# 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

**Website**: https://www.bco-dmo.org/dataset/862405
**Data Type**: Other Field Results
**Version**: 1
**Version Date**: 2022-11-22

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



| Contributors | Affiliation | Role |
|---|---|---|
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**Abstract**
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.

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## Coverage

**Spatial Extent**: **N**:10.8743 **E**:124.787 **S**:10.6335 **W**:124.711
**Temporal Extent**: 2014-06-08 - 2017-05-08

## Dataset Description

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

### Methods & Sampling

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

Fish and invertebrate surveyor procedure:

- records dive and transect attributes:

- dive number

- transect number

- site name

- date

- time

- observer initials

- visibility (meters)

- depth at start of transect (feet)

- depth at end of transect (feet)

- transect length (meters)

- transect width (meters)

- expected transect duration (minutes)

- swim the length of a 25m by 5m transect in 20 minutes and record all fish (>2 cm, non-cryptic) within transect bounds

- swim back along the length of a 25m by 5m transect in 10 minutes and record all invertebrates within transect bounds

- record any additional notes

Instruments:
SCUBA gear (mask, tank, regulator, wetsuit, fins, dive computer)
Waterproof paper
Pencil

**Data Processing Description**

BCO-DMO Data Manager Processing notes:
* Imported data tables each sheet named "FishInvert" within files submitted to BCO-DMO as Transect_and_quadrat_data/GPSSurveys.*.xlsx
* supplemental transect locations table from Transect_locations/Transect_locations.*.xlsx concatenated together and attached to this dataset and Benthic Cover dataset as a supplemental file. See the file description for details about one location lat/lon that was updated based on a comment in the file.
* Taxon and ID codes for Fish, anemone, and invertebrates added as a supplemental file from codes in "Codes" sheet of GPSSurveys.*.xlsx. Tail and "Clown" codes were not used here, but can be found as part of the related "Clownfish photo" dataset and log.
* replaced semicolons in time values to colons to match the rest of the time format.
* Column Image_nums listed file image numbers delimited with either a space, comma, or comma and space. Changed to semicolon delimiter for consistency.
* Date format changed to ISO 8601 format YYYY-MM-DD
* Column ISO_DateTime_UTC added to data table from local dates and times.
* After consultation with the data submitter, null values in count colunms were changed to 0 values since that is the correct value to use. Columns updated (Num_0_5 Num_5_10 Num_10_15 Num_15_20 Num_20_25 Num_25_30 Num_30_35 Num_35_40 Num_40_45 Num_45_50 Num_50_55 Num_55_plus).

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## Data Files

| File |
| --- |
| **fish_inverts.csv** (Comma Separated Values (.csv), 169.37 KB)<br>MD5:58a3e01edcb484fb6a29dad438fac1bf<br>Primary data file for dataset ID 862405 |

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## Supplemental Files

| File |
| --- |
| **Fish and invertebrate codes**<br>filename: taxon_and_identification_codes.csv (Comma Separated Values (.csv), 1.96 KB)<br>MD5:c5546f7c019a61cdc76b2223696746a5<br>Fish and invertebrate codes. This table contains the following parameters (columns):<br>Code_type = Code type (AnemCode,FishCode,InvCode)<br>Code = Code for the family, species, or identification as used in related data tables.<br>Taxon_or_identification= Either a species, family, or description of an organism. e.g. Family (Apogonidae) or identification (e.g. Sea anemone)<br>AphiaID = World Register of Marine Species identifier for the taxonomic name |
| **Transect and quadrat locations**<br>filename: transect_locations.csv (Comma Separated Values (.csv), 51.60 KB)<br>MD5:668c935737d5d7021dda620c2f7dea32<br>Transect and quadrat information. Lat/lon points are usually the southern edge of the transect.<br>Parameters (column name, description, and units):<br>survey_season = year of survey season<br>site = site name<br>Type = type (Fixed or Random)<br>direction= Direction (e.g. NE for North East)<br>Waypoint Name =Waypoint name (e.g. Cabatoan F1 real)<br>lat = latitude in decimal degrees<br>lon = longitude in decimal degrees<br>Quadrat_Number = Quadrat number<br>Quadrat_Depth = Quadrat depth<br>Note = Note<br>This table was imported from multiple Excel files and concatenated into one table. Table was transformed from multiple quadrant depth columns to Quadrat_Number and Quadrat_Depth columns. One of the original excel files (Transect_locations2016_05.xlsx) had a note "Moved Fixed 2 because it was too shallow - 10.76399, 124.78524." Since the strikethrough formatting isn't preserved in the data tables BCODMO imports, the values in the lat/lon columns were updated to use the new values provided in the comment. |

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## Related Datasets

### IsRelatedTo

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) **Benthic cover quadrat observations and photos from the West coast of Leyte, the Philippines in the municipalities of Albuera and Bay Bay City, 2014-2017.** Biological and Chemical Oceanography Data Management Office (BCO-DMO). (Version 1) Version Date 2022-11-08 doi:10.26008/1912/bco-dmo.862410.1 [view at BCO-DMO]
*Relationship Description: Data from the same transects.*

Pinsky, M., Stuart, M. (2022) **Clownfish photos from the West coast of Leyte, the Philippines in the municipalities of Albuera and Bay Bay City between 2015 and 2018.** Biological and Chemical Oceanography Data Management Office (BCO-DMO). (Version 1) Version Date 2022-11-21 doi:10.26008/1912/bco-dmo.862334.1 [view at BCO-DMO]
*Relationship Description: Data collected as part of the same transect surveys.*

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## Parameters

| Parameter | Description | Units |
|---|---|---|
| DiveNum | Dive Number | unitless |
| TransectNum | Transect Number | unitless |
| Site | Site name | unitless |
| Date | Date (local) | unitless |
| Time | Time (local) | unitless |
| Observer | observer initials | unitless |
| Vis_m | Visibility | meters (m) |
| Depth_start_ft | depth at start of transect | feet (ft) |
| Depth_end_ft | depth at end of transect | feet (ft) |
| Length_m | transect length | meters (m) |
| Width_m | transect width | meters (m) |
| Duration_min | duration of transect | minutes |
| Species | Species code (see supplemental species code table) | unitless |

| | | |
|---|---|---|
| Num_0_5 | number of individuals for 0 to 5 cm in length | per individual |
| Num_5_10 | number of individuals for 5 to 10 cm in length | per individual |
| Num_10_15 | number of individuals for 10 to 15 cm in length | per individual |
| Num_15_20 | number of individuals for 15 to 20 cm in length | per individual |
| Num_20_25 | number of individuals for 20 to 25 cm in length | per individual |
| Num_25_30 | number of individuals for 25 to 30 cm in length | per individual |
| Num_30_35 | number of individuals for 30 to 35 cm in length | per individual |
| Num_35_40 | number of individuals for 35 to 40 cm in length | per individual |
| Num_40_45 | number of individuals for 40 to 45 cm in length | per individual |
| Num_45_50 | number of individuals for 45 to 50 cm in length | per individual |
| Num_50_55 | number of individuals for 50 to 55 cm in length | per individual |
| Num_55_plus | number of individuals above 55 cm in length | per individual |
| Notes | transect notes | unitless |
| Family | taxonomic family of fish or invertebrate | unitless |
| ISO_DateTime_UTC | Timestamp with time zone (UTC) in ISO 8601 format | unitless |

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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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