

Physical characteristics of long-term vermetid removal reefs in Moorea, French Polynesia from 2012-2016

Website: <https://www.bco-dmo.org/dataset/645827>

Data Type: Other Field Results

Version: 2

Version Date: 2017-12-20

Project

» [Spatial patterns of coral-vermetid interactions: short-term effects and long-term consequences](#)

(Vermetids_Corals)

Contributors	Affiliation	Role
Osenberg, Craig	University of Georgia (UGA)	Principal Investigator, Contact
Frazer, Thomas	University of Florida (UF)	Co-Principal Investigator
Shima, Jeffrey	Victoria University of Wellington	International Collaborator
Gegg, Stephen R.	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager
York, Amber D.	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager

Table of Contents

- [Coverage](#)
- [Dataset Description](#)
 - [Methods & Sampling](#)
 - [Data Processing Description](#)
- [Data Files](#)
- [Parameters](#)
- [Instruments](#)
- [Deployments](#)
- [Project Information](#)
- [Funding](#)

Coverage

Spatial Extent: Lat:-17.47499 Lon:-149.79251

Temporal Extent: 2012-01-23 - 2016-08-06

Dataset Description

Reef morphological dimensions (physical characteristics) were measured specifically for the long term vermetid removal reefs (129-144 and 193-198) beginning in January of 2012. Physical characteristic surveys are meant to characterize the size dimensions of each reef. We ultimately hope to use these data to inform how vermetids influence reef size and shape and benthic composition.

Long Term Vermetid Removal (LTVR) Reef sites in this project are manipulated reefs characterized in the [Long Term Reef Physical Characteristics](#) dataset.

Reefs labeled "TOW" in this dataset, numbered 129-144, are a subset of a larger number of Long Term Reefs (LTR) that were monitored as part of the project "Cryptic density dependence: the effects of spatial, ontogenetic, and individual variation in reef fish" beginning in 2003. This long term study continues to monitor those reefs in addition to reefs 193-198 starting in 2012. Data for these reefs between the years 2003 and 2009 can be found on the project site <http://www.bco-dmo.org/project/540423>.

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

Other associated LTVR datasets:

[LTVR - Fate of Reefs](#) - Contains latitude and longitude of reefs used in this dataset
[LTVR - Fish Survey](#)
[LTVR - Percent Cover Point Contact](#)
[LTVR - Percent Visual Cover](#)
[LTVR - Pomacentrids](#)
[LTVR - Thalasssoma](#)
[LTVR - Vermetid Counts](#)
[LTVR - Vermetid Removal](#)
[LTVR - Vermetid Sizes in Quadrat](#)

Methods & Sampling

Sampling and Analytical Methodology:

Data were collected in 2012 for all reefs that are monitored. A diver swims up to one of the reefs. Using a transect tape, the diver determines the maximum length and perpendicular width. Three height measurements are taken: typical height, max height and water column depth. Using a transect tape, the diver determines the maximum length and perpendicular width. Three height measurements are taken. After 2003, measurements were made by dropping a weighted transect tape from the water surface to an average high point on the reef (typical height), to the highest point on a reef (max height), and to the seafloor (H20 max height). The percent cover and direction of the nearest neighbor reefs were also measured during certain years. These "Nearest Neighbor (NN)" estimates are conducted by visually estimating the percent area within 2 meters of the edge of the sampled reef that is comprised of hard/other substrate (in other words, it is the percent hard/other substrate cover surrounding the sampled reef within a 2 meter radius).

Materials: Transect tape

Data Processing Description

Data Processing:

"NNAVGEST" was calculated as the average of each observer's estimate (NNJEST, NNCWOEST, NNJSWETS, NNTAEST). When only one observer who was not originally listed in a column heading (i.e., JS, CWO, JSW, TA) made observations, data was recorded directly into the NNAVGEST column.

NA- Not applicable (never recorded) to this data set

NR- Not recorded at certain times throughout the data set

BCO-DMO Processing Notes

- Generated from original file "LTVR_PhysicalCharacteristics.csv" contributed by Rebecca Atkins
- Parameter names edited to conform to BCO-DMO naming convention found at [Choosing Parameter Name](#)
- Any blank rows removed

Data version 2: 2017-12-20 replaces data version 1: 2016-05-23

BCO-DMO Data Manager Processing Notes for version 2017-12-20:

- * Added a conventional header with dataset name, PI name, version date
- * Modified parameter names to conform with BCO-DMO naming conventions
- * added name "COMMENT" to un-named column with a comment in it.
- * NA values changed to "nd" for "no data"
- * NR values unchanged. NR indicates "not recorded" at certain times throughout the data set

[[table of contents](#) | [back to top](#)]

Data Files

File

LTVR_PhysicalCharacteristics.csv (Comma Separated Values (.csv), 6.55 KB)
 MD5:50a7dff8651477609d6d58a2a74c0968

Primary data file for dataset ID 645827

[[table of contents](#) | [back to top](#)]

Parameters

Parameter	Description	Units
DATE	Date Data Collected (2003-2005)	DD-MMM-YYYY
OBSERV	Name of observer (AS-Amanda Strong; TF-Tom Frazer; JS-Jeff Shima)	text
SITE	Name of site	text
REEF_let	Letter corresponding to reef ID	text
REEF_NUMBER	Number corresponding to reef ID (129-144; 193-198)	dimensionless
TREATMENT	Treatment type (Control; Removal)	text
COMPON	Component of the reef (individual bommies all joined to form a larger patch reef)	text
LENGTH	Max Length	meters
WIDTH	Perpendicular Width	meters
THEIGHT	Typical height of reef	meters
MHEIGHT	Maximum Height	meters
H20MHEIG	Water depth to maximum height	meters
NNAVGEST	Average of Nearest Neighbor Estimate (% cover of "donut" from reef edge out 2 meters)	percentage
NNJSEST	Jeff Shima's estimate of Nearest Neighbor Cover; 0-100 or NA (= did not estimate)	number of individuals
NNCWOEST	Craig Osenberg's estimate of Nearest Neighbor Cover; 0-100 or NA (= did not estimate)	number of individuals
NNJSWEST	Jada White's estimates of Nearest Neighbor Cover; 0-100 or NA (= did not estimate)	number of individuals
NNTAEST	Tom Adam's estimate of Nearest Neighbor Cover; 0-100 or NA (= did not estimate)	number of individuals

[[table of contents](#) | [back to top](#)]

Instruments

Dataset-specific Instrument Name	Mask and snorkel
Generic Instrument Name	Diving Mask and Snorkel
Generic Instrument Description	A diving mask (also half mask, dive mask or scuba mask) is an item of diving equipment that allows underwater divers, including, scuba divers, free-divers, and snorkelers to see clearly underwater. Snorkel: A breathing apparatus for swimmers and surface divers that allows swimming or continuous use of a face mask without lifting the head to breathe, consisting of a tube that curves out of the mouth and extends above the surface of the water.

Dataset-specific Instrument Name	Transect Tape
Generic Instrument Name	Measuring Tape
Dataset-specific Description	Materials: transect tape and slates
Generic Instrument Description	A tape measure or measuring tape is a flexible ruler. It consists of a ribbon of cloth, plastic, fibre glass, or metal strip with linear-measurement markings. It is a common tool for measuring distance or length.

Dataset-specific Instrument Name	Slate
Generic Instrument Name	Underwater Writing Slate
Dataset-specific Description	Materials: transect tape and slates
Generic Instrument Description	Underwater writing slates and pencils are used to transport pre-dive plans underwater, to record facts whilst underwater and to aid communication with other divers.

[[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](#)).

[[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](#)]