

Toledo Institute for Development & Environment (TIDE)

December 2009 – Bleaching Summary Report for
Port Honduras Marine Reserve (PHMR)

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And

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Introduction

On the 16th and 17th December 2009, a bleaching survey was conducted at six sites within the Port Honduras Marine Reserve (Table 1). Two surveyors (Marlon Williams and Vanna Noralez) used the weighted-bar swimming transect (WBST) to assess the extent of coral bleaching at each of the sites. At each site, 200 colonies, along two transects, were assessed for paleness, partial bleaching and whole bleaching (>90% of colony bleached). At Frenchman Caye, only 147 colonies were assessed as the dive had to be aborted due to bad weather.

Table 1: GPS position and survey method utilised at each of the 6 sites within PHMR.

Site Name	Max Depth (m)	Latitude (°)	Longitude (°)	Survey Date
East Snake Caye 1 (ESC1)	4.8	16.20778	-88.50805	16/12/2009
East Snake Caye 2 (ESC2)	2.0	16.20988	-88.50607	17/12/2009
West Snake Caye (WSC)	4.5	16.190584	-88.569771	17/12/2009
South Snake Caye (SSC)	3.6	16.180972	-88.56440	17/12/2009
Middle Snake Caye (MSC)	3.3	16.203364	-88.55108	17/12/2009
Frenchman Caye (FMC)	4.8	16.18109	-88.6364	16/12/2009

Results

The species surveyed differed at each of the 6 sites (Figure 1). The dominant species along the transects were *Porites astreoides*, *Siderastrea siderea* and *Agaricia tenuifolia* colonies. *Montastraea cavernosa*, *Montastraea annularis* and *Montastraea faveolata* were also common species observed at each of the sites.

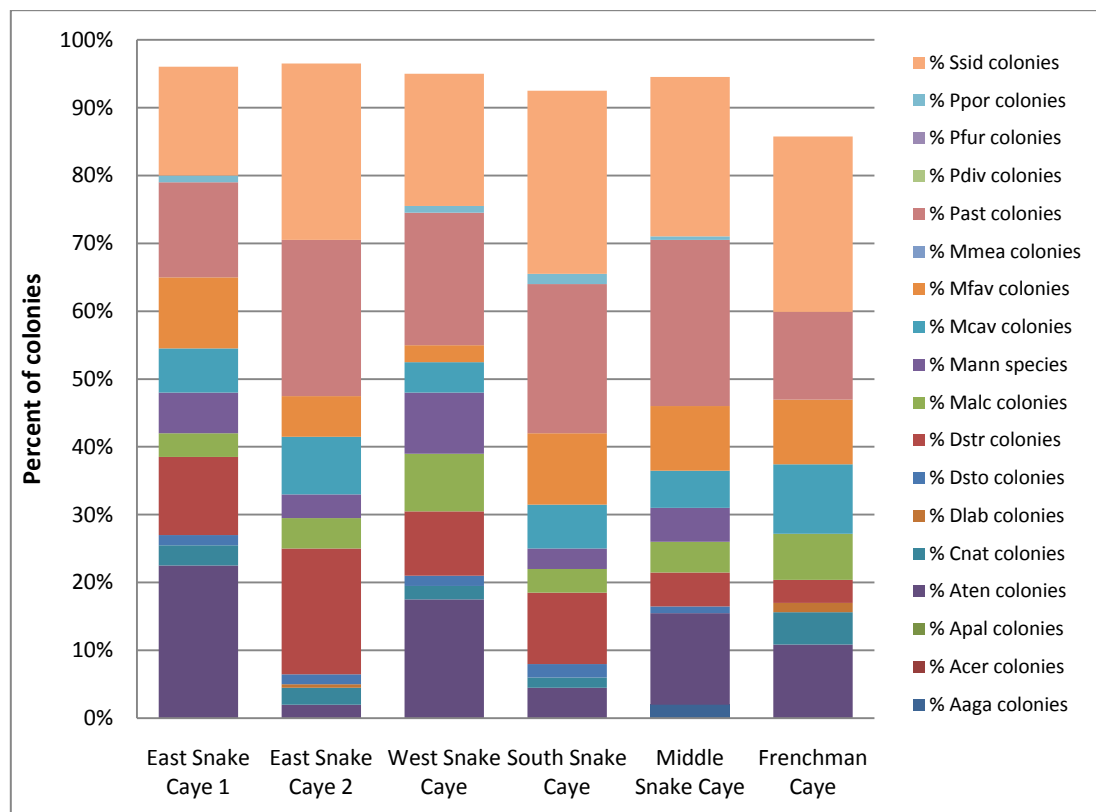


Figure 1: Species surveyed at each of the six sites.

The highest number of colonies with signs of bleaching (paleness, partial bleaching or whole bleaching) were observed at East Snake Caye 1 and East Snake Caye 2, where 16% and 15.5% colonies were affected, respectively (Figure 2). However, Frenchman Caye also had approximately 13% of colonies affected by bleaching.

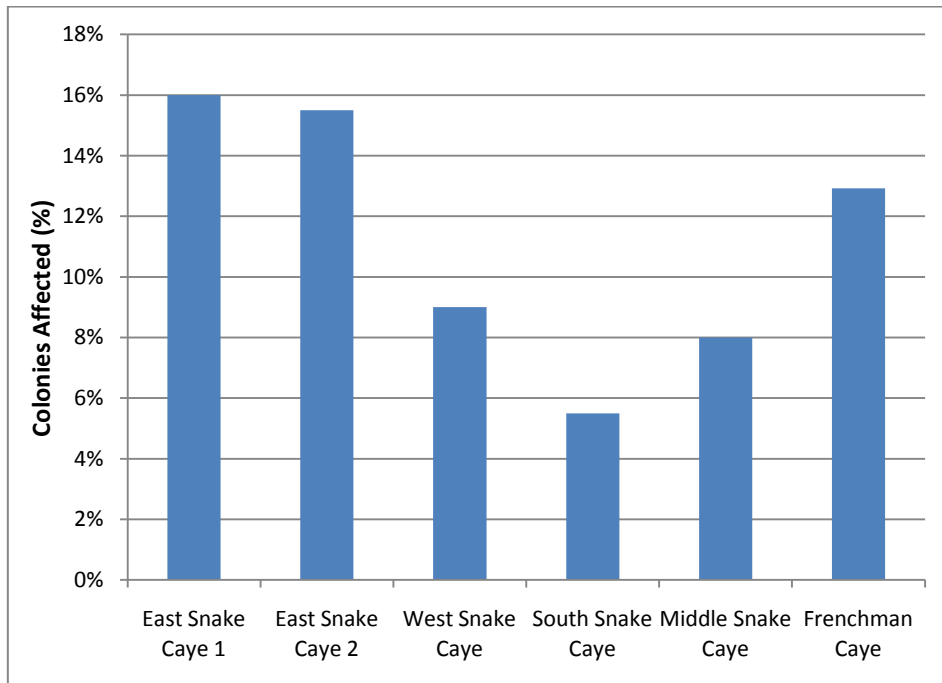


Figure 2: Percent of colonies at each of the 6 sites within PHMR affected by bleaching (pale, partial and whole bleached).

Of the total number of colonies assessed at each site, various proportions showed different levels of bleaching (Figure 3). The highest number of pale colonies was observed at East Snake Caye 2 and the highest number of partially bleached colonies (< 90% bleached) was recorded at East Snake Caye 1. Whole Bleaching of corals (over 90% of a colony bleached) was not observed at any site. South Snake Caye was least affected by bleaching with less than 6% of colonies affected by pale or partial bleaching.

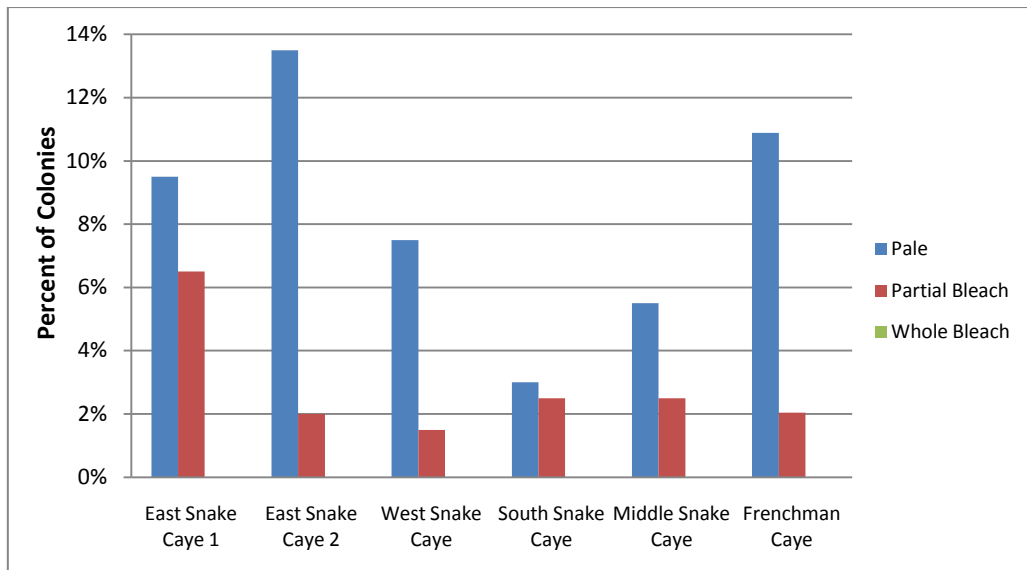


Figure 3: Proportions of colonies within each bleaching category at 6 sites within PHMR during December 2009.

In comparison to the October 2009 survey, the percent of colonies within each bleaching category was lower at all six sites, except East Snake Caye 1, where 6.5% of colonies were observed to be partially bleached in December compared to 5.5% in October (Figure 4). Notably, whole bleached colonies were not recorded at any site during the December surveys. An average of 11% of colonies surveyed was affected by bleaching (pale, partial and whole bleach) in December 2009 compared to 18% in October 2009.

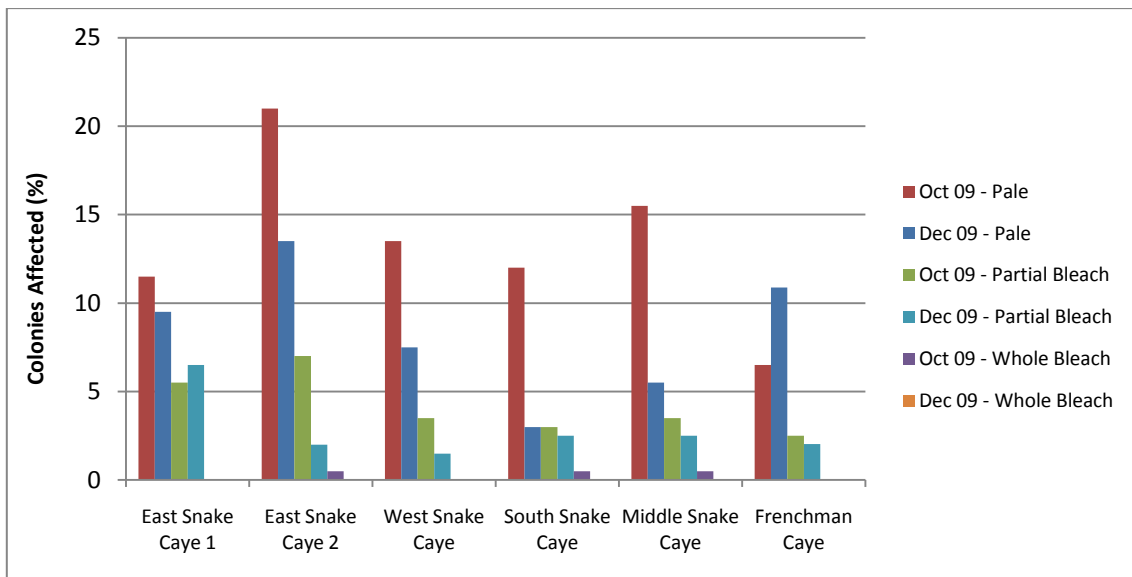


Figure 4: Percent of colonies surveyed showing signs of bleaching at each of the 6 sites within PHMR during October and December 2009.

Conclusions

Colonies affected by bleaching were observed at all six sites surveyed in December 2009, however, there was a reduction in the severity of bleaching and the number of colonies affected compared to the October 2009 survey. In December, the most severely affected sites were East Snake Caye 1 and East Snake Caye 2 with approximately 16% of colonies affected by bleaching and the least affected site was South Snake Caye, with less than 6% of colonies exhibiting signs of bleaching. The percent of colonies affected by bleaching (pale, partial and whole) was less than that observed during the October surveys, 11% versus 18%, respectively, indicating that the reefs are recovering from this bleaching event. Despite East Snake Caye 2 showing the highest level of bleaching during the December surveys, it was also the site showing the most recovery with a decline from 57% of colonies affected in October to 15.5% of colonies affected in December.