Clownfish photos from the West coast of Leyte, the Philippines in the municipalities of Albuera and Bay Bay City between 2015 and 2018

Website: https://www.bco-dmo.org/dataset/862334
Data Type: Other Field Results
Version: 1
Version Date: 2022-11-21

Project
» RAPID: Mega-typhoon impacts on the metapopulation resilience of coral reef fishes (Reef Fish Resilience)

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Abstract
Clownfish photos taken in association with the clownfish log dataset (https://www.bco-dmo.org/dataset/781917) from the West coast of Leyte, the Philippines in the municipalities of Albuera (10.91667, 124.69667) and Bay Bay City (11.07611, 124.87525), 2015-2018.

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Coverage

Spatial Extent: **N**:11.0165 **E**:124.8083 **S**:10.6299 **W**:124.555
Temporal Extent: 2015-05-28 - 2018-04-10

Dataset Description

Clownfish image zip files by year can be downloaded from the "Data Files" section of this page. This is an example clownfish image included in this dataset:

See Related Datasets and Supplemental Files sections for other data collected as part of the same transect and quadrant surveys.

Methods & Sampling

Photos taken of clownfish collected in the clownfish log dataset (https://www.bco-dmo.org/dataset/781917). Photo file numbers (e.g., img_XXX) are indicated in the clownfish log.

Location: West coast of Leyte, Philippines in the municipalities of Albuera (10.91667, 124.69667) and Bay Bay City (10.676940, 124.799170). Field seasons (SCUBA) in Leyte, Philippines to study coral reef fish resilience.

See the Supplemental Files section for species codes and tail codes used in this dataset along with the clownfish scientific names.

2015-2017 methods:

identified fish photos

- download fish photos from drive to laptop
- match photos with data sheet using time stamp and description of tail color
- Type in photo filename under column “file_name”
- use images to open identified photos
- in imagej, use caliper or paper lines (.45cm space between each line) to set scale
- using scale, measure fish from tip of nose to longest point on tail
- record measured length under column "imagej size"
- measure same fish from tip of nose to the crease or fold in tail
- record measured length under column "imagej forklength"
- repeat with each photo

2018 methods:

- download fish photos from drive to laptop
- match photos with data sheet using time stamp and description of tail color
- Type in photo filename under column “file_name”
- use images to open identified photos
- in imagej, use caliper or paper lines (.35cm space between each line) to set scale
- Using straight line tool, measured nose to point and nose to fork length

- Used freehand tool to draw around whole tail and measure function to calculate area
- If needed, measured small orange regions
- record measured length under column "imagej size"
- measure same fish from tip of nose to the crease or fold in tail
- record measured length under column "imagej forklength"
- repeat with each photo

Data Processing Description

BCO-DMO Data Manager Processing Notes:
* tables contained in the following excel files imported into the BCO-DMO data system and combined into one table served from this page. clownfish_photo_data_2015-2016.xlsx,clownfish_photo_data_2017.xlsx,clownfish_photo_data_2018.xlsx
* jpg extension added to filename data column.
* added image_folder column to indicate which folder within the .zip files the image is contained in.
* date format changed to ISO 8601 format yyyy-mm-dd
* replaced commas with semicolons within values
* column "greyed_out" removed upon submiter request as it was only useful to project management.

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Data Files

File	
Clownfish images 2015-05 filename: 2015_05_clownfish_images.zip Clownfish photographs from May of 2015.	(ZIP Archive (ZIP), 1.64 GB) MD5:e8dade78c37662ff738f07b69c725580
Clownfish images 2016 filename: 2016_clownfish_images.zip Clownfish photographs from 2016. Note that all are unique images. For example, "MICR0001 (1).JPG" and "MICR0001 (2).JPG" are unique images not duplicate images.	(ZIP Archive (ZIP), 2.11 GB) MD5:e7f77a1779c668079e8dd13f6593c4d9
Clownfish images 2017 filename: 2017_clownfish_images.zip Clownfish photographs from May of 2017.	(ZIP Archive (ZIP), 1.20 GB) MD5:6a3af15b017e7abc45591fa3494eb056
Clownfish images 2018 filename: 2018_clownfish_photos.zip Clownfish photographs from 2018. Note that all images are unique. For example "MICR0007 (1).jpg" and "MICR0007 (2).jpg" are not duplicates.	(ZIP Archive (ZIP), 3.04 GB) MD5:c9c302afcd0cf23f831d368ed88049e2
clownfish_photo_data.csv Primary data file for dataset ID 862334	(Comma Separated Values (.csv), 651.19 KB) MD5:1e47bfcb12f0ea239785a6623f110fbc

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Supplemental Files

File
Clownfish species codes filename: clownCodes.csv (Comma Separated Values (.csv), 310 bytes) MD5:09dd506d8c9a32ba238cbdb86b0cc90f A table containing clownfish species code, species name, and AphiaID (taxonomic identifier at the World Register of Marine Species (WoRMS, marinespecies.org). Column name and description: ClownCode, Clownfish species code Clownfish, Scientific name (Genus species) AphiaID, Taxonomic identifier for species (see World Register of Marine Species for more on Aphia IDs).
Clownfish Tail Codes filename: tailCodes.csv (Comma Separated Values (.csv), 327 bytes) MD5:72bb6046dac715e496cd32cc1de38345 A table containing clownfish tail codes and meanings. Column name and description: TailCode, Tail code Tail color, Description of tail including shape and color
Example clownfish image filename: MICR3381.JPG (JPEG Image (.jpg), 2.73 MB) MD5:3d22fb629d97fd38db2049ea9e9687eb This is an example image of a clownfish. This image is included in the image bundle 2015_05_clownfish_images.zip

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Related Datasets

IsRelatedTo

Pinsky, M., Stuart, M. (2020) **Clownfish collection log including such as depth, species, and size from coastal reefs of Ormoc Bay, Leyte, Philippines, 2012-2018.** Biological and Chemical Oceanography Data Management Office (BCO-DMO). (Version 1) Version Date 2019-11-06 doi:10.26008/1912/bco-dmo.781917.1 [view at BCO-DMO]
Relationship Description: Clownfish photos taken in association with the "Clownfish log" dataset.

Pinsky, M., Stuart, M. (2020) **Dive log from coastal reefs of Ormoc Bay, Leyte, Philippines, 2012-2018.** Biological and Chemical Oceanography Data Management Office (BCO-DMO). (Version 1) Version Date 2019-11-06 doi:10.26008/1912/bco-dmo.781671.1 [view at BCO-DMO]
Relationship Description: Data from the same dives.

Pinsky, M., Stuart, M. (2022) **Fish and invertebrate transect survey dataset from the West coast of Leyte, the Philippines in the municipalities of Albuera (10.91667, 124.69667) and Bay Bay City (11.07611, 124.87525), 2014-2017.** Biological and Chemical Oceanography Data Management Office (BCO-DMO). (Version 1) Version Date 2022-11-22 doi:10.26008/1912/bco-dmo.862405.1 [view at BCO-DMO]
Relationship Description: Data collected as part of the same transect surveys.

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Parameters

Parameter	Description	Units

date	Date of observation (local time zone, UTC+8) in ISO 8601 format YYYY-MM-DD	unitless
obs_time	Time of observation (local time zone, UTC+8) in ISO 8601 format hh:mm:ss	unitless
ISO_DateTime_UTC	Date and time of observation (UTC) in ISO 8601 format YYYY-MM-DDThh:mm:ssZ	unitless
sample_id	sample id number for fin-clip (if taken)	unitless
tag_id	PIT tag number	unitless
size	size measured in field	centimeters
col	tail color noted in field (see supplemental files for tail codes)	unitless
image_time	time photo was taken (local time zone, UTC+8) in ISO 8601 format hh:mm:ss	unitless
image_name	photo file name	unitless
image_folder	Name of folder the image is contained in within the .zip file bundles (e.g. folder "2015_05_clownfish_images" is contained in zip file bundle 2015_05_clownfish_images.zip)	unitless
fish_table_id	Identifier for fish table. This fish_table_id is also in the "clownfish log" dataset https://www.bco-dmo.org/dataset/781917.	unitless
gen_id	genotype identification number	unitless
color	tail color noted in field	unitless
site	Site name	unitless
fish_notes	Fish notes	unitless
dive_notes	Dive notes	unitless
notes	additional notes	unitless

unprocessed_images	Other images for fish that were not processed	unitless
imagej_size	total length measured from the image using imageJ	centimeters
imagej_forklength	fork length measured from the image using imageJ	centimeters
tail_spread	is the tail spread out so that it is all visible	unitless
tail_area	area of the tail calculated using imageJ	square cm (cm2)
orange_area	area of the tail that is orange calculated using imageJ	square cm (cm2)
file_analyzer	Initials of the person who examined the photo	unitless
imageJ_collector	initials of the person who ran the imageJ script	unitless
color_disagreement	A flag to indicate if the tail color listed on the field datasheet does not match the color interpreted from the photo. If there is disagreement, further review would be required to A) make sure the photo is actually of that fish B) discover why there would be a difference between the field collector's interpretation and the photo reviewer's interpretation (sometimes fish size or other fish present on the anemone influence the field collector's interpretation; for example, we do not expect two large females on one anemone). A "Y", "N", or a photo reviewer's initials indicate a disagreement.	unitless
photo_color	*The clownfish tail color interpreted from the photo*	unitless
Example_Photo	The image selected by the photo reviewer as the best of this particular fish	unitless

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Instruments

Dataset-specific Instrument Name	Sealife Micro HD
Generic Instrument Name	Underwater Camera
Dataset-specific Description	Sealife Micro HD (13 megapixel photos, 1080p video, 140 degree super-wide photos)
Generic Instrument Description	All types of photographic equipment that may be deployed underwater including stills, video, film and digital systems.

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Project Information

RAPID: Mega-typhoon impacts on the metapopulation resilience of coral reef fishes (Reef Fish Resilience)

Coverage: West coast of Leyte Island, Visayas, Philippines

Description from NSF award abstract:
When Typhoon Haiyan hit the Philippines it had sustained winds of 305 to 315 kph and was the strongest storm ever to make landfall. Storms are one of the most important disturbances to coral reef ecosystems. Previous research has primarily emphasized that habitat recovery is important for the recovery of reef fish communities after disturbance. We understand little, however, about the role of larval dispersal in mediating species responses to disturbance. Reef fish function as metapopulations connected by larval dispersal among reefs, and larval connectivity is therefore a critical process for their dynamics. A field site directly in Typhoon Haiyan's path provides an ideal opportunity to address the role of larval dispersal during recovery. Over the course of four field seasons (2008 to 2013), nearly two thousand clownfish were surveyed along 20km of coastline. Clownfish possess the same basic life history as most reef fish (sedentary adults and pelagic larvae), but are sufficiently rare and visible that genetic parentage methods can be used to follow larval dispersal. This study site is therefore a unique location in which to understand the metapopulation impacts of a massive storm. This project will focus on three hypotheses: 1) Habitat destruction determines the short-term impacts of storms disturbance, 2) Metapopulation processes shape recolonization after disturbance, and 3) Disturbance allows rare competitors to increase in abundance. The project will address these questions with a combination of fixed and random transects to assess reef habitat and reef fish abundance and diversity, as well as detailed, spatially explicit surveys of anemones and clownfish. Genetic mark-recapture and parentage methods with yellowtail clownfish will pinpoint the origin of new recruits that recolonize the reef post-typhoon.

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Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-1430218

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