

Snail foraging and temperature: barnacle mortality data from University of Washington Friday Harbor Laboratories, Friday Harbor WA, Cantilever Point; 2010-2013 (Intertidal Temp Effects project)

Website: <https://www.bco-dmo.org/dataset/559683>

Version: 29 May 2015

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Project

» [The effects of temperature on ecological processes in a rocky intertidal community: a mechanistic approach](#)
(Intertidal Temp Effects)

Contributors	Affiliation	Role
Carrington, Emily	University of Washington (FHL)	Principal Investigator
Hayford, Hilary	University of Washington (FHL)	Contact
Gegg, Stephen R.	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager

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Dataset Description

Experimental shoreline data on snail foraging, temperature, and tidal cycling - Barnacle Mortality Data

Methods & Sampling

Experimental field experiment conducted in rocky intertidal. Please see related reference.

Related files and reference:

Hayford HA, SE Gilman, and E Carrington (2015) Foraging behavior minimizes heat exposure in a complex thermal landscape. Marine Ecology Progress Series. 518:165-175

Data Processing Description

See related files and reference:

Hayford HA, SE Gilman, and E Carrington (2015) Foraging behavior minimizes heat exposure in a complex thermal landscape. Marine Ecology Progress Series. 518:165-175

BCO-DMO Processing Notes

- Generated from original file "foraging data 473867 HH 5-29-15.xlsx", Sheet: "barnacle mortality" contributed by Hilary Hayford
- Approx Lat/Lon of experiment locale appended to enable data discovery in MapServer
- Date formatted as YYYYMMDD
- Parameter names edited to conform to BCO-DMO naming convention found at [Choosing Parameter Name](#)

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Data Files

File
Barnacle_Mortality.csv (Comma Separated Values (.csv), 18.41 KB) MD5:98d124b64e106fc68053cc88c4e64c18
Primary data file for dataset ID 559683

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Parameters

Parameter	Description	Units
Experiment_Location	Laboratory identifier where experiments were conducted	text
Lat	Latitude position of platform (South is negative)	decimal degrees
Lon	Longitude position of platform (West is negative)	decimal degrees
date	Date of measurement/observation	YYYYMMDD
plot	Replicate number; each consists of independent concrete island mesocosm	dimensionless
barnacles_mortality_west	Barnacle mortality on western face since previous day; may be fraction if extrapolated by linear interpolation between days as barnacle mortality was not sampled on faces where snails were actively feeding	number of individuals
barnacle_mortality_east	Barnacle mortality on eastern face since previous day; may be fraction if extrapolated by linear interpolation between days as barnacle mortality was not sampled on faces where snails were actively feeding	number of individuals

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Deployments

lab_UW_FHL_OAEL_Carrington

Website	https://www.bco-dmo.org/deployment/59061
Platform	lab UW FHL OAEL
Report	http://depts.washington.edu/fhl/oael.html
Start Date	2010-09-01
End Date	2013-08-31
Description	FHL Ocean Acidification Environmental Laboratory (OAEL) Overview FHL completed construction of a new 1500 sq. ft. experimental facility for ocean acidification research in summer 2011. The facility was funded by an award from NSF's Field Stations and Marine Laboratories (FSML) program, matching funds from the University of Washington, and private donors. The experimental facility currently includes an analytical chemistry laboratory, indoor mesocosms fed by a custom seawater-CO2 blending system and temperature control, laboratory space, as well as outdoor in-water mesocosms. Led by Dr. Emily Carrington, OAEL Director (ecarring@uw.edu), this state-of-the-art ocean acidification facility offers unique research and instructional opportunities for experimental manipulations with on-site monitoring of carbonate system parameters. FHL's location, facilities, and educational mission combine to make an ideal site for the experimental mesocosm and analytical facility.

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Project Information

The effects of temperature on ecological processes in a rocky intertidal community: a mechanistic approach (Intertidal Temp Effects)

Website: <http://depts.washington.edu/nucella/>

Coverage: San Juan Islands, Washington, USA

(Extracted from the NSF Award abstract)

Temperature influences organismal physiology, behavior, community interactions, and ecosystem function; yet rarely are the mechanisms understood. Accurately predicting the consequences of temperature for a species requires knowledge of: local climatic conditions, the relationship between climate and organismal body temperature, and the physiological and ecological consequences of body temperature. Few studies to date have explored all three areas concurrently. This project will examine in detail the biophysical, physiological, and ecological effects of temperature on a rocky intertidal community, a marine ecosystem that has emerged as a model system for studying the ecological consequences of temperature. It will focus on three major species, representative of rocky marine shore species worldwide: the barnacle, *Balanus glandula*, its predator *Nucella ostrina*, and the rockweed *Fucus gardneri*, which provides shelter for both species. The research is centered around three major goals: to develop biophysical models to explicitly link local climate to organismal body temperatures; to develop energy budget models to relate organismal body temperature to individual performance; and to identify the effect of temperature on interactions among the three species through a series of laboratory and field experiments. This research will provide a model system for understanding the effects of temperature on both individual performance and species interactions. It represents a significant contribution to understanding basic ecological questions, such as the role of temperature in structuring communities, and will also contribute to a more mechanistic understanding of the ecological consequences of future climate changes.

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Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-0824903

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