Temperature and light intensity recordings from a shallow-water habitat on the south side of Summerland Key, Florida from May 2015-May 2016.

Website: https://www.bco-dmo.org/dataset/724656
Data Type: Other Field Results
Version: 1
Version Date: 2018-01-25

Project
» RAPID - Abnormal bleaching in Cliona varians in the Florida Keys: Consequences for coral reef health (SPONGETROPHIES)

Contributors	Affiliation	Role
Hill, Malcolm	University of Richmond	Principal Investigator
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Coverage

Spatial Extent: **Lat**:24.6609 **Lon**:-81.4561
Temporal Extent: 2015-05-30 - 2016-12-31

Dataset Description

These data are temperature and light intensity recordings from a shallow-water (<1 m) habitat on the south side of Summerland Key, Fl.

These data are published in:

Hill M, Waters C, Bartels E (2016) A mass bleaching event involving clionaid sponges. *Coral Reefs* 35(1): 153.

Methods & Sampling

Data recorders were attached to the substratum with cable ties attached to a cement block. Temperature recordings were made from Spring of 2015 to Summer of 2016.

The first data logger had an recording interval of 30 min. It was removed on October 11, 2015 at 10:00, and replaced later in the day (October 11, 2015; 15:00). The new data logger had a recording interval set to 15 min. That data logger was collected on January 7th, 2016 (9:45), and replaced (12:00) with a logger that had a measuring interval of 30 mins.

Problem report: Data loggers were not kept free of algae, and thus the light intensity measurements

become unreliable later in the deployment. Algal growth was noticeable after approximately 3 weeks.

Data Processing Description

Data were processed using Hoboware.

BCO-DMO Processing notes:
-changed parameter names to BCO-DMO conventions
-reformatted time to hh:mm
-reformatted day to dd

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Data Files

File
724656.csv (Comma Separated Values (.csv), 701.80 KB) MD5:82a358415a07a5da743d55b71b6a303a Primary data file for dataset ID 724656

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Related Publications

Hill, M., Walter, C., & Bartels, E. (2016). A mass bleaching event involving clionaid sponges. Coral Reefs, 35(1), 153–153. doi:10.1007/s00338-016-1402-7
Results

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Parameters

Parameter	Description	Units
Time	Time of recording	hh:mm
Day	Day of month of recording	dd
Month	Month of recording	name
Year	Year of recording	yyyy
Temperature	Temperature recording	degrees Celsius
Intensity	Light intensity recording	Lux

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Instruments

Dataset-specific Instrument Name	Hobo Pendant Temperature/Light 64K Data Logger
Generic Instrument Name	Temperature Logger
Generic Instrument Description	Records temperature data over a period of time.

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Project Information

RAPID - Abnormal bleaching in Cliona varians in the Florida Keys: Consequences for coral reef health (SPONGETROPHIES)

Coverage: Looe Key and Summerland Key, Florida

NSF Award Abstract:
Sponges feed on bacteria and extract other material from the water column as they pump water through their tissues. This bio-filtration plays important ecological roles on coral reefs, and may serve as the base of food webs in these habitats by turning dissolved and particulate organic material into detritus (shed sponge cells) that can be eaten by a variety of organisms. This ecological function is known as the sponge loop, and the proposed research tests an unexplored aspect of the sponge loop. Sponges typically support dense and diverse symbiont communities that contribute to their overall ecological performance. It is unknown how the symbiont communities contribute to the ecological performance of the host sponge. During the recent mass coral bleaching event (i.e., loss of algal symbionts) in the Florida Keys, sponges with algal symbionts, that normally do not bleach, were also found to have bleached. This unusual observation offers the opportunity to test ideas about the role of symbionts in the sponge loop. That is, the hypothesis under consideration is that disruption of symbiotic associations compromises a sponge's bio-filtration capacity. The broader impacts of this project includes training undergraduate students, producing new scientific information, presenting public talks, and tying this work into existing integrated science courses at the University of Richmond.

The health of coral reef ecosystems may be tied directly to the normal functioning of coral reef sponges through the sponge loop. Detrital food webs may rely on the continued input of shed sponge cells through which dissolved and particulate organic matter are processed into biologically usable material. Previous work indicates that the symbiont state of the host sponge might influence feeding and pumping behavior, but no direct test of the impact symbiont state has on the sponge loop has been conducted. A recent bleaching event involving clionaid sponges in the lower Florida Keys provides an opportunity to test the hypothesis that reef health is a function of health of sponge symbiont populations through host filtration efficiency and feeding behavior. This research project focuses on interactions between symbiotic systems, host behavior, and ecosystem function using Cliona varians. Water samples will be collected using IN-EX sampling followed by flow cytometry and microscopic analysis of the material expelled by sponges. Stable isotopic signatures of the hosts will be compared before, during, and after bleaching events.

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Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-1617255

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