Assessment of video transect and CPCe methodology as a useful management tool for coral monitoring in Tobago
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Aims & Objectives:

This project was carried out to evaluate the effectiveness of the video transect technique and CPCe analysis as a method of collecting and analysing monitoring data. The project compared intra-site and inter-site variations to determine its usefulness and suitability for monitoring reef health in Tobago.

Advantages and disadvantages of these methods were discussed, in relation to their technical and economic requirements, as well as their limitations in terms of user-friendliness, data capture and analysis in the context of a small island developing state (SIDS).

Method:

- 4 suitable monitoring sites were chosen that satisfied the local management needs e.g. popular dive sites, and/or high levels of pollution or sedimentation. These reefs were Mount Irvine, Buccoo, Ketchup and Kariwak (*Figure 1*).
- At each site, 3 permanent stations were positioned using steel markers (*Figure 2)* and a copper chain was attached to each end to create a 20m transect.
- Each transect was then filmed (*Figure3)*
- The video footage from each transect was cut into stills, on average 50 per transect, and analysed using CPCe software.
- The CPCe software highlights 20 random points (labeled A-T) on the still photograph which the user must identify *(Figure 4)*.

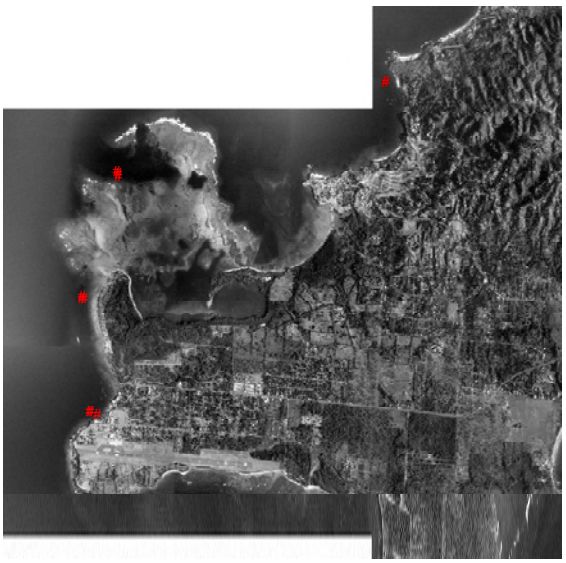

Figure 1: Map of monitoring sites in Tobago

Figure 2: Barry (BRT staff) hammering in a steel marker

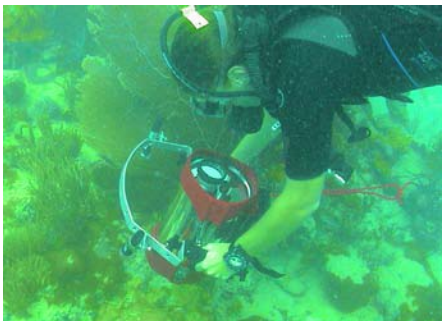

Figure 3: Filming Ketchup Transect 3

- The data was then integrated into Excel for statistical analysis of intra-site and inter-site variation, as well as comparison with other monitoring data and known sources of pollution/silt.
- The economic limitations, data capture and analysis considerations were then discussed to highlight potential advantages and disadvantages of this method.

Initial Findings:
Inter-site variation was recorded on all sites for coral cover, sponges, turf and macroalgae, suggesting the reefs are patchy and non uniform.
Comparison of inter-site variation showed a moderate coral cover, approximately 20%, and high species diversity at three of the four sites. Low coral cover and high macroalgae cover on Buccoo Reef could be attributed to point source pollution into Buccoo Bay and Bon Accord Lagoon.

In conclusion, this method has been shown to be an excellent tool for spatial monitoring. Benefits of this method are evident from the data collected, which can be kept and archived for future studies. The data also suggests that this method is an effective and accurate temporal monitoring technique for a small island developing state such as Tobago.

Future Management Options
This project is a potential long term option for BRT which, if implemented, would allow the comparison of the different monitored reefs both spatially and temporally. This would help indicate changes in reef cover over time and can therefore help to identify possible areas requiring management. These include a control on sewage, construction and sediment run off; fishing and reef use, and the need for more MPA's. It could also highlight areas where transplanting and reseeding reef projects, to help re-fertilise the reef, would be most valuable.