

The Population Dynamics of *Acropora palmata* South West Tobago 2005

Abstract

The Caribbean is host to a decline in coral species diversity and abundance particularly, *Acropora palmata*. This species is one of the few remaining reef builders which are ecologically important in terms of current and future prospects of reef ecosystem development. Population dynamics (abundance, size and morphological status) knowledge is essential to produce future conservation techniques. This includes the roles of abiotic (depth and temperature) and biotic (predation and disease) interactions.

A total of eight transects were used to survey the population dynamics of *A. palmata* at Buccoo Reef Bay and Mount Irvine Bay situated on at the South West of Tobago. Buccoo Reef Bay contained more, branching and fragmented colonies than Mount Irvine Bay in 2005. However, there has been a change in both populations from large, old colonies to small, young colonies that exhibit a dramatic loss of live tissue between 2004 and 2005. It was deduced this was a combined effect of physical damage, interacting environmental regimes and sampling effort. Mount Irvine Bay was deeper with an average 30⁰ C whilst Buccoo Reef Bay contained more varying depths with an average 29⁰ C. Colonies are heavily inflicted by different syndromes with parrotfish damage one of the major controlling factors. The study also established a relationship between the occurrence of the corallivore snail, *Coralliophila abbreviata* and the presence of white band disease. More information is required on other abiotic / biotic relationships with a coral monitoring program recommended to aide the conservation of such an important species.