LTR - Thalassoma Surveys

Website: https://www.bco-dmo.org/dataset/645195
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Project
» 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

- Dataset Description
  - Methods & Sampling
  - Data Processing Description
- Data Files
- Parameters
- Instruments
- Deployments
- Project Information
- Funding

Dataset Description

Thalassoma surveys were conducted from 2003-2007, 2009, 2012, and 2014. These surveys were conducted at each of 192 reefs. Beginning in 2012, reefs 129-144 and added reefs 193-198 were manipulated for a project studying the effects of vermetid removals; information pertaining to this manipulation can be found in the project “Spatial patterns of coral-vermetid interactions: short-term effects and long-term consequences”. All data collected on reefs 129-144 and 193-198 beginning in 2012 can also be found under that project. These reefs are characterized in the “Long Term Reef Physical Characteristics” dataset. *Thalassoma* surveys are meant to characterize size structure of *Thalassoma* and other fish species thought to affect *Thalassoma* dynamics. We ultimately hope to use the data on size structure and numbers of *Thalassoma* to infer settlement rates, growth rates and survival.

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

Methods & Sampling

Sampling and Analytical Methodology:
A single snorkeler approaches one of the 192 patch reefs (for size of reef, see “Physical Characteristics” dataset, each are ~ 1-8 m^2 in aerial extent) swam around it and attempted to recognize and estimate the size of all the *Thalassoma* on the reef. Large adults that were clearly attracted by the arrival of the snorkeler were ignored. We also estimated the number and size of resident *Gomphosus varius*, *Pseudocheilinus lineatus* all around the reef. Counts of small recruits of labrids and scarids were combined, excluding those three species. We also counted and identified species that we considered potential predators that were within ~ 3 meters of the reef for each patch reef. In 2012 settler counts were not completed.

Materials: Data slate with photographs of *Thalassoma* of different size classes to help with the visual estimates at each site.

Species Abbreviation Codes:

Abbreviation	Common Name	Scientific name
beb	big eye emperor	Monotaxis grandoculis
car	cardinal fish	Apogon spp.
fts	flame-tail snapper	Lutjanus fulvus
liz	lizardfish	Saurida spp.
lnf	lionfish	Pterois spp. or Dendrochirus spp.
mry	Moray	Gymnothorax spp. or Echidna spp. or Scuticaria spp.
mw	maori wrasse	Cheilinus spp.
sol	soldierfish	Myripristis spp.
sp	sand perch	Parapercis spp.
sq	squirellfish	Neoniphon spp. or Sargocentron spp.
stnf	Stonefish	Synanceia spp.
tpf	trumpetfish	Aulostomus chinensis
ydb	yellow dot bream	Gnathodentex aurolineatus
snp	snapper	Lutjanidae
carrec	cardinal fish recruit	Apogon spp.
mwj	maori wrasse juvenile	Cheilinus spp.
bebj	big eye bream juvenile	Monotaxis grandoculis
solj	soldierfish juvenile	Myripristis spp.
ydbj	yellow dot bream juvenile	Gnathodentex aurolineatus
carj	juvenile cardinal fish	Apogon spp.
oct	octopus	
spotted mry	spotted moray	Gymnothorax moringa or sp?
scorpaenid	scorpaenid	
pfr	pufferfish/puffer/puffer fish	Arothron sp
cornet fish	cornet fish	Fistularia commersonii
flounder	flounder	Canthigaster solandri or Arothon meleagris
box fish	box fish	Ostracion sp or Lactoria sp. (Ostraciidae)
bream	bream	nemipteridae
blck sq	black squirrelfish	Sargocentron spp
seabream	seabream	Acanthopargus sp? Or just Sparidae
razor fish	razor fish	Insiitstius sp
checker	checker wrasse	Rhinecanthus aculeatus
ot	octopus maybe? Orange trigger?	
blcktrig	black trigger	Melichthys sp
argus	peacock wrasse	Halichoeres argus
snowflake mry	snowflake moray	Echidna nebulosa
longface emperor	Longface emperor	Lethrinus olivaceus
clown coris	Clown coris	Coris aygula
orange trigger	Orange-lined triggerfish	Balistapus undulatus
scythe trigger	Scythe triggerfish	Sufflamen bursa
checker wrasse	Checkerboard wrasse	Halichoeres hortulanus
picasso	Picasso triggerfish	Rhinecanthus aculeatus
porcupine	Porcupine fish	Diodon sp
yellow anal fin snp	snapper	Lutjanus sp
yellow tail snp	snapper	Lutjanus sp
tripletail	triple tail wrasse	Cheilinus trilobatus
bw puffer	Black and white pufferfish	Arothron sp
uncertain	uncertain if a settler? 2003 reefs 99, 110	

Data Processing Description

Data Processing:

Calculations: Note: data were entered into excel and then restructured with a macro to create the final data set. Because of this data entry method there maybe two similar entries. (e.g., if there were two fish of species or type X that were the same size (Y), they would each be on the final data sheet as Fish X, Size Y, count: 1, instead of Fish X and Y size count: 2)

BCO-DMO Processing Notes
- Generated from original file "LTR_ThalassomaSurveys.csv" contributed by Rebecca Atkins
- Parameter names edited to conform to BCO-DMO naming convention found at Choosing Parameter Name
- Any blank rows removed

[table of contents | back to top]

Data Files

File
LTR_ThalassomaSurveys.csv (Comma Separated Values (.csv), 3.58 MB) MD5:f09095b94e32aa322e97dafd89d6e2d9 Primary data file for dataset ID 645195

[table of contents | back to top]

Parameters

Parameter	Description	Units
DATE	date of data observation	DD-MMM-YYYY
Observer	name of observer (name of observer (Jeff Shima; Sean Geange; Craig W. Osenberg; Jada S. White; Colette St. Mary; Chris McDermot); (JS; Geange; CWO; White; JSW; CSTM; CMcD; LR; Kindsvater)	text
Time	time of begin observation period for site	HH:MM
Reef	Number corresponding to reef ID	dimensionless
Treatment	Treatment (does not apply to this data set)	NA
Species	Species or category	text
Size	visual estimate of length	mm
Number	number of individuals of given species/length	number of individuals
No_Settlers	number of new settlers	number of individuals
Predators	Also gives ID of "other predators"; as per abbreviation codes listed below	number of individuals
Notes	free text notes corresponding to observation; site; date; etc; Also gives ID of "other predators"; as per abbreviation codes listed in Aquisition decription	text

[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

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-0242312

[table of contents | back to top]