

Toledo Institute for Development & Environment (TIDE)

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

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And

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Introduction

On the 1st and 2nd October 2009, a bleaching survey was conducted at six sites within the Port Honduras Marine Reserve (Table 1). Two surveyors 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%).

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 |
|--------------------------|---------------|--------------|---------------|-------------|
| South Snake Caye (SSC) | 3.6 | 16.180972 | -88.56440 | 01/10/2009 |
| East Snake Caye 1 (ESC1) | 4.8 | 16.20778 | -88.50805 | 01/10/2009 |
| East Snake Caye 2 (ESC2) | 2.0 | 16.20988 | -88.50607 | 01/10/2009 |
| Middle Snake Caye (MSC) | 3.3 | 16.203364 | -88.55108 | 02/10/2009 |
| West Snake Caye (WSC) | 4.5 | 16.190584 | -88.569771 | 02/10/2009 |
| Frenchman Caye (FMC) | 4.8 | 16.18109 | -88.6364 | 02/10/2009 |

Results

The species surveyed differed at each of the 6 sites (Figure 1). The transects at all sites were dominated by *Porites astreoides* and *Siderastrea siderea* colonies except East Snake Caye 1, where the transects were dominated by *Agaricia tenuifolia* colonies. *Montastraea cavernosa* and *Montastraea annularis* were also common species observed along the transects.

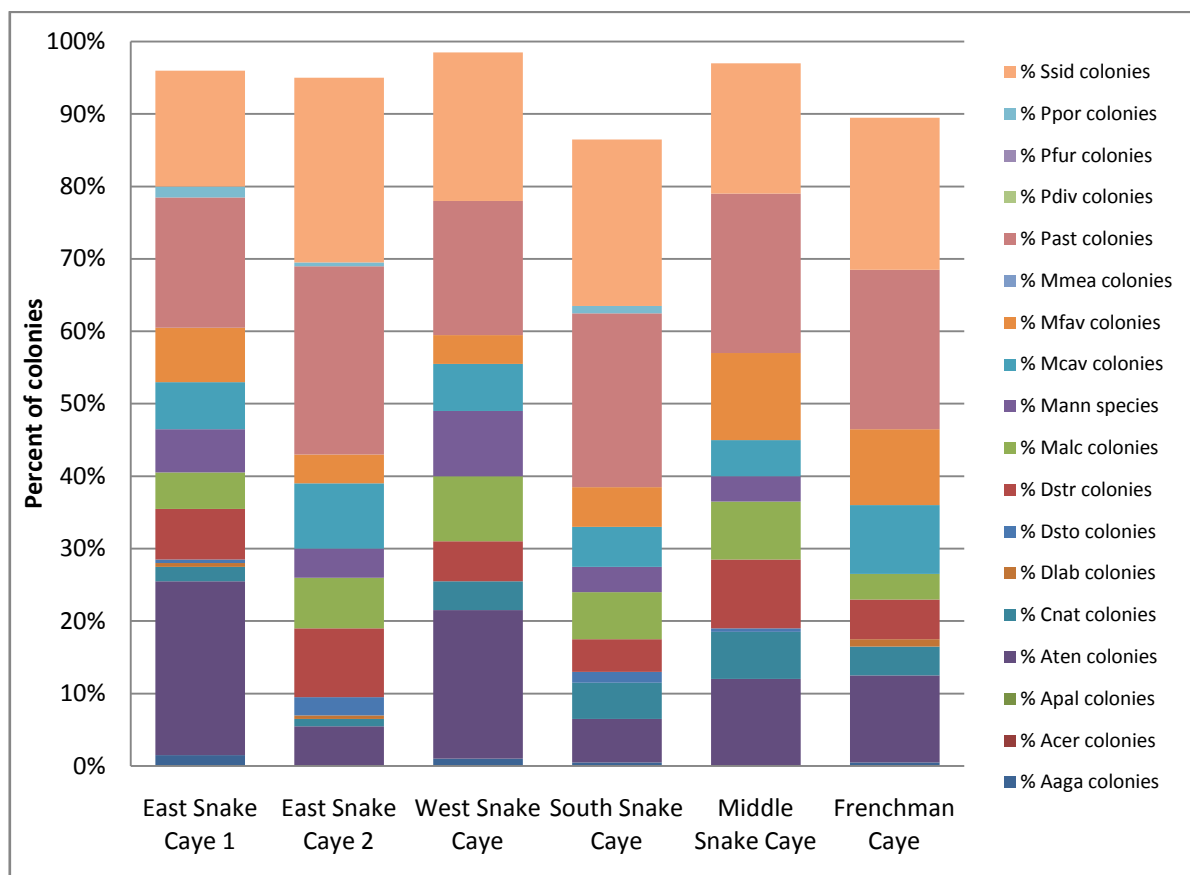


Figure 1: Species surveyed at each of the six sites.

The highest number of colonies with signs of bleaching (paleness, partial bleaching or whole bleaching) was observed at East Snake Caye 2, where 57 out of 200 colonies were affected (Figure 2). However, Middle Snake Caye also had 39 out of 200 colonies showing signs of bleaching. East Snake Caye 2 and Middle Snake Caye are the two shallowest sites surveyed at 2m and 3.3m deep, respectively.

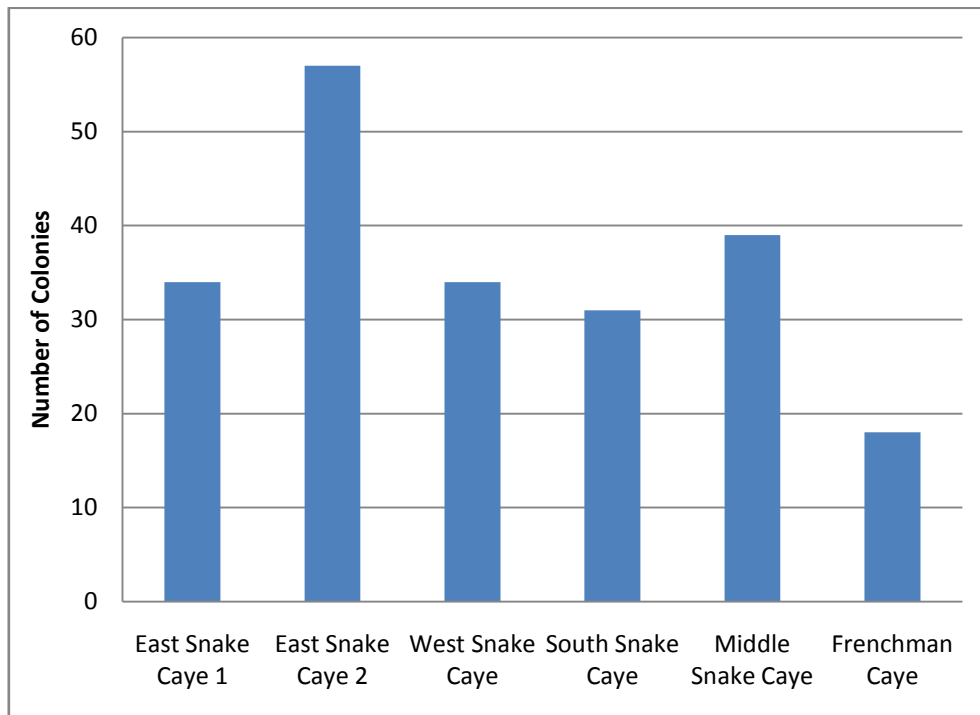


Figure 2: Total number of colonies at each of the 6 sites within PHMR affected by bleaching (pale, partial and whole bleached).

Of the total number of colonies assessed at each site, various proportions showed different levels of bleaching (Figure 3). The highest number of pale and partially bleached colonies were observed at East Snake Caye 2. Whole Bleaching was observed at three sites, East Snake Caye 2, South Snake Caye and Middle Snake Caye, where 0.5% of colonies displayed over 90% bleaching. Frenchman Caye was least affected by bleaching with less than 10% of colonies showing pale or partial bleaching.

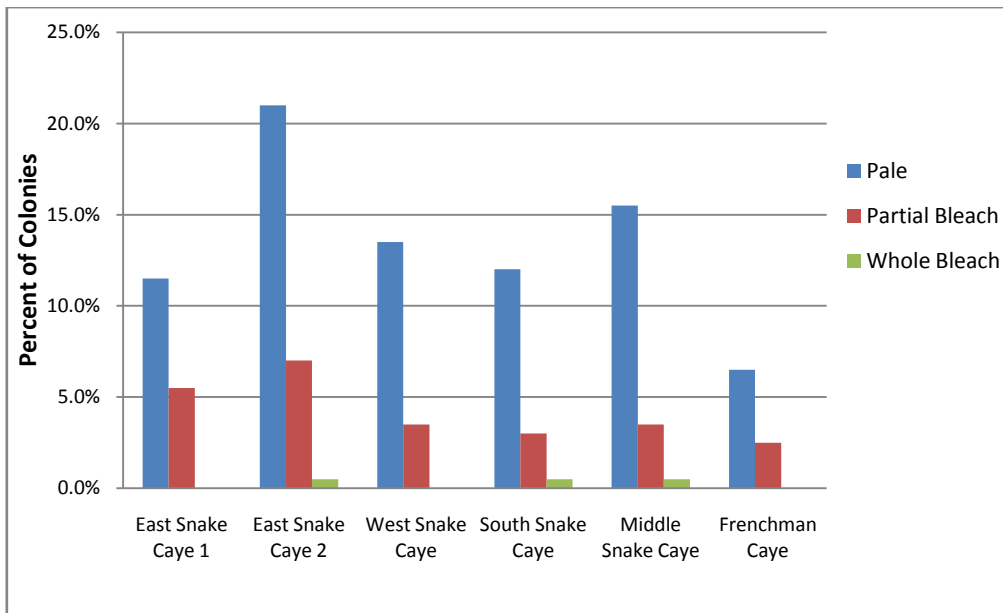


Figure 3: Proportions of colonies within each bleaching category at 6 sites within PHMR during October 2009.

In comparison to the October 2008, the percent of colonies within each bleaching category was lower at all six sites surveyed (Figure 4). In particular, the percent of whole bleached colonies was notably lower during the current survey than 12 months ago. In addition, an average of 48% of colonies surveyed were affected by bleaching (pale, partial and whole bleach) in October 2008 but only 18% of colonies surveyed in October 2009 were affected by bleaching.

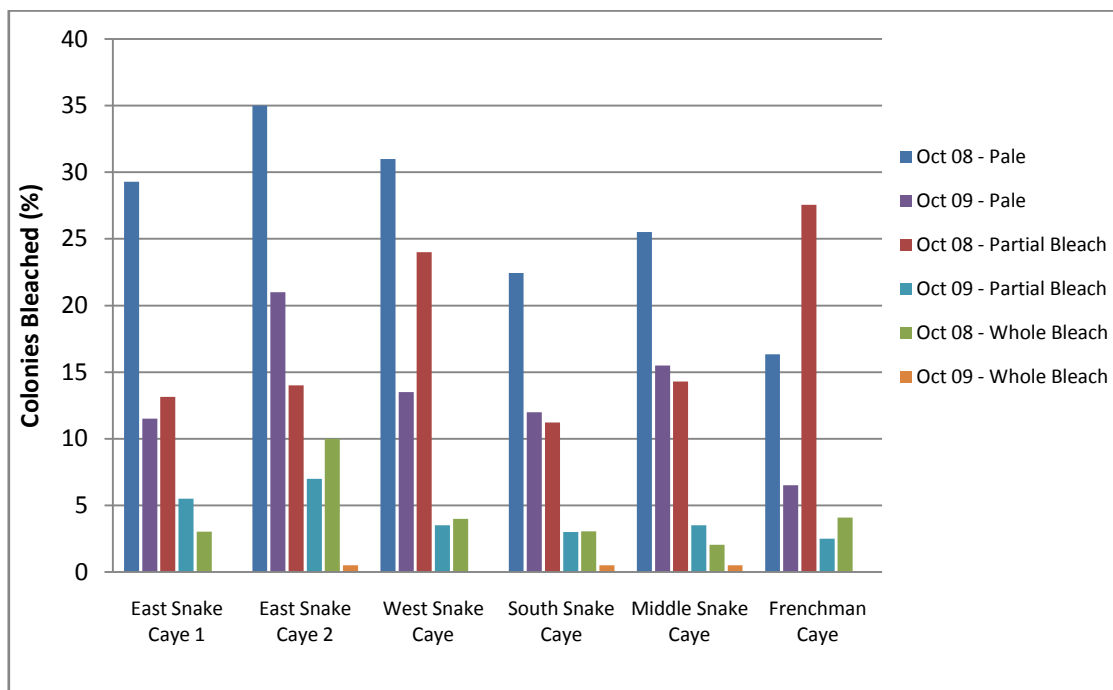


Figure 4: Percent of colonies surveyed showing signs of bleaching at each of the 6 sites within PHMR during October 2008 and 2009.

Conclusions

Colonies affected by bleaching were observed at all six sites surveyed in October 2009. The two most severely affected sites were East Snake Caye 2 and Middle Snake Caye, two of the shallowest sites surveyed. The site at Frenchman Caye was least affected by bleaching, with less than 10% of colonies exhibiting signs of bleaching. The percent of colonies affected by bleaching (pale, partial and whole) was notably less than that observed during the surveys 12 months previously in October 2008, 18% versus 48%, respectively. The lower number of colonies affected by bleaching in the current surveys suggests that bleaching is not as severe as 2008 within Port Honduras Marine Reserve. However, given the current dry, warm period surveys are recommended for the following two months (November and December).