

Behavioral response of invasive lionfish that overlapped with basslets from observations conducted in 2014 in the Bahamas.

Website: <https://www.bco-dmo.org/dataset/735222>

Data Type: Other Field Results

Version: 1

Version Date: 2018-05-07

Project

» [Mechanisms and Consequences of Fish Biodiversity Loss on Atlantic Coral Reefs Caused by Invasive Pacific Lionfish](#) (BiodiversityLossEffects_lionfish)

Contributors	Affiliation	Role
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Abstract

Behavioral response of invasive lionfish that overlapped with basslets from observations conducted in 2014 in the Bahamas.

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Coverage

Spatial Extent: Lat:24 Lon:-76

Temporal Extent: 2014-08 - 2014-08

Dataset Description

Behavioral response of invasive lionfish that overlapped with basslets. All experimental basslet populations were filmed on high-lionfish reefs with GoPro video cameras

For related datasets, please visit the project link listed at the top of the page.

Methods & Sampling

For methodology, see papers in the Related Publications section below.

Data Processing Description

For methodology, see papers in the Related Publications section below.

BCO-DMO Data Processing Notes:

- Added location coordinates
- Replaced periods in column names with underscores

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Data Files

File
behavior.csv (Comma Separated Values (.csv), 31.64 KB) MD5:e18f91b5aab449ae5503a4841c1f9c9f Primary data file for dataset ID 735222

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Related Publications

Kindinger, T. L. (2018). Invasive predator tips the balance of symmetrical competition between native coral-reef fishes. *Ecology*, 99(4), 792–800. doi:[10.1002/ecy.2173](https://doi.org/10.1002/ecy.2173)

Methods

,

Results

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Parameters

Parameter	Description	Units
Video_Rep	Replicate number of video (n = 2 per ledge)	unitless
Site_ID	Name of study site (reef)	unitless
lat	Latitude	decimal degrees
lon	Longitude	decimal degrees
Ledge_ID	Ledge identification number	unitless
Cam_Start	Time video recording started	unitless
Cam_End	Time video recording ended	unitless
Behav_Start	Time lionfish behavior started	unitless
Behav_End	Time lionfish behavior ended	unitless
Lion_Size	Size of observed lionfish (total body length)	centimeters
Lion_Pos	Position of observed lionfish under ledge; ledges visually divided into fourths from front to back (1 = front quarter; 4 = back quarter)	unitless
Lion_Behav	Behavior of observed lionfish under ledge	unitless

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Project Information

Mechanisms and Consequences of Fish Biodiversity Loss on Atlantic Coral Reefs Caused by

Invasive Pacific Lionfish (BiodiversityLossEffects_lionfish)

Website: <http://hixon.science.oregonstate.edu/content/highlight-lionfish-invasion>

Coverage: Three Bahamian sites: 24.8318, -076.3299; 23.8562, -076.2250; 23.7727, -076.1071; Caribbean Netherlands: 12.1599, -068.2820

The Pacific red lionfish (*Pterois volitans*), a popular aquarium fish, was introduced to the Atlantic Ocean in the vicinity of Florida in the late 20th century. Voraciously consuming small native coral-reef fishes, including the juveniles of fisheries and ecologically important species, the invader has undergone a population explosion that now ranges from the U.S. southeastern seaboard to the Gulf of Mexico and across the greater Caribbean region. The PI's past research determined that invasive lionfish (1) have escaped their natural enemies in the Pacific (lionfish are much less abundant in their native range); (2) are not yet controlled by Atlantic predators, competitors, or parasites; (3) have strong negative effects on populations of native Atlantic fishes; and (4) locally reduce the diversity (number of species) of native fishes. The lionfish invasion has been recognized as one of the major conservation threats worldwide.

The Bahamas support the highest abundances of invasive lionfish globally. This system thus provides an unprecedented opportunity to understand the direct and indirect effects of a major invader on a diverse community, as well as the underlying causative mechanisms. The PI will focus on five related questions: (1) How does long-term predation by lionfish alter the structure of native reef-fish communities? (2) How does lionfish predation destabilize native prey population dynamics, possibly causing local extinctions? (3) Is there a lionfish-herbivore-seaweed trophic cascade on invaded reefs? (4) How do lionfish modify cleaning mutualisms on invaded reefs? (5) Are lionfish reaching densities where natural population limits are evident?

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Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-1233027

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