

Trawl catch composition from R/V Centennial trawl surveys in the Hood Canal, WA from 2012-2013 (PelagicHypoxia project)

Website: <https://www.bco-dmo.org/dataset/718662>

Data Type: Cruise Results

Version: 1

Version Date: 2017-11-02

Project

» [Consequences of hypoxia on food web linkages in a pelagic marine ecosystem](#) (PelagicHypoxia)

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Abstract

Trawl catch composition from R/V Centennial trawl surveys in the Hood Canal, WA from 2012-2013.

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Coverage

Spatial Extent: N:47.8299 E:-122.0915 S:47.3626 W:-123.1324

Temporal Extent: 2012-06-11 - 2013-10-03

Dataset Description

This dataset contains trawl catch composition data from R/V Centennial trawl surveys in the Hood Canal, WA from 2012-2013. The species name, estimated number, and estimated mass are included for each tow.

Acquisition Description

Sampling and analytical procedures:

Samples were chosen to target representative aggregations of fish as detected using multi-beam hydroacoustics. They are not designed to provide quantitative estimates of density, but rather to assess species and size composition and to collect individuals for tissue and stomach sampling. Net was a Marinovich midwater trawl, deployed using two wires and 2.5 meter FishBuster trawl doors. Trawl was fitted with a 3.2 mm knotless liner in the codend and towed at a vessel speed of 2–3 knots. Vertical opening of the trawl varied between 4.8 and 7.0 m.

Catch was sorted by taxonomic group, and counted. Mass of catch was measured using a Marel M1100 series bench scale to nearest 0.1 kg. In instance of large catch of species, total number was determined by counting a weighed subsample (usually more than 0.25 of the total catch by weight).

Processing Description

BCO-DMO Data Manager Processing Notes:

- * added a conventional header with dataset name, PI name, version date
- * modified parameter names to conform with BCO-DMO naming conventions
- * comma to ;
- * apostrophes deleted due to character restrictions
- * NA-> "nd" for "no data"
- * blank values in the column indicating the sample was on juvenile changed to "N" for clarity.

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Related Publications

Sato, M., Horne, J. K., Parker-Stetter, S. L., & Keister, J. E. (2015). Acoustic classification of coexisting taxa in a coastal ecosystem. *Fisheries Research*, 172, 130–136. doi:[10.1016/j.fishres.2015.06.019](https://doi.org/10.1016/j.fishres.2015.06.019)

Related Research

Sato, M., Horne, J., Parker-Stetter, S., Essington, T., Keister, J., Moriarty, P., ... Newton, J. (2016). Impacts of moderate hypoxia on fish and zooplankton prey distributions in a coastal fjord. *Marine Ecology Progress Series*, 560, 57–72. doi:[10.3354/meps11910](https://doi.org/10.3354/meps11910)

Related Research

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Related Datasets

IsRelatedTo

Essington, T., Keister, J. E., Horne, J. K., Parker-Stetter, S. (2017) **Fish and jellyfish sample data from R/V Centennial trawl surveys in the Hood Canal, WA from 2012-2013 (PelagicHypoxia project)**. Biological and Chemical Oceanography Data Management Office (BCO-DMO). (Version 1) Version Date 2017-11-02 <http://lod.bco-dmo.org/id/dataset/718698> [[view at BCO-DMO](#)]

Relationship Description: Fish and jellyfish sample data from R/V Centennial trawl surveys.

Essington, T., Keister, J. E., Horne, J. K., Parker-Stetter, S. (2017) **Fish and jellyfish stomach contents from R/V Centennial trawl surveys in the Hood Canal, WA from 2012-2013 (PelagicHypoxia project)**. Biological and Chemical Oceanography Data Management Office (BCO-DMO). (Version 1) Version

Date 2017-11-02 <http://lod.bco-dmo.org/id/dataset/718675> [[view at BCO-DMO](#)]

Relationship Description: Stomach contents from R/V Centennial trawl surveys

Essington, T., Keister, J. E., Horne, J. K., Parker-Stetter, S. (2017) **Site information for R/V Centennial trawl surveys in the Hood Canal, WA from 2012-2013 (PelagicHypoxia project)**. Biological and Chemical Oceanography Data Management Office (BCO-DMO). (Version 1) Version Date 2017-11-02 <http://lod.bco-dmo.org/id/dataset/718711> [[view at BCO-DMO](#)]

Relationship Description: Site information for R/V Centennial trawl surveys.

Essington, T., Keister, J. E., Horne, J. K., Parker-Stetter, S. (2017) **Species list from R/V Centennial trawl surveys in the Hood Canal, WA from 2012-2013 (PelagicHypoxia project)**. Biological and Chemical Oceanography Data Management Office (BCO-DMO). (Version 1) Version Date 2017-11-02 <http://lod.bco-dmo.org/id/dataset/718636> [[view at BCO-DMO](#)]

Relationship Description: Species list from R/V Centennial trawl surveys.

Essington, T., Keister, J. E., Horne, J. K., Parker-Stetter, S. (2017) **Survey locations and times for R/V Centennial trawl surveys in the Hood Canal, WA from 2012-2013 (PelagicHypoxia project)**. Biological and Chemical Oceanography Data Management Office (BCO-DMO). (Version 1) Version Date 2017-11-02 <http://lod.bco-dmo.org/id/dataset/718649> [[view at BCO-DMO](#)]

Relationship Description: Survey locations and times for R/V Centennial trawl surveys.

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Parameters

Parameter	Description	Units
HCTow	Unique identifier for each trawl deployment	unitless
Month	Sample Cruise Month	unitless
Year	Sample cruise year	unitless
Site	Site identifier	unitless
Diel	Day (D) or Night (N) sample	unitless
Replicate	Unique identifier for tows conducted at same site / time period	unitless
Species_name	Name of species or taxonomic group	unitless
Juvenile	Is the measurement on juveniles of that group (Y/N)	unitless
Number	Estimated number in tow	per individual
Mass	Estimated mass in tow	kilograms (kg)

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Instruments

Dataset-specific Instrument Name	Marinovich midwater trawl
Generic Instrument Name	Midwater Trawl
Generic Instrument Description	A mid-water or pelagic trawl is a net towed at a chosen depth in the water column to catch schooling fish such as herring and mackerel. Midwater trawl nets have very large front openings to herd schooling fish toward the back end where they become trapped in the narrow "broiler". The sides of the deployed net are spread horizontally with two large metal foils, called "doors," positioned in front of the net. As the trawler moves forward, the doors, and therefore the net, are forced outward, keeping the net open. This instrument designation is used when specific make and model are not known.

Dataset-specific Instrument Name	Kongsberg Marine P150 net monitor
Generic Instrument Name	Water Depth Logger
Dataset-specific Description	Trawl depth measured using Kongsberg Marine P150 net monitor.
Generic Instrument Description	For measuring and recording water levels in rivers, streams, and wells.

Dataset-specific Instrument Name	Simrad GPS
Generic Instrument Name	GPS receiver
Dataset-specific Description	Vessel position measured using on board GPS (Simrad)
Generic Instrument Description	Acquires satellite signals and tracks your location.

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Deployments

PelagicHypoxia_trawlsurveys

Website	https://www.bco-dmo.org/deployment/718647
Platform	R/V Centennial
Start Date	2012-06-11
End Date	2013-10-03
Description	trawl surveys from 2012-2013

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Project Information

Consequences of hypoxia on food web linkages in a pelagic marine ecosystem (PelagicHypoxia)

Coverage: Puget Sound, WA (47 N, 123 W)

Description from NSF award abstract:

Low dissolved oxygen (hypoxia) is one of the most pronounced, pervasive, and significant disturbances in marine ecosystems. Yet, our understanding of the ecological impacts of hypoxia on pelagic food webs is incomplete because of our limited knowledge of how organism responses to hypoxia affect critical ecosystem processes. In pelagic food webs, distribution shifts of mesozooplankton and their predators may affect predator-prey overlap and dictate energy flow up food webs. Similarly, hypoxia may induce shifts in zooplankton community composition towards species that impede energy flow to planktivorous fish. However, compensatory responses by species and communities might negate these effects, maintaining trophic coupling and sustaining productivity of upper trophic level species. The PIs propose to answer the question "Does hypoxia affect energy flow from mesozooplankton to pelagic fish?" They approach this question with a nested framework of hypotheses that considers two sets of processes alternatively responsible for either changes or maintenance of pelagic ecosystem energy flows. They will conduct their study in the Hood Canal, WA. Unlike most hypoxia-impacted estuaries, hypoxic regions of Hood Canal are in close proximity to sites that are not affected. This makes it logistically easier to conduct a comparative study and reduces the number of potential confounding factors when comparing areas that are far apart.

Improved understanding of how hypoxia impacts marine ecosystems will benefit the practical application of ecosystem-based management (EBM) in coastal and estuarine ecosystems. Effective application of EBM requires that the impacts of human activities are well understood and that ecological effects can be tracked using indicators. This project will contribute to both of these needs. The PIs will share their findings on local and national levels with Federal, State, Tribal, and County biologists. To increase exposure of science to underrepresented groups, the PIs also will provide Native American youth with opportunities to participate in field collections and laboratory processing through summer internships. The PIs will collaborate with the NSF-funded Pacific Northwest Louis Stokes Alliance for Minority Participation and tribes from the Hood Canal region to recruit and mentor students for potential careers in marine science. This project will support several undergraduate researchers, two Ph.D. students, a post-doc, and two early-career scientists.

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Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-1154648

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