Abundance and composition of zooplankton communities at the Darling Marine Center Monitoring stations collected on R/V Ira in the Damariscotta Estuary from 2007 to 2011 (DMC project)

Website: https://www.bco-dmo.org/dataset/557360
Version: close to final
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Project
» Darling Marine Center Monitoring Time Series (DMC)

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Dataset Description

This dataset describes the abundance and composition of the zooplankton community at two Darling Marine Center monitoring stations. Sampling was biweekly from 2008 (one in 2007) to 2011.

This display has all the species/stages in one column and the abundances in another column. Second display has species as column headers and abundances in all columns. These two datasets are identical in content but displayed differently for different emphasis. Second display: Columnar view

Methods & Sampling

Zooplankton were collected from two vertical hauls using a 0.75 meter ring net with 222 um mesh with 5:1 ratio of wire out to depth during the upcast with the winch going 40 meters/minute.

A flowmeter at the mouth of the ring net recorded the start and end of each cast.

The collection in the cod end of the net was transferred to 500 ml jars and the samples were buffered in a 4% formaldehyde solution.

Data Processing Description

Back in the lab, the zooplankton samples were split in half using Folsom Plankton Splitter. Half of the sample was archived for abundance analysis of meso-zooplankton species. Target N of organisms counted was 200. All copepods were identified to species and staged. All other animals were identified to family or to species where possible. The *Calanus finmarchicus* target N was 75-100 where few stages were present or 150-200

where many stages were present.

The remaining half of the sample was rinsed of its preservative by sieving through a nitex mesh filter made of the net used in sampling. The mesh filters were pre-weighed for subtraction from the sample material weight.

The sample was then rinsed with 100 ml of freshwater to remove salts and placed in a clean, pre-weighed petri dish. It was then placed in a 65C oven (Precision Econotherm Lab Oven) for 48 hours for drying

Dried samples are then weighed to the nearest 0.001 gram on PG403-S Delta Range Mettler Toledo precision scale

Zooplankton abundance (#/m2) was calculated by first determining the #/m3 and then multiplying by net depth. The abundance (#/m3) = (the count *dilution factor/ split / volume filtered). Dilution factor = the dilution/aliquot; volume filtered = ring net mouth area (m2)* distance (M); distance is measured by the flowmeter.

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Data Files

File
dmc_zoo_rs.csv (Comma Separated Values (.csv), 2.37 MB) MD5:0d3a98e692b764065730b348bab78388 Primary data file for dataset ID 557360

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Parameters

Parameter	Description	Units
station	DMC-1 or DMC-2	text
depth_w	depth of water at this station	meters
lat	latitude	decimal degrees; North is positive
lon	longitude	decimal degrees; West is negative
sample_id	IC for R/V Ira C; followed by the date (mmddyy)and DMC and the station number and sample half	text
cruise	each deployment has its own cruise ID following this format: IC for R/V Ira C; followed by the date (mmddyy)and DMC	text
date_local	date local time	mmddyyyy
month_local	month local time	mm

day_local	day local time	dd
year	year	yyyy
yrday_local	day of year	numeric
cast	cast number	n
depth_net	depth of the ring net according to length of wire out of the winch; as read by a meter wheel	meters
vol_filt	volume filtered determined from net mouth area (m2) and calibrated flow meter distance (m)	cubic meters
split	portion of sample	ratio
dilution	lab dilution	ml
aliquot	aliquot size	ml
aliquot_calfin	Calanus finmarchicus aliquot	ml
species_stage	genus and species binomial identification of the animal collected; includes life stage	text
abundance	abundance in the water column	numbers per square meter

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Instruments

Dataset-specific Instrument Name	Folsom Plankton Splitter
Generic Instrument Name	Plankton sub-sampler
Dataset-specific Description	Device for splitting a plankton sample into two approximately equal parts. It uses a hollow cylindrical drum mounted to rotate on a horizontal axis with a semi-circular divider midway between the end walls of the drum.
Generic Instrument Description	Various devices for sub-sampling plankton samples Folsom splitter: http://www.aquaticresearch.com/folsom_plankton_splitter.htm Motoda box splitter: http://www.aquaticresearch.com/motodo_plankton_splitter.htm Hensen Stempel Pippette: http://www.envcoglobal.com/catalog/product/plankton-counting/hensen-stem... Sedgewick-Rafter Plankton Counting Chamber: http://www.benmeadows.com/wildco-sedgewick-rafter-counting-chambers_3681...

Dataset-specific Instrument Name	Ring Net
Generic Instrument Name	Ring Net
Dataset-specific Description	0.75 meters with 202 micron mesh hauled vertically with 5:1 ratio of wire out to depth
Generic Instrument Description	A Ring Net is a generic plankton net, made by attaching a net of any mesh size to a metal ring of any diameter. There are 1 meter, .75 meter, .25 meter and .5 meter nets that are used regularly. The most common zooplankton ring net is 1 meter in diameter and of mesh size .333mm, also known as a 'meter net' (see Meter Net).

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Deployments

IC_DMC_2007-2011

Website	https://www.bco-dmo.org/deployment/554782
Platform	R/V Ira C.
Start Date	2007-09-13
End Date	2011-12-30
Description	This deployment is a collection of 87 one-day cruises, monthly and bi-monthly, to two stations reached from the University of Maine's Darling Marine Center (DMC) from September 13, 2007 to December 30, 2011. The DMC is located on the Damariscotta River, not far from the Estuary. The first station, DMC-1, is within the river with a depth of approximately 38 meters. DMC-2 is located 8 kmm from the mouth of the river in approximately 110 meters of water.

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Project Information

Darling Marine Center Monitoring Time Series (DMC)

Website: http://umaine.edu/jrunge/data/

Coverage: Damariscotta Estuary; Gulf of Maine

This time series is based out of the University of Maine's Darling Marine Center. We utilize the R/V Ira C. to conduct monthly and bi-monthly trips to sample two stations: one located in the Damariscotta Estuary and another located 5 miles from the mouth of the river in a relatively deep channel (110 meters). The time series has been ongoing since 2007 and data is available up through September 2012.

Primary Sampling and Data Includes:

- Sea Bird CTD water profiles, which occasionally include PAR and fluoromer instruments
- 200 micron mesh vertical ring net – for identification and enumeration of zooplankton
- 333 and 500 micron mesh Bongo tows – for identification and enumeration of Ichtyoplankton
- Water sampling and filtration for phytoplankton pigment analysis

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Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-0815336
University of Maine (UMe)	unknown DMC University of Maine
Maine Department of Marine Resources (Maine DNR)	unknown DMC Maine Department of Natural Resources

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