

Lengths of oysters in focal clusters from 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/555136>

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 |
|-------------------------------------|-------------------------------------------------------------------|------------------------------------|
| Kimbrow, David L. | Northeastern University | Principal Investigator |
| Byers, James E. | University of Georgia (UGA) | Co-Principal Investigator |
| Grabowski, Jonathan | Northeastern University | Co-Principal Investigator, Contact |
| Hughes, A. Randall | Northeastern University | Co-Principal Investigator |
| Piehler, Michael F. | University of North Carolina at Chapel Hill (UNC-Chapel Hill-IMS) | Co-Principal Investigator |
| Copley, Nancy | Woods Hole Oceanographic Institution (WHOI BCO-DMO) | BCO-DMO Data Manager |

Table of Contents

- [Dataset Description](#)
- [Data Files](#)
- [Parameters](#)
- [Deployments](#)
- [Project Information](#)
- [Funding](#)

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 shell length of live and gaping oysters in focal clusters.

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>

[[table of contents](#) | [back to top](#)]

Data Files

| File |
|-----------------------------------------------------------------------------------------------------------------|
| focal_cluster_len.csv (Comma Separated Values (.csv), 216.12 KB) MD5:c79718a5ca2fdccc3d1336179d93b9fe |
| Primary data file for dataset ID 555136 |

[[table of contents](#) | [back to top](#)]

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 |
| tag | Tag on clam | unitless |
| init_final | Whether this measurement was taken at the beginning or end of experiment | unitless |
| live_gaper | Whether oyster was alive or a gaper (dead oysters with only one valve should not have been measured) | unitless |
| len_shell | Length of bottom valve of oyster (only adults >25mm were measured) | millimeter |

[[table of contents](#) | [back to top](#)]

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. |

[[table of contents](#) | [back to top](#)]

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](#).

[[table of contents](#) | [back to top](#)]

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 |

[[table of contents](#) | [back to top](#)]