

Locations of sampling sites for fish and seagrass impact study, Caribbean from 2014 (Fish and biogeochem hot spots project)

Website: <https://www.bco-dmo.org/dataset/542774>

Version: 2015-01-14

Project

» [Fish aggregations and biogeochemical hot spots across regional environmental gradients](#) (Fish and biogeochem hot spots)

Contributors	Affiliation	Role
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Dataset Description

Locations of transects enumerating seagrass and benthic invertebrates conducted at multiple sites within three biogeographic regions in the Caribbean (The Bahamas, Hispaniola, and Grenada/St.Vincent/Grenadines).

Data Processing Description

BCO-DMO Processing:

version: 2015-01-14

- added lat/lon for site HH1

version: 2014-12-30

- added lat/lon for sites AC, HH, HL, MH, SC

version: 2014-12-10

- added conventional header with dataset name, PI name, version date

- renamed parameters to BCO-DMO standard

- added lab, lat, lon columns

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Data Files

File
stations.csv (Comma Separated Values (.csv), 3.41 KB) MD5:2c52a304a04c0ed9c35aecc8ab77358e
Primary data file for dataset ID 542774

Parameters

Parameter	Description	Units
location	Geographical region of sampling	unitless
site	location of sampling	unitless
lat	latitude; north is positive	decimal degrees
lon	longitude; east is positive	decimal degrees
site_code	sampling site code	unitless

Deployments

Layman_2014

Website	https://www.bco-dmo.org/deployment/542786
Platform	Caribbean_nearshore
Start Date	2014-01-01
End Date	2014-11-30
Description	Coral reef surveys as part of the project "Fish aggregations and biogeochemical hot spots across regional environmental gradients".

Project Information

Fish aggregations and biogeochemical hot spots across regional environmental gradients (Fish and biogeochem hot spots)

Coverage: Caribbean

Description from NSF award abstract:

Consumers in marine ecosystems have long been acknowledged for their role in top-down regulation of ecosystems, but their influence through bottom-up pathways such as nutrient supply is often underappreciated and has not been integrated into models of coastal ecosystem dynamics. Yet, nutrient supply from consumers may be a regulating factor when consumers aggregate, such as fishes around structurally complex habitat. Examining this bottom-up mechanistic pathway is essential for a more holistic understanding of seagrass ecosystems, which are important and threatened globally. This study will address the following questions: (1) Does concentrated nutrient supply from consumers result in distinct biogeochemical hot spots in seagrass beds? and (2) How do consumer effects on ecosystem processes vary across regional environmental contexts where nutrient availability and fishing pressure vary? The PIs will conduct experiments at multiple sites within three biogeographic regions in the Caribbean (The Bahamas, Hispaniola, and Grenada/St.Vincent/Grenadines). The experiments will utilize artificial reefs that mimic natural patch reef habitats that concentrate animals at high densities. Response variables reflecting ecosystem processes (e.g., seagrass nutrient content, seagrass biomass, primary producer diversity) will be measured at reef sites and compared with control sites (seagrass sites without reefs). The spatial extent over which ecosystem processes may be affected, i.e., distance from artificial reef, will be quantified and used to detect ecological thresholds in ecosystem responses. Predictor variables, including measures of ambient nutrient availability, fish densities and fish grazing rates, will be used to contextualize the relative importance of consumer-mediated nutrient supply. The hierarchical experimental design and two-pronged analysis will

characterize relationships across environmental gradients found among and within the biogeographic regions, facilitating a conceptual framework needed to predict when, where, and why consumer-mediated nutrient supply is an important control of ecosystems processes in seagrass beds.

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Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-1405198

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