Sizes of Ceraesignum maximum larvae in lab experiment after 3, 6, 9, 12, 15 and 18 days depending on food in Moorea, French Polynesia from September to October 2009 (Vermetids_Corals project)

Website: https://www.bco-dmo.org/dataset/725317
Data Type: experimental
Version: 2017-10-05

Project
» Spatial patterns of coral-vermetid interactions: short-term effects and long-term consequences (Vermetids_Corals)

Contributors	Affiliation	Role
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Coverage

Spatial Extent: **N**:-17.47279 **E**:-149.78277 **S**:-17.48365 **W**:-149.84698
Temporal Extent: 2009-09-24 - 2009-10-12

Dataset Description

These data are from an experiment that tests the nutritional strategies of Ceraesignum (Dendropoma) maximum larvae. For additional datasets see related files.

Related Datasets:

- Phillips_2011 - Experiment 1 Larval Mortality: https://www.bco-dmo.org/dataset/725276
- Phillips_2011 - Experiment 1 Larval Size: https://www.bco-dmo.org/dataset/725317 (Current page)
- Phillips_2011 - Experiment 1 Settlement Challenge 10: https://www.bco-dmo.org/dataset/725335
- Phillips_2011 - Experiment 1 SettlementChallenge18: https://www.bco-dmo.org/dataset/725392
- Phillips_2011 - Experiment 2 Larval Mortality: https://www.bco-dmo.org/dataset/725880
- Phillips_2011 - Experiment 2 Larval Size: https://www.bco-dmo.org/dataset/725943
- Phillips_2011 - Experiment 2 Larval Velum Size: https://www.bco-dmo.org/dataset/725957
- Phillips_2011 - Experiment 2 Settlement Challenge 6: https://www.bco-dmo.org/dataset/725973
- Phillips_2011 - Experiment 2 Settlement Challenge 8: https://www.bco-dmo.org/dataset/726002

Methods & Sampling

In this experiment, larvae were placed into feeding treatments with different types of phytoplankton to determine larval nutritional strategies.

Larvae hatched on Sept 24, 2009 and were distributed into tubs on 500mL filtered sea water (FSW). Three larval feeding treatments with different species of phytoplankton, all at 10 x 104 cells mL-1: Isochrysis galbana (‘‘Iso’’ treatment), Dunaliella tertiolecta (‘‘Dun’’ treatment), a 1:1 ratio of I. galbana and D. tertio- lecta (‘‘Mixed’’ treatment), plus an Unfed treatment in which larvae were raised in FSW. Investigators used a hemocytometer to count algal cells and calculate densities of phytoplankton stocks and amount of stock to add to containers for each treatment. On days 3, 6, 9 and 18, six larvae per container were haphazardly sampled and preserved them in 70% ethanol for later measurement of protoconch height Protoconch height was measured in microns. Each larvae was sampled once. Sometimes only 5 larvae were in the preserved vials, so the 6th one is marked as missing. On day 0 (day of hatch) larvae were samples from those placed in experiment, but the data are not included in any analysis.

Data Processing Description

BCO-DMO Processing:

- added conventional header with dataset name, PI name, version date
- modified parameter names to conform with BCO-DMO naming conventions
- empty values were replaced with 'nd' (no data).

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Data Files

File	
Phillips_2011_Expt1_LarvalSize.csv	(Comma Separated Values (.csv), 2.08 KB) MD5:e04b5ac78bb8cab1ad92dbc92a3b6578
Primary data file for dataset ID 725317	

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Related Publications

Phillips, N. E. (2011). Where are larvae of the vermetid gastropod Dendropoma maximum on the continuum of larval nutritional strategies? Marine Biology, 158(10), 2335–2342. doi:10.1007/s00227-011-1737-0
General

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Parameters

Parameter	Description	Units
Food_treatment	type of food given to larvae (Isochrysis galbana = Iso; Dunaliella tertiolecta = Dun; 1:1 ratio of Iso and Dun = Mixed)	unitless
Replicate_tub	replicate tub number	unitless
Larva_number	larvae id	unitless
Day_3	protoconch height of 3 day post hatch larvae	microns (um)
Day_6	protoconch height of 6 day post hatch larvae	microns (um)
Day_9	protoconch height of 9 day post hatch larvae	microns (um)
Day_18	protoconch height of 18 day post hatch larvae	microns (um)
Day_0_size_at_hatch	Day of hatch larvae measured at the start (before going into containers) not in analysis	microns (um)

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Instruments

Dataset-specific Instrument Name	hemocytometer
Generic Instrument Name	Hemocytometer
Dataset-specific Description	Investigators used a hemocytometer to count algal cells and calculate densities of phytoplankton stocks and amount of stock to add to containers for each treatment.
Generic Instrument Description	A hemocytometer is a small glass chamber, resembling a thick microscope slide, used for determining the number of cells per unit volume of a suspension. Originally used for performing blood cell counts, a hemocytometer can be used to count a variety of cell types in the laboratory. Also spelled as "haemocytometer". Description from: http://hlsweb.dmu.ac.uk/ahs/elearning/RITA/Haem1/Haem1.html.

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Deployments

Osenberg_et_al_Moorea

Website	https://www.bco-dmo.org/deployment/644752
Platform	Osenberg et al Moorea
Start Date	2003-05-19
End Date	2015-07-12

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Project Information

Spatial patterns of coral-vermetid interactions: short-term effects and long-term consequences (Vermetids_Corals)

Coverage: Moorea, French Polynesia (-17.48 degrees S, -149.82 degrees W)

Description from NSF abstract:
Ecological surprises are most likely to be manifest in diverse communities where many interactions remain uninvestigated. Coral reefs harbor much of the world's biodiversity, and recent studies by the investigators suggest that one overlooked, but potentially important, biological interaction involves vermetid gastropods. Vermetid gastropods are nonmobile, tube-building snails that feed via an extensive mucus net. Vermetids reduce coral growth by up to 80%, and coral survival by as much as 60%. Because effects vary among coral taxa, vermetids may substantially alter the structure of coral communities as well as the community of fishes and invertebrates that inhabit the coral reef.

The investigators will conduct a suite of experimental and observational studies that: 1) quantify the effects of four species of vermetids across coral species to assess if species effects and responses are concordant or idiosyncratic; 2) use meta-analysis to compare effects of vermetids relative to other coral stressors and determine the factors that influence variation in coral responses; 3) determine the role of coral commensals that inhabit the branching coral, Pocillopora, and evaluate how the development of the commensal assemblage modifies the deleterious effects of vermetids; 4) determine how vermetid mucus nets affect the local environment of corals and evaluate several hypotheses about proposed mechanisms; and 5) assess the long-term implications of vermetids on coral communities and the fishes and invertebrates that depend on the coral.

Note: The Principal Investigator, Dr. Craig W. Osenberg, was at the University of Florida at the time the NSF award was granted. Dr. Osenberg moved to the University of Georgia during the summer of 2014 (current contact information).

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Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-1130359

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