

Fluorescence data (phytoflash) collected by the AUV Honey Badger (Wave Glider) in the North Pacific gyre in 2015 (MAGI project)

Website: <https://www.bco-dmo.org/dataset/654023>

Data Type: Other Field Results

Version:

Version Date: 2016-08-15

Project

» [Long Duration AUVs as tools to explore Mesoscale feature aggregate interactions \(MAGI\)](#) (MAGI)

Contributors	Affiliation	Role
Villareal, Tracy A.	University of Texas at Austin (UT Austin)	Principal Investigator, Contact
Wilson, Cara	National Oceanic and Atmospheric Administration - Southwest Fisheries Science Center (NOAA SWFSC ERD)	Co-Principal Investigator
York, Amber D.	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager

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Coverage

Spatial Extent: N:29.47909 E:-144.82668 S:19.99672 W:-156.05396

Temporal Extent: 2015-09-02 - 2015-09-09

Dataset Description

These data from the phytoflash fluorescence sensor include fluorescence maximum, minimum, variance, and maximum quantum yield of photochemistry in Photosystem II (PSII) collected by the AUV Honey Badger (Wave Glider model V2) during a deployment in May of 2015 in the North Pacific Ocean.

For more information on project MAGI and a description of Honey Badger, see: <http://oceanview.pfeg.noaa.gov/MAGI/>

Additional support was provided by the PacX Challenge from Liquid Robotics, Inc.

Methods & Sampling

The AUV Honey Badger is a Wave Glider® (model SV2) from Liquid Robotics. It was deployed from the Island of Hawai'i in May of 2015 as part of Mesoscale Features Aggregate Interactions (MAGI) project. The trackline

is in the North Pacific Ocean and passes the ocean time-series station ALOHA.

For more information on project MAGI and a description of Honey Badger, see: <http://oceanview.pfeg.noaa.gov/MAGI/>

Data Processing Description

These data are raw telemetry data obtained through the Wave Glider management system at Liquid Robotics, International.

For more information about this software please see the Liquid Robotics Software Page:

<http://www.liquid-robotics.com/platform/software/>

BCO-DMO Data Manager Processing Notes:

- * added a conventional header with dataset name, PI name, version date
- * modified parameter names to conform with BCO-DMO naming conventions
- * blank values replaced with no data value 'nd'
- * values of "NaN" and "nan" changed to "nd"
- * latitude and longitude were rounded to 5 decimal places from 12

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Data Files

File
phytoflash.csv (Comma Separated Values (.csv), 9.47 KB) MD5:2fef3821c979121981a0268b38be8b29 Primary data file for dataset ID 654023

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Parameters

Parameter	Description	Units
ISO_DateTime_UTC	Time (UTC) in format YYYY-mm-ddTHH:MM:SS[.xx]Z	unitless
lat	Latitude	decimal degrees
lon	Longitude; west is negative	decimal degrees
fluor_min	Minimum fluorescence	relative fluorescent units (RFU)
fluor_max	Maximum fluorescence	relative fluorescent units (RFU)
fluor_var	Variable fluorescence; fluor_max - fluor_min	relative fluorescent units (RFU)
yield	Maximum quantum yield of photochemistry in Photosystem II (PSII); fluor_var/fluor_max	dimensionless

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Instruments

Dataset-specific Instrument Name	phytoflash
Generic Instrument Name	Fluorometer
Dataset-specific Description	Turner Designs' PhytoFlash is an active fluorometer that measures quantum efficiency of photosynthesis. For more details see the PhytoFlash page: http://www.turnerdesigns.com/submersible?page=shop.product_details&flypa...
Generic Instrument Description	A fluorometer or fluorimeter is a device used to measure parameters of fluorescence: its intensity and wavelength distribution of emission spectrum after excitation by a certain spectrum of light. The instrument is designed to measure the amount of stimulated electromagnetic radiation produced by pulses of electromagnetic radiation emitted into a water sample or in situ.

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Deployments

HoneyBadger2015

Website	https://www.bco-dmo.org/deployment/653275
Platform	AUV Honey Badger
Start Date	2015-10-31
End Date	2015-11-04
Description	The AUV Honey Badger is a Wave Glider(R) (model SV2) from Liquid Robotics. It was deployed from the Island of Hawai'i in May of 2015 as part of Mesoscale Features Aggregate Interactions (MAGI) project. The trackline is in the North Pacific Ocean and passes the ocean time-series station ALOHA. For more information on project MAGI and a description of Honey Badger, see: http://oceanview.pfeg.noaa.gov/MAGI/

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Project Information

Long Duration AUVs as tools to explore Mesoscale feature aggregate interactions (MAGI) (MAGI)

Coverage: Eastern N. Pacific central gyre

NSF award abstract:

Remote areas of the ocean are difficult to sample for short-lived or episodic features. This project will use a new sampling platform, the Wave Glider, and provide a continuous presence in the central North Pacific gyre. The six month duration of the mission will allow repeated sampling as well as spatial coverage previously unavailable. This mission will incorporate phytoplankton specific sensors as well as a set of optical sensors that will provide information on distribution, physiology and aggregation of a unique diatom-nitrogen fixing cyanobacterium symbiosis. When completed, this program will have generated the first data sets that follow these diatom blooms over extended periods in the region. Access to this instrumentation was facilitated by the PacX challenge, an international competition to produce high quality research from long-duration autonomous vehicles in the North and South Pacific Ocean. As a result of winning that competition, the principal investigator has been awarded the use of 6 months of the Honey Badger Wave Glider time in 2014. The Wave Glider is a wave-powered surface vessel capable of extended duration missions. In order to maximize this the principal investigator will outfit the glider with advanced sensors to quantify zones of intense diatom activity and

aggregation along mesoscale features in the Pacific (Project MAGI: Mesoscale feature-AGregate Interactions).

Note: This project is funded by an NSF RAPID award.



The Honey Badger Team, image courtesy of Tracy Villareal



Honey Badger, image courtesy of Tracy Villareal

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Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-1430048

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