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Monthly fish transects were carried out for temporal changes in fish diversity as part of the ecological studies in the reef lagoon at Hikkaduwa Marine Reserve. In April 1998, a 4 to 5 º C sea water temperature increase resulted in extensive bleaching and mortality of carols. The study documents the post-bleaching changes in the fish fauna of the reef lagoon as revealed by comparative transect studies carried out over 1 3-month period just before the bleaching event (January to March 1998) and the corresponding first similar 3 month-period after the bleaching event (i.e. January to March 1999).

Prior to bleaching, 55 fish species belonging to 23 families were observed along the studied transects. At this time, fish belonging to Pomacentrdae, Chaetodontiadae,Acanthuridae and Labridae comprised the dominant fis. 9 months after bleaching, Pomacentrids and Acanthurids remained as dominant fish groups, but Chaetodontiids and Labrids became displaced by Scarids as an abundant fish group. Species numbers decreased by 13%, numbers f families by 18% and total fish number

decreased by 23% after the bleaching event. Fish species diversity as analysed using the Shannon Weiner Diversity Index decreased from 3.22 to 3.05 after bleaching.

Butterflyfish were among the worst affected. Post –bleaching numbers of butterflyfish lessened by 75% when compared with their pre-bleaching numbers. Among the butterflyfish, corallivorous forms were reduced by 85% following bleaching Increases were recorded for herbivorous surgeonfish (post-bleaching numbers increases by 8.4%), territorial damsels living associated with algal beds (7.2%) and other benthic algal feeding damsels (and 3.3%). Herbivorous rabbitfish decreased.

The above changes are explained by bleaching and coral mortality depriving the corallivores of their food sources. Algae colonized dead coral and may have provided increased food for herbivores. The possible longer-term changes to fish ecology and reef ecology due to beaching-associated changes are discussed.