Data Documentation

Dataset Information

Dataset Title:

NOAA RESTORE Science Program: Shellfish Portfolio Assessment Tool: Expert judgment of oyster resources for ecosystem services, 2018-07-01 to 2018-11-30

Description:

Dataset consists of observations of subject matter expert responses regarding levels of five ecosystem services provided by three distinct oyster resources under twelve distinct scenarios according to varying environmental conditions in U.S. Gulf and Atlantic Coast locations.

Purpose:

The purpose of the dataset is to provide useful comparisons across oyster resources of both expected ecosystem service delivery levels and the amount of variation in those levels. These estimates bridge an information gap regarding relative performance of diverse oyster resources along multiple dimensions and should serve as a useful guide for resource managers facing competing interests.

The project is an interdisciplinary effort to better understand ecosystem services provided by diverse oyster resources. It is a partnership between Mississippi State University, Auburn University, Dauphin Island Sea Lab, and the Mississippi Department of Marine Resources.

The data in this accession were funded by the NOAA National Centers for Coastal Ocean Science (NCCOS) RESTORE Science Program under award NA17NOS4510090 to Mississippi State University.

This work was also supported by the National Institute of Food and Agriculture and the Mississippi Agricultural and Forestry Experiment Station via Multistate Project W-4133 “Costs and Benefits of Natural Resources on Public and Private Lands: Management, Economic Valuation, and Integrated Decision-Making”, (Hatch Project MIS-033140).

Methods:

See Petrolia *et al*. (2020).

Cited Publications:

- Petrolia, D.R., F. Nyanzu, J. Cebrian, A. Harri, J. Amato, and W.C. Walton. 2020. Eliciting Expert Judgment to Inform Management of Diverse Oyster Resources for Multiple Ecosystem Services. *Journal of Environmental Management* 268 (August): 110676. https://doi.org/10.1016/j.jenvman.2020.110676

People & Projects

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- US DOC; NOAA; NOS; National Centers for Coastal Ocean Science (NCCOS)
- US DOC; NOAA; NOS; NCCOS; RESTORE Science Program
- National Institute of Food and Agriculture
- Mississippi Agricultural and Forestry Experiment Station

Associated Online Resources:

- National Centers for Coastal Ocean Science. 2020. RESTORE Sponsored Research Project: SPAT: Shellfish Portfolio Assessment Tool. InPort Metadata. https://www.fisheries.noaa.gov/inport/item/63217
- RESTORE Project, SPAT: Shellfish Portfolio Assessment Tool, https://restoreactscienceprogram.noaa.gov/projects/oyster-planning-tool

Extents

Start Date:	2018-07-01
End Date:	2018-11-30
Northern Boundary:	45
Southern Boundary:	24
Western Boundary:	-98
Eastern Boundary:	-66.5

Keywords

Sea Areas, Water Bodies, Marine Protected Areas:

- Gulf of Mexico
- U.S. Gulf of Mexico Coast
- U.S. Atlantic Coast

NCCOS Keywords:

- NCCOS Research Location > Region > Gulf of Mexico
- NCCOS Research Data Type > Field Observation

File Information

Total File Size: 279 KB total (unzipped), 3 files in 1 folder, 219 KB (zipped)
Data File Format(s): Comma-separated value (.CSV)
Data File Compression: N/A
Data File Resolution: N/A
GIS Projection: N/A

Data File:

- Ecosystem_Service_Expert_Responses.csv

Documentation Files:

- BrowseGraphic.JPG
- DataDocumentation.PDF

Table 1: Data Dictionary

Note: Summary statistics by ecosystem service, oyster resource, elicitation subsample, and environmental scenario. Scenario key:

- 1st letter indicates nutrients-oxygen regime: mesotrophic-normoxic (M) or eutrophic-hypoxic (E);
- 2nd letter indicates sedimentation regime: normal (N) or high (H);
- 3rd letter indicates salinity regime: low (L), medium (M), or high (H).

Column	Variable	Definition	Units	Range
1	Service	Ecosystem service indicated (see Petrolia et al. 2020)	N/A (descriptive)	Oysters, Nitrogen, Erosion, Blue Crab, Redfish
2	Resource	Oyster Resource indicated (see Petrolia et al. 2020)	N/A (descriptive)	Traditional, Off-Bottom, Restored
3	Subsample	Subsample indicated (see Petrolia et al. 2020)	N/A (descriptive)	All, Isolated, Discussion, Gulf, Atlantic
4	Scenario	Scenario indicated (see Petrolia et al. 2020)	N/A (descriptive)	MNL, MNM, MNH, MHL, MHM, MHH, ENL, ENM, ENH, EHL, EHM, EHH
5	N	Number of observations	number of respondents	[3,38]

Column	Variable	Definition	Units	Range
6	Mean	Mean ecosystem service level reported	varies by service (see Petrolia et al. 2020)	[-0.11,712.5]
7	StdDev	Standard deviation of ecosystem service levels reported	varies by service (see Petrolia et al. 2020)	[0,1654]
8	Wtd_Mean	Familiarity-weighted mean ecosystem service level reported	varies by service (see Petrolia et al. 2020)	[-0.14,782]
9	Median	Median ecosystem service level reported	varies by service (see Petrolia et al. 2020)	[0,300]
10	Min	Minimum ecosystem service level reported	varies by service (see Petrolia et al. 2020)	[-5,20]
11	Max	Maximum ecosystem service level reported	varies by service (see Petrolia et al. 2020)	[0,5000]

Parameter Information

Parameter Description:

Parameters: Ecosystem service levels
Property Type: measured
Units: varies
Observation Category: elicited response
Sampling Instrument: online questionnaire
Sampling and Analyzing Method:

Ecosystem service levels provided by oysters (oyster harvest, as indicated by oyster density; improved water quality, as indicated by net nitrogen assimilation; shoreline protection, as indicated by net erosion; and other fish habitat, as indicated by blue crab and red drum density) Responses elicited using online questionnaire. See Petrolia *et al*. (2020).

Data Quality Method:

See Petrolia *et al*. (2020)

Document Information

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Resource Provider: NCCOS Data Manager, nccos.data@noaa.gov, US DOC; NOAA; NOS; National Centers for Coastal Ocean Science (NCCOS)

Comment: This data documentation describes data files archived as a NOAA NCEI data accession, and is intended to provide dataset-level metadata for the purposes of discovery, use, and understanding.

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