The Effectiveness of Macroalgal Reduction and *Diadema antillarum* Addition in Maintaining Algal Turfs and Facilitating Coral Recovery

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The effectiveness of macroalgal reduction and *Diadema antillarum* addition in maintaining algal turfs and facilitating coral recovery was investigated between June 2002 and July 2003. Two treatments, one involving the manual reduction of macroalgae (A), and the second involving macroalgal reduction followed by the addition of *D. antillarum* (B), were each performed on a set of three replicate patch reefs (4-8m^2) off the island of Eleuthera, The Bahamas. Macroalgal cover was reduced to <2% immediately after macroalgal reduction, but neither treatment was effective at preventing macroalgal re-growth. The only slight increase in macroalgal cover observed on Treatment B reefs between 0 and 12 mo, compared to the greater increases on Treatment A and the control reefs suggests that Treatment B may have had some effect at inhibiting increases in macroalgal cover. Coral cover increased by more than 50% immediately after macroalgal reduction, indicating that a significant amount of live coral had been covered by macroalgae. No significant change in coral cover was detected for either treatment or the control between 0 mo and 12 mo, however. Juvenile coral surveys conducted before and immediately after macroalgal reduction revealed that approximately two-thirds of the total juvenile coral population of each reef had been covered by the thick macroalgal canopy comprised mainly of *Microdictyon marinum*. The failure of the combined treatment of macroalgal reduction and *D. antillarum* addition in maintaining algal turfs and facilitating coral recovery was likely due to poor D. antillarum survivorship. The results suggest that the effectiveness of reef restoration efforts involving translocated or lab-reared *D. antillarum* may be limited on some reefs, and may require multiple re-stocking efforts if they are to be successful in maintaining algal turfs and facilitating coral recovery.