoring was to be compared.*
- ▶ *Surveys have been carried out at 5 year intervals from this time.*



Coral Monitoring Programmes

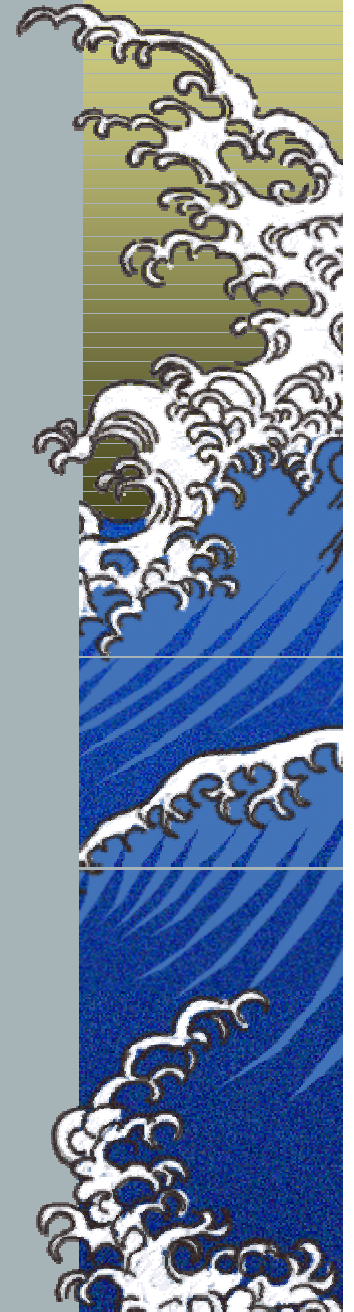
The specific objectives of the monitoring programme are:

- ▶ *1. To quantitatively document the nature and rate of changes in coral reef community characteristics on the west and south coasts of Barbados.*
- ▶ *2. To comment on possible causes of observed changes in coral reef community characteristics, and use this to guide management initiatives for coral reef communities in Barbados.*
- ▶ *3. To use the data collected in the programme as a means of evaluating the effectiveness of management initiatives implemented for coral reef communities on the west and south coast of Barbados.*



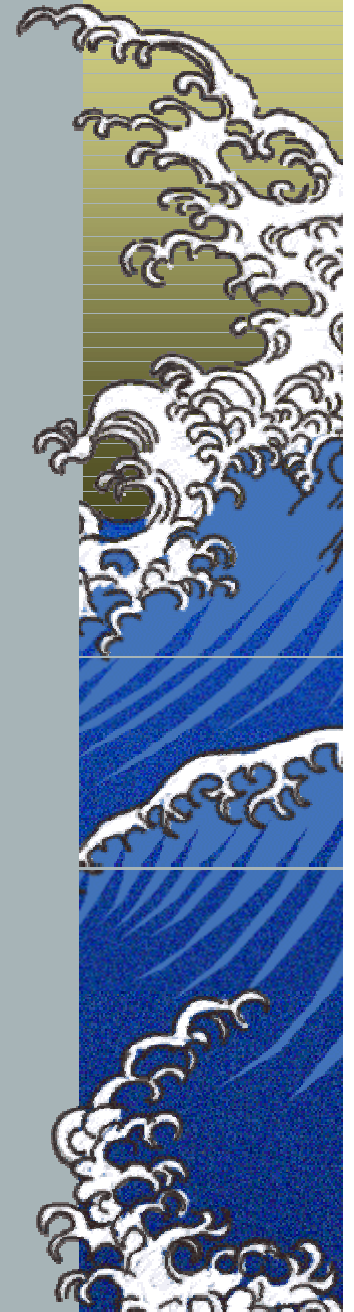
Coral Monitoring Programmes

- ▶ *Comprehensive coral reef studies were additionally carried out as part of the Coastal Conservation Project for the south and west coasts (1987) and the Coastal Conservation Project for the south east, east and north coasts of Barbados (1998). The objectives of these surveys were to:*
 - ▶ *Identify the key marine organisms and assemblages*
 - ▶ *Quantify the spatial extent of different habitat types*
 - ▶ *Characterise habitat types*
 - ▶ *Establish a monitoring scheme that allows changes in the reef ecology to be detected over the long term*



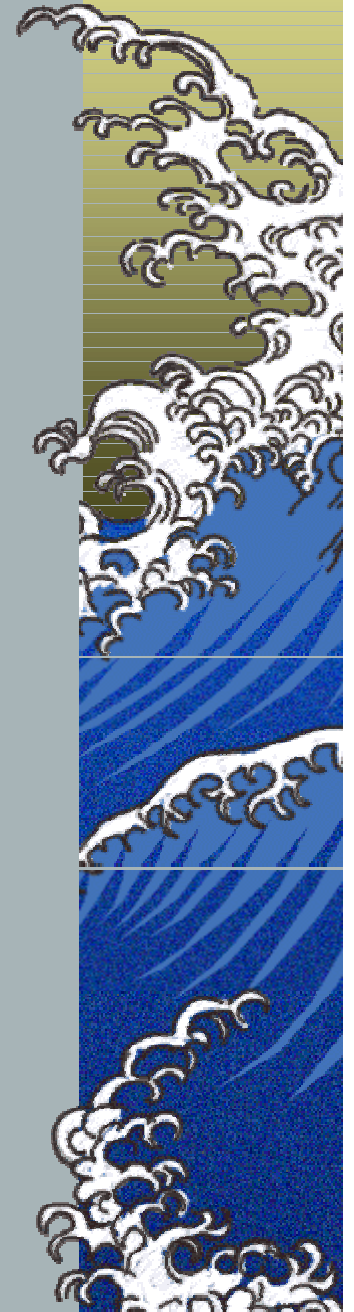
Coral Monitoring Programmes

- ▶ *As part of their regular duties, the marine research section of the CZMU monitors coral diseases at specific locations on the south and west coasts, bleaching events, and water quality linked to these specific events.*
- ▶ *Assistance is provided by the Folkestone Marine Park, Barbados Coast Guard, UWI, Fisheries Division, Mauby Divers (local dive club).*



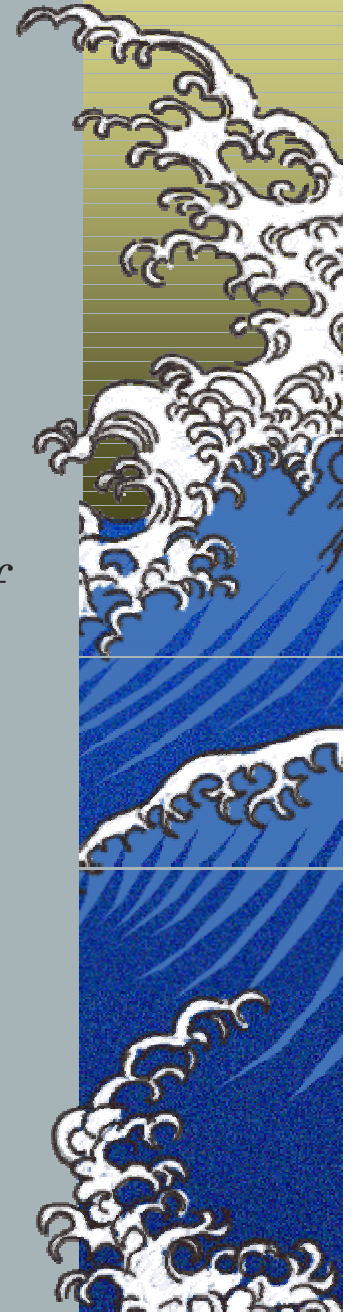
Why Has It Worked ?

- ▶ *Clear vision and strong champions for this vision of Coastal Zone Management - Dr. Leonard Nurse, Director of CZMU.*
- ▶ *Scientists with the ability to duel in the political arena.*
- ▶ *Preparation of a realistic budget for work needed (justified by ongoing coral reef research).*
- ▶ *Building the trust of both political parties, who allow the Unit to develop policies relating to the coastal and marine environment.*



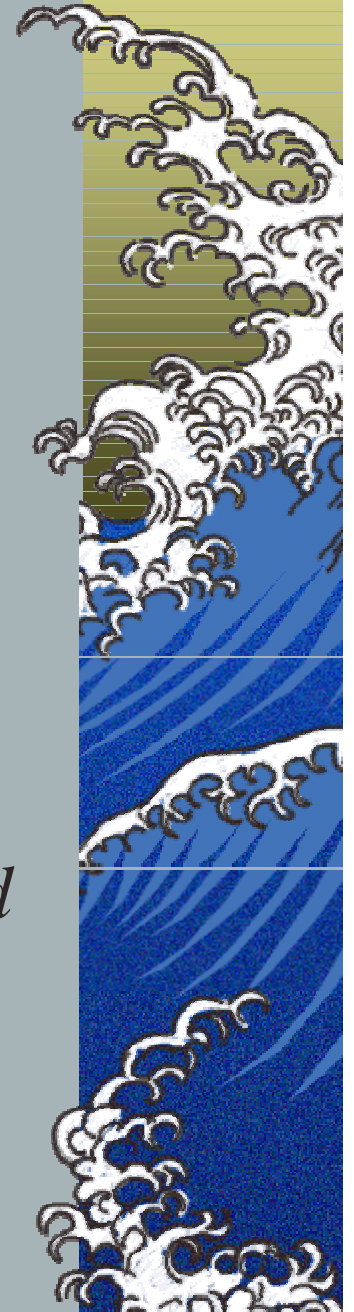
Why Has It Worked ?

- ▶ *Collaboration with other agencies. The strength of the ongoing coral reef programme relies on the partnership of a Government agency (whose 2 man marine research section have to address all aspects of marine ecosystem health i.e monitoring, policies, planning etc) with a marine research institute whose staff can dedicate their time exclusively to carrying out coral reef surveys.*
- ▶ *“In house training”, so that most of the CZMU technical personnel can assist with monitoring programs.*
- ▶ *“Out of house training” – Marine Park Officers, Barbados Coast Guard Personnel, Fisheries Officers, Recreational Divers*



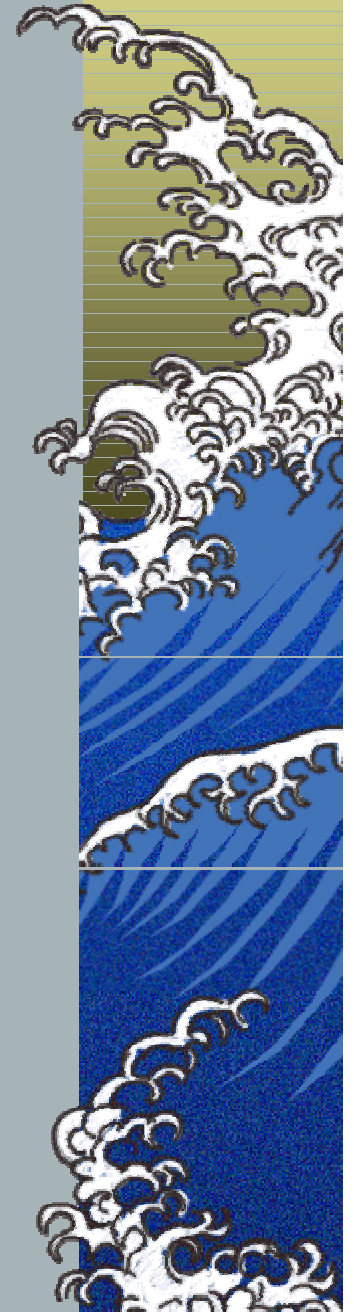
Institutional Strengthening

- ▶ *One of the deliverables from the Coastal Conservation projects was the Coastal Zone Management Act. Regulations are presently being developed to strengthen the Act*
- ▶ *Preliminary work has been carried out on a valuation of coral reefs. This value is in the process of being strengthened by partnerships with resource economists, as well as research carried out by the Unit on coral restoration and rehabilitation costs.*
- ▶ *Acquisition of a Marine Vessel*



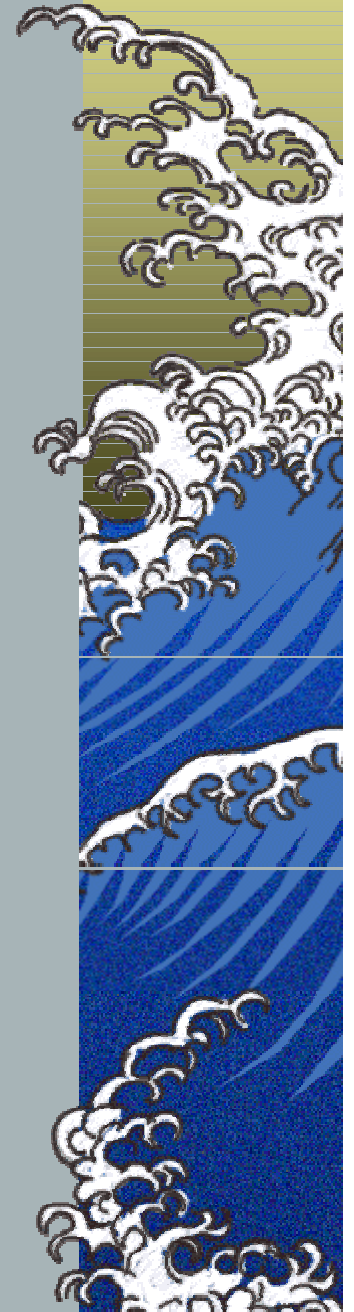
Institutional Strengthening

- ▶ *Acquisition of technical staff dedicated solely to coral reef monitoring and assessment.*
- ▶ *Improved linkages with relevant Governmental and Non- Governmental agencies.*
- ▶ *Proposed formation of a Marine Management Authority.*



CPACC Component 5 Considerations

- ▶ *There is already so much coral reef monitoring ongoing, that CPACC Component 5 will have to be integrated with another program – CZMU, CARICOMP.*
- ▶ *Stronger links with UWI – CERMES, in terms of assistance with monitoring and data analysis.*
- ▶ *Stronger links with other Government Agencies- Coast Guard, Fisheries, Marine Parks etc.*



THANK YOU

