Abundance of Invasive Lionfish (*Pterois volitans*) on Bahamian Coral Reefs

S.J. GREEN and I.M. Côté
Department of Biological Sciences, Simon Fraser University, 8888 University Drive, Burnaby, BC, V5A 1S6 Canada

EXTENDED ABSTRACT

Indo-Pacific lionfish (*Pterois volitans* and *P. miles*) have recently invaded and rapidly spread throughout temperate and tropical Western Atlantic and Caribbean habitats. The invasion is thought to be the result of accidental or intentional releases from aquaria off the southeast coast of Florida, with recent genetic work suggesting a small founding population (Freshwater *et al*. 2009). Lionfish abundances have been increasing exponentially at several locations in the Caribbean over the past few years, and individuals have now been sighted in the Caribbean as far south as Panama. These venomous, invasive predators use an ambush strategy to consume whole prey fish and have few predators in their introduced range.

Lionfish were first reported from Western Atlantic coral reef habitats in 2004, off the southwest coast of New Providence Island, Bahamas, and are now abundant throughout the archipelago (REEF 2008). Despite their popularity in the aquarium trade, there is little scientific information about the abundance of lionfish from coral reefs in their native range, and no information from coral reef habitats in Caribbean.

We set out to assess the population abundance and size distribution of lionfish inhabiting sites along a continuous coral reef off the southwest coast of New Providence, Bahamas in 2008. At each of the 13 sites, we assessed lionfish abundance along six 50 m x 10 m transects. Transects were conducted at depths of between 10 and 20 m, and total length of each lionfish encountered was estimated to the nearest cm by trained observers.

At several sites, densities of *P. volitans* exceeded those reported anecdotally from their native range in the Red Sea by Fishelson (1997), as well as density estimates from their invaded range along the eastern coast of the US by Whitfield *et al*. (2007) (Table 1). The impacts of the lionfish invasion are generating great concern, with individual lionfish having been shown to reduce recruitment of native reef fish by 79% on small experimental reefs in the Bahamas (Albins and Hixon, 2008). Given the high densities we documented across our study sites, the impacts of lionfish on natural reefs in the invaded range may be severe.

These abundance estimates can be used in conjunction with data on fish community assemblage and habitat metrics from the study system to predict the distribution of lionfish across coral reef habitats. As lionfish continue to spread and increase in abundance across the region, these data may be used to target areas of management and control priority.

Table 1. Density and total length (TL) of *Pterois volitans* on coral reef sites off southwest New Providence, Bahamas. Means are shown ± 1 SD.

Site	Density			TL (cm)		
1	345	±	165	22	±	6
2	233	±	82	24	±	7
3	213	±	177	24	±	7
4	141	±	122	23	±	5
5	99	±	45	25	±	7
6	65	±	30	21	±	7
7	65	±	55	20	±	7
8	40	±	10	28	±	3
9	28	±	30	18	±	5
10	28	±	27	20	±	6
11	27	±	10	20	±	6
12	27	±	35	24	±	5
13	10	±	12	30	±	3

LITERATURE CITED

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