



Bonaire and Dominican Republic: A Comparative Analysis

Audrey Copeland

Wayne D. McMurray School of Humanities and Social Sciences



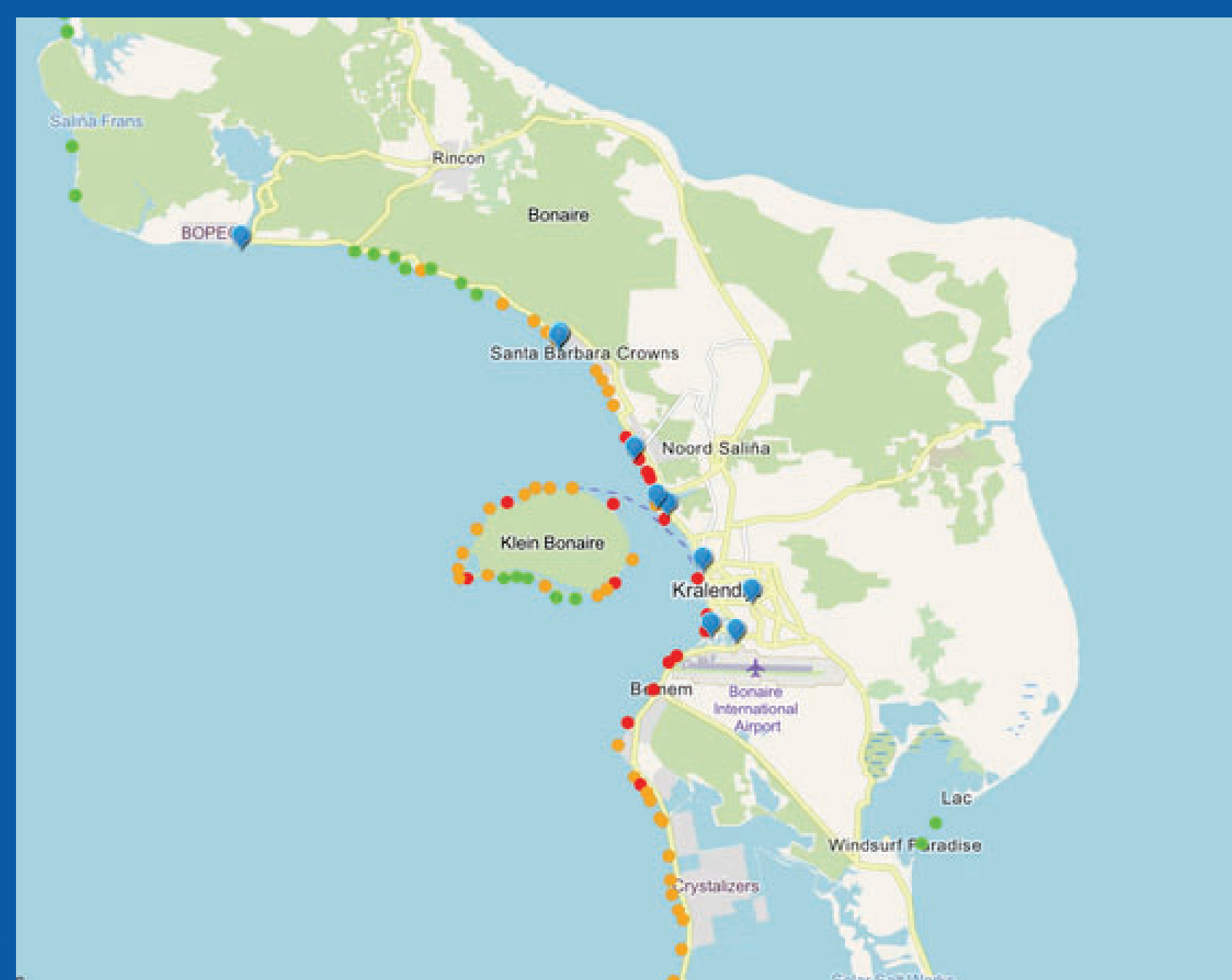
introduction

✿ The Dominican Republic and Bonaire are both popular tourist destinations with their annual GDP made up by tourism 54% and 40% respectively

✿ The Dominican Republic has more coral reef extent at 750km², Bonaire's reefs at 68km² are considered some of the healthiest in the Caribbean.

research question

This comparative study analyzes the impacting socioeconomic and geological factors in addressing the major concerns of both countries regarding their coral reef ecosystem health.



socioeconomic

Fishing in the Dominican Republic provides not just local sustenance, but it is reported that in some communities, local reports estimate that up to 60% of people directly depend on fishing for a living. As a result, conservation measures are difficult and poorly enforced. As of 2025, 30.8% of Dominican waters were protected with marine protected areas and fishing closures.

Bonaire banned all spearfishing starting in 1971 when tourism became its primary economic driver, with the parrotfish harvesting ban formally implemented in 2010. The entire island has been a marine protected area since 1979.

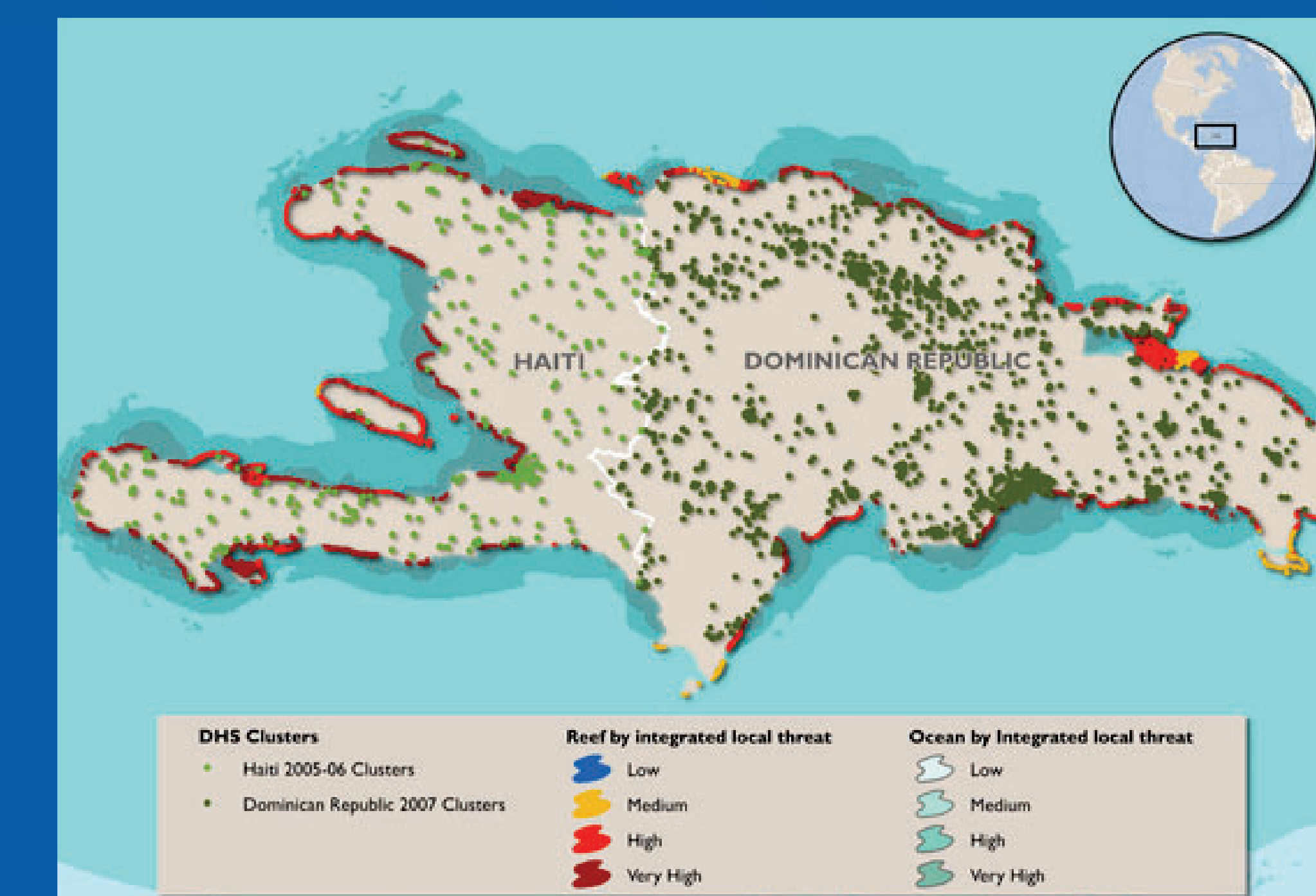


Parrotfish are integral in controlling macro-algae which is harmful as it can outcompete corals for space, light, and nutrients.

geological

✿ The Dominican Republic was hit hardest most recently from Hurricane Irma in 2017. The region in particular is highly susceptible due to its proximity to the Atlantic Hurricane belt.

✿ Bonaire experiences far less hurricanes due to being positioned southernmore to the belt, with Hurricane Lenny in 1999 being its most damaging.



Both graphs show a color gradient of reefs that are threatened locally, with the graph above with the addition of ocean threat. The DR has a significant amount of red with little orange, while Bonaire has greater range in colors.