Marine Environmental Program (MEP)
Sub Program 2
Ecological Surveys: Status and Trends

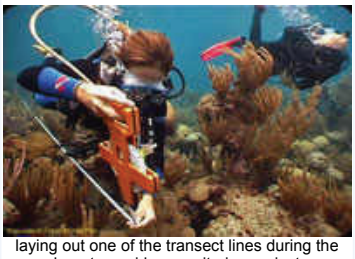
Within this sub-program, ecological assessments are made of the status of the predominantly hard bottom (coral reef) flora and fauna at multiple sites across the Bermuda platform (see LOCATION MAP). Survey locations include a range of key physiographic reef zones (i.e. inshore fringing coral reefs, nearshore and offshore patch reefs, outer rim reefs and at the deeper (20 m) main terrace reefs).

A number of survey techniques are used, including underwater video surveys (**Long-Term Video-Monitoring Program**), line and chain intercept transects, and photoquadrat analysis, depending upon the questions being addressed. Particular attention is paid to potential pollution hot-spots such as the Castle Harbour bulk waste and incinerator ash foreshore reclamation site, and the Seabright Point sewage outfall site.

Regular assessments/measurements in future years will aid in identifying trends associated with local anthropogenic factors (i.e. pollution), and also with regional and global factors (such as bleaching events and coral disease outbreaks). The program is integrated closely with Sub-program 1 (Physico-Chemical Analyses), involving regular assessments of water temperature (at all sites) and water quality (at some sites).

The base methodology used is video-monitoring, which is conducted at permanent monitoring sites across the platform (see images opposite). In the laboratory, still images from the video are analyzed using CPCe (Coral Point Count with Excel extensions, (NCRI, FL, US). During image processing, the benthic cover underlying each of 10 points (identified as alphabetically labeled red cross hairs in the image), is placed into one of 12 pre-determined categories. Corals are identified to species level. The % of the reef that is covered by live corals is calculated long with a more detailed picture of coral community composition.

SCUBA diver videotaping along a transect line and being watched by a small Remotely Operated Vehicle (ROV)



laying out one of the transect lines during the long-term video-monitoring project

still image taken from video footage showing colonies of the brain coral *Diploria strigosa*

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