

Morphological and potential genetic variability in *Acropora palmata* populations across Jamaica's north coast

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The Elkhorn *Acropora palmata*, a branching coral usually identified by its growth morphology and prevalence on the reef crest, was described in the 1950's as a dominant component of Jamaica's north coast reefs. More recently, *A. palmata* has been classified as critically endangered across its range and extensive stands of this distinctive species were reported to be rare on Jamaican reefs. Despite this, the actual distribution of this species across Jamaican reefs remains poorly studied. The purpose of this study is therefore to conduct a baseline survey of the north coast *A. palmata* populations to determine where they still occur, abundances, and any morphological and potential genetic variability within the population. Twenty-two sites across 5 different parishes were sampled (phototransects) using snorkel and dive surveys. A total of 437 individual corals were counted with the largest abundances recorded at Rio Bueno in Trelawny and 'Dancing Lady' (outside Discovery Bay) in St. Ann. Only 32% of the corals counted were located in the traditional reef crest habitat zone, while 54% were located on the reef flat. The health status of the population varied spatially with Oracabessa in St. Mary having the greatest proportion of unhealthy corals and Monkey Island, Portland having the greatest proportion of healthy corals. The reef crest supported a greater proportion of healthy individuals than any other zones, whereas the shallow fore reef had the most unhealthy corals. Three different growth morphologies were observed (especially across four of the sites); the traditional flat palmate form, an encrusting growth form and a thick elongated branching variety. Genetic variability across areas and growth morphs will be explored. Physicochemical parameters, physiographic features as well as non-coral, biological variables will be assessed for correlation with these observed differences in the populations. The research will create a new baseline of *A. palmata* distribution and ultimately facilitate conservation of this important species.

