Long term monitoring site location information in Moorea, French Polynesia (Vermetids_Corals project)

Website: https://www.bco-dmo.org/dataset/645638
Data Type: Other Field Results
Version: 23 May 2016
Version Date: 2016-05-23

Project
» Spatial patterns of coral-vermetid interactions: short-term effects and long-term consequences (Vermetids_Corals)
» Cryptic density dependence: the effects of spatial, ontogenetic, and individual variation in reef fish (CDD_in_Reef_Fish)

Contributors	Affiliation	Role
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Table of Contents

- Coverage
- Dataset Description
  - Data Processing Description
- Data Files
- Parameters
- Deployments
- Project Information
- Funding

Coverage

Spatial Extent: **Lat**:-17.47499 **Lon**:-149.79251
Temporal Extent: 2012 - 2017

Dataset Description

This dataset contains site information for reefs located in Moorea, French Polynesia.

Beginning in 2003, 192 Long Term Reefs (LTR) were chosen for long-term monitoring as part of the "Cryptic density dependence: the effects of spatial, ontogenetic, and individual variation in reef fish" project. Data from this project can be found on the project page: http://www.bco-dmo.org/project/540423

Beginning in 2012, Long Term Vermetid Removal (LTVR) sites 193-198 were established for a vermetid removal manipulation as part of the "Spatial patterns of coral-vermetid interactions: short-term effects and long-term consequences" project. Data from the LTVR sites can be found on the project page: https://www.bco-dmo.org/project/540411

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

Data Processing Description

BCO-DMO Processing Notes
- Generated from table in original file "FateOfReefs.csv" contributed by Rebecca Atkins
- Parameter names edited to conform to BCO-DMO naming convention found at Choosing Parameter Name

- "nd" (no data) inserted into blank cells

[table of contents | back to top]

Data Files

File
FateOfReefs.csv (Comma Separated Values (.csv), 12.01 KB) MD5:fd517e5e5f4f3e7c47c6c27c3d5101b9 Primary data file for dataset ID 645638

[table of contents | back to top]

Parameters

Parameter	Description	Units
Reef_Number	Number given to reef (1-198)	dimensionless
Site	Labeled Site of reef: VOW (1-16); VIW (17-32); VOM (33-48); VIM (49-64); VOE (65-80); VIE (81-96); MOE (97-112); MIE (113-128); TOW (129-144); TIW (145-160); TOE (161-176); TIE (177-192	text
LATITUDE	Latitude (South is negative)	decimal degrees
LONGITUDE	Longitude (West is negative)	decimal degrees
QE1	Addition experiment: sites received 5 Poc corals “Experiment” in which the reefs were cleared and a common density of Thalassoma were added to assess quality. Thalassoma (Th) where cleared from reef at start; new fish outplanted; and Th was cleared again at end. Start: 11-4-2005 End: 18-4-2005	text
QE2	“Experiment” in which reefs were cleared and a common density of Thalassoma were added. Start: 18-4-2005 End: 8-4-2005	text
POC_Q	Assessment in which some of the POC reefs (and controls) were cleared and a common density of Thalassoma were added. Start: 4-6-2005 End: 11-6-2005	text
POC	Sites indicated received 5 Poc corals on the given date; Start: 10-12-2004 for reefs 66-90; Start: 10-12-2004 for reefs 66-90; End: Ongoing for both	text
LTVR	“Long term vermetid removal” reefs used in the project; “Spatial patterns of coral-vermetid interactions: short-term effects and long-term consequences”. Start: 2010 End: Ongoing	text
Marsden_Thalassoma	Thalassoma life history project. Start: 01-2016 End: 2020	text
Notes	Notes	text

[table of contents | back to top]

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

[table of contents | back to top]

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).

Cryptic density dependence: the effects of spatial, ontogenetic, and individual variation in reef fish (CDD_in_Reef_Fish)

Coverage: Moorea, French Polynesia (-17.48, -149.82)

Description from NSF award abstract:
Ecologists have long been interested in the factors that drive spatial and temporal variability in population density and structure. In marine reef systems, attention has focused on the role of settlement-the transition of pelagic larvae to a benthic stage-and on density-dependent processes affecting recently settled juveniles. Recent data suggest that co-variance in settlement and subsequent density-dependent survival can obscure the patterns of density dependence at larger scales, a phenomenon called cryptic density dependence. This research will explore the mechanisms that underlie the spatial covariance of settlement and site quality - a process that has received little attention in the standard paradigm. These mechanistic studies of cryptic density dependence will facilitate the development of new frameworks for fish population dynamics that incorporate larval ecology, habitat quality, density dependence, life history, and the patterns and implications of spatial covariance among these factors. More generally, the work provides a specific empirical context, and a general theoretical treatment, of cryptic heterogeneity (hidden individual variation in demographic rates).

Note: Drs. Craig W. Osenberg and Ben Bolker were 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). Dr. Bolker moved to McMaster University in 2010 (current contact information).

[table of contents | back to top]

Funding

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

[table of contents | back to top]