

# Grouper as a Natural Biocontrol of Invasive Lionfish

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Lionfish (*Pterois volitans/miles*) have invaded the majority of the Caribbean region within five years. As voracious predators of native fishes with a broad habitat distribution, lionfish are poised to cause an unprecedented disruption to coral reef diversity and function. Controls of lionfish densities within its native range are poorly understood, but they have been recorded in the stomachs of large-bodied Caribbean groupers. Whether grouper predation of lionfish is sufficient to act as a biocontrol of the invasive species is unknown, but pest biocontrol by predatory fishes has been reported in other ecosystems. Groupers were surveyed along a chain of Bahamian reefs, including one of the region's most successful marine reserves which supports the top one percentile of Caribbean grouper biomass. Lionfish biomass exhibited a 7-fold and non-linear reduction in relation to the biomass of grouper. While Caribbean grouper appear to be a biocontrol of invasive lionfish, the overexploitation of their populations by fishers, means that their median biomass on Caribbean reefs is an order of magnitude less than in our study. Thus, chronic overfishing will probably prevent natural biocontrol of lionfishes in the Caribbean.

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