

# Identifying Risk, Exposure and Vulnerability to Ecological Change: A Framework Analysis of Dive Tourism and Invasive Lionfish in Barbados

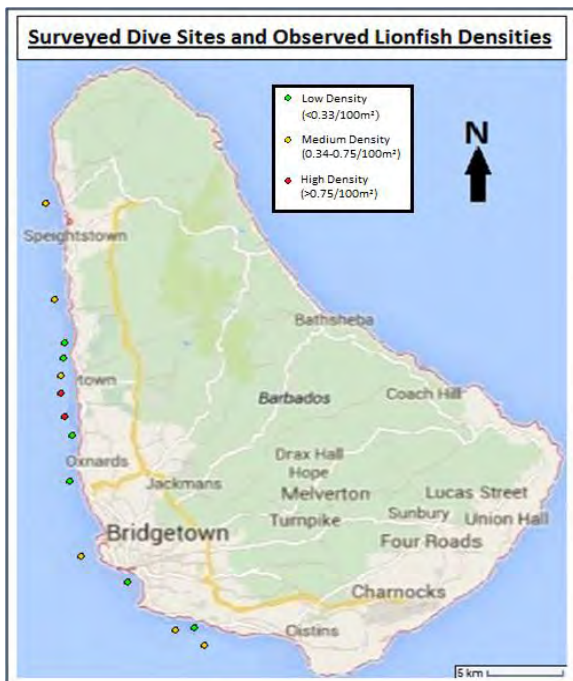
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The proliferation of invasive lionfish over the past few years has been a growing threat to the social and ecological health of many Caribbean countries. Coral reef habitats are now under threat from these invasive species, calling into question the future sustainability of two key industries: tourism and fishing – both of which represent the primary entry point for Barbados and other similar island nations into the global economy. This research, then, aims to help address previously-identified gaps in the existing literature on dive tourism regarding the ecological perturbations of a lionfish invasion, as well as the ways in which dive operators respond to these perturbations to help maintain their livelihood resilience and decrease vulnerability. Lionfish densities were collected from fourteen different dive sites along the south and west coasts of Barbados, and were analyzed in comparison to lionfish populations registered in other various parts of the Caribbean and Atlantic Oceans. In addition, local diver stakeholders were consulted on their awareness of the lionfish invasion, as well as the ways in which they experience and respond to the associated impacts. Results showed that, of the fourteen dive sites that were surveyed, a total of eight (57%) had exhibited either medium or high lionfish population densities.



Map 1.1 (left): Observed lionfish densities in Barbados. Red spots represent dive sites with high population densities (>0.75/100m<sup>2</sup>); yellow represents medium population density (0.34-0.75/100m<sup>2</sup>); and green represents low population density (<0.33/100m<sup>2</sup>).

