

# Snail foraging and temperature: tidal times 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/553783>

Version: 16 March 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
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## Dataset Description

Experimental shoreline data on snail foraging, temperature, and tidal cycling - Tidal Times Data

Observed tidal elevations:

NOAA station #9449880, Friday Harbor

Lat: 48 32.8N, Lon: 123 00.6W

## 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 "Fig 2 473867 HH 3-16-15.xlsx", Sheet: "Fig 2a" 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
<b>Tidal_Times.csv</b> (Comma Separated Values (.csv), 5.58 KB) MD5:21532162396f8e5ab7ebcfc11476d112
Primary data file for dataset ID 553783

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## Parameters

Parameter	Description	Units
Lab_Id	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
sunrise	time of sunrise 24 hour time PDT	HH:MM
solarnoon	time of solar noon 24 hour time PDT	HH:MM
sunset	time of sunset 24 hour time PDT	HH:MM
lowtide1start	time first low tide after midnight drops below +1.25 m 24 hour time PDT	HH:MM
lowtide1end	time first low tide after midnight rises above +1.25 m 24 hour time PDT	HH:MM
lowtide2start	time second low tide after midnight drops below +1.25 m 24 hour time PDT	HH:MM
lowtide2end	time second low tide after midnight rises above +1.25 m 24 hour time PDT	HH:MM
lowtide3start	time third low tide after midnight drops below +1.25 m 24 hour time PDT	HH:MM
lowtide3end	time third low tide after midnight rises above +1.25 m or low tide extends until midnight 24 hour time PDT	HH:MM

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## Deployments

**lab\_UW\_FHL\_OAEL\_Carrington**

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/59061">https://www.bco-dmo.org/deployment/59061</a>
<b>Platform</b>	lab UW FHL OAEL
<b>Report</b>	<a href="http://depts.washington.edu/fhl/oael.html">http://depts.washington.edu/fhl/oael.html</a>
<b>Start Date</b>	2010-09-01
<b>End Date</b>	2013-08-31
<b>Description</b>	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 ( <a href="mailto:ecarring@uw.edu">ecarring@uw.edu</a> ), 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

<b>Funding Source</b>	<b>Award</b>
<a href="#">NSF Division of Ocean Sciences (NSF OCE)</a>	<a href="#">OCE-0824903</a>

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