Abundance of spat and recruitment in a cage experiment on the oyster reefs along Southeastern Atlantic Bight (SAB) from North Carolina to Florida in 2011 (Oyster Trophic Cascades project)

Website: https://www.bco-dmo.org/dataset/554983
Version: 2015-04-01

Project
» The influence of predators on community structure and resultant ecosystem functioning at a biogeographic scale (Oyster_Trophic_Cascades)

Contributors	Affiliation	Role
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Dataset Description

Oyster reef cages containing either bivalves, consumers or predators were set up along the southeastern US coast from N. Carolina to Florida. This dataset includes the number of live and dead oyster spat and live/dead recruits on tiles within the cages.

Related Reference:

DL. Kimbro,JE. Byers,JH. Grabowski, AR. Hughes and MF. Piehler. The biogeography of trophic cascades on US oyster reefs (2014) Ecology Letters 17:845-854. doi: 10.1111/ele.12293.

Data is also available from the Knowledge Network for Biocomplexity (KNB):
1. Cage Experiment Bivalve Data http://knb.ecoinformatics.org/knb/metacat?action=read&qformat=knb&sessionid=0&docid=evanlpettis.101.15

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Data Files

File
spat_tiles.csv(Comma Separated Values (.csv), 131.05 KB)   MD5:5b88ef583c0256ae08ad55267e36ef42   Primary data file for dataset ID 554983

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Parameters

Parameter	Description	Units
site	Experimental study site/estuary within each region; Two sites per region	unitless
lat	latitude; north is positive	decimal degrees
lon	longitude; east is positive	decimal degrees
cage	ID number of caging enclosure	unitless
treatment	Experimental treatment	unitless
subcage_phantom	Indicates whether clam was planted in a subcaged or phantom caged location	unitless
position	Position at which individual clam was assigned within the cage	unitless
tile_batch	Indicates which batch (round) of deployment the tile was a part of	unitless
tile	Assigned tile ID #	unitless
date_checked	Date on which tile was checked and processed	yyyy-mm-dd
days_deployed	Number of days elapsed between deployment and check	days
num_live_spat	Number of live spat on tile	spat
num_dead_spat	Number of dead spat on tile	spat
num_live_recruits	Number of live recruited spat on tile	recruits
num_dead_recruits	Number of dead recruited spat on tile	recruits
comment	Additional notes	unitless

Deployments

Kimbro_2011

Website	https://www.bco-dmo.org/deployment/554925
Platform	Oyster_Reefs_SE-US
Start Date	2011-06-02
End Date	2011-09-02
Description	Oyster reef communities were manipulated to test the generality of potential causal factors of trophic cascades across a 1000-km region from N. Carolina to Florida using monitoring and cage experiments.

Project Information

The influence of predators on community structure and resultant ecosystem functioning at a biogeographic scale (Oyster_Trophic_Cascades)

Coverage: St. Augustine, FL to Cape Hatteras, NC

Predators structure ecological communities by consuming and altering the traits of prey, yet these effects

have only recently been linked to local variation in ecosystem functions such as primary production and nutrient cycling. Such linkages may operate differently across biogeographic scales because factors known to affect local predator mechanisms also vary with latitude. The mismatch between knowledge of how predators locally affect ecosystem functions and the biogeographic range at which predator-prey interactions occur inhibits understanding of linkages between ecological communities and ecosystems, and thus our ability to manage valuable ecosystem services. Intertidal oyster reefs provide a model system to address this knowledge gap: they occur throughout the mid-Atlantic and Gulf coasts; they contain a similar food-web assemblage across latitudinal gradients in predation, resource supplies, and environmental conditions; they are strongly influenced by predator effects; and they influence sediment and nutrient cycles by enhancing benthic-pelagic coupling. This research involves a series of standardized sampling and experimental studies to: (1) investigate biogeographic patterns in oyster food web structure, resource supplies, environmental conditions, and sediment properties associated with reef function (2) determine how the vital rates of oysters, which can influence benthic-pelagic coupling, vary geographically; and (3) examine experimentally the relative importance of consumptive and non-consumptive predator effects on oyster reef communities and the ecosystem processes they provide and how these effects vary latitudinally. It will provide a mechanistic understanding of the basis for biogeographical shifts in valuable ecosystem services performed by an important marine foundation species, and it will also advance understanding of the interactions between predator effects in food webs and the ecosystem processes that depend on them. *(from the Lead Principal Investigator proposal Abstract)*

This is a Collaborative Project with Investigators from four major research universities.

 [Funding for this project has transferred from award OCE-0961633 to OCE-1338372, and from award OCE-0961741 to OCE-1203859, coincident with Principal Investigators Dr. Kimbro's and Dr. Grabowski's affiliation changes.]

BCO-DMO is in the process of serving data from this project directly. These data are also available online from the Knowledge Network for Biocomplexity.

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Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-0961633
NSF Division of Ocean Sciences (NSF OCE)	OCE-1338372
NSF Division of Ocean Sciences (NSF OCE)	OCE-0961853
NSF Division of Ocean Sciences (NSF OCE)	OCE-0961741
NSF Division of Ocean Sciences (NSF OCE)	OCE-1203859

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