

Assessing the impact of the 2015-2016 coral bleaching in Rodrigues (Republic of Mauritius)

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The island of Rodrigues (Republic of Mauritius) is one of the few locations within the Indian Ocean, and indeed internationally, to have avoided being extensively impacted during the first two global coral bleaching events that took place in 1997/98 and in 2009/10. During the third mass coral bleaching event in 2015/16, satellite derived sea surface temperature data indicated that Rodrigues was subject to extremely high sea water temperatures, which peaked in March 2016. Surveys completed in July 2016 assessed the impact of these elevated sea water temperatures on the condition of the coral reef at 23 sites around Rodrigues. The surveys found that all sites had bleached and exhibited recent bleaching related mortality. Live hard coral cover ranged from 1.25% to 58.75%, with a mean cover of only 15.63%. The extent of dead coral due to bleaching ranged from 38.76% to 93.26% and the average was 51.40%, while bleaching related mortality per site was 75.39% across all 23 sites. Comparison with data from 2010 revealed a decline in average live hard coral from 35% in 2010 to 15% in 2016 across all sites. The impact of the 2015/16 coral bleaching event around Rodrigues was the most severe event recorded to date. It is uncertain how long it will take for the reef to fully recover. The recovery of the coral communities is particularly precarious given the remote location of the island and the fact that it is situated upstream from other major reef areas in the western Indian Ocean. As such, it is highly likely that the corals are almost entirely self-recruiting and thus the rate of recovery will depend upon the larvae being produced by the remaining live corals around the island. Areas with surviving corals urgently need additional protection to ensure they have the best chance of reproducing and supporting recovery.