Japanese Tsunami Marine Debris: biofouling register from the Hawaii, Washington and Oregon coasts from 2012-2014 (JTMD-BF project)

Website: https://www.bco-dmo.org/dataset/491237
Version: 2013-09-27

Project
» Testing the Invasion Process: Survival, Dispersal, Genetic Characterization and Attenuation of Marine Biota on the 2011 Japanese Tsunami Marine Debris Field. (JTMD-BF)

Contributors	Affiliation	Role
Carlton, James T.	Williams College (Williams)	Lead Principal Investigator
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Dataset Description

This dataset is the register of debris items collected during the project. It includes the item's registry code number, the type of debris (dock, float, vessel, etc.), the name of the debris and boat name if available, its origin in Japan, the location collected, and the date found.

Access to this data is RESTRICTED for the duration of the project funding period (through 2014).

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Related Publications

Carlton, J. T., Chapman, J. W., Geller, J. B., Miller, J. A., Carlton, D. A., McCuller, M. I., ... & Ruiz, G. M. (2017). Tsunami-driven rafting: Transoceanic species dispersal and implications for marine biogeography. Science, 357(6358), 1402-1406. https://doi.org/10.1126/science.aao1498
Results

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Parameters

Parameter	Description	Units
register_num	identification code in register of marine debris	unitless
sample_type	type of structure the sample is from such as dock; float; vessel	unitless
sample_name	name of sample	unitless
boat_name	Japanese boat name, if applicable	unitless
st_terr_prov	state territory or province where debris was picked up	unitless
location_coll	geographic location of debris recovery	unitless
year	year debris was picked up	unitless
month	month debris was picked up, local time	unitless
day	day debris was picked up, local time	unitless
origin_japan	origin of debris, including prefecture	unitless

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Deployments

JTMD_2012

Website	https://www.bco-dmo.org/deployment/552342
Platform	Carlton_shore
Start Date	2012-12-01
End Date	2014-11-30
Description	Japanese tsunami marine debris collection

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Project Information

Testing the Invasion Process: Survival, Dispersal, Genetic Characterization and Attenuation of Marine Biota on the 2011 Japanese Tsunami Marine Debris Field. (JTMD-BF)

Coverage: North Pacific Ocean (W and E)

I. Biodiversity: Population and Food Web Analysis: Viability and Reproductive Condition: Dispersal

I. Biodiversity, Population and Food Web Analysis; Viability and Reproductive Condition; Dispersal Track and Growth History; Shellfish Pathogens/Parasites

This project seeks to document the biodiversity of Japanese species on arriving tsunami-generated debris, through morphological and genetic identification (including massively parallel DNA sequencing of whole community samples) andthrough quantitative replicate samples to determine numerical abundance, density, frequency, and biomass. In addition, species accumulation and rarefaction curves will be determinded to estimate total inbound diversity.

Focuses include:

- Population structure of selected taxa, based on size/age class distributions.
- Viability and reproductive condition of selected taxa, based on fecundity, gonadal indices, and/or spore production, upon arrival.
- Food web analyses based upon tissue stable isotope ratios *(*δ13C and δ15N*).*
- Dispersal track and growth history of selected taxa based on oxygen isotopic and elemental composition of shell calcite.
- Identity and prevalence of parasites and pathogens in oysters (*Crassostrea gigas*) and mussels (*Mytilus galloprovincialis*).

II. Biotic Attrition Over Time

Comparison of dead species assemblages on JTMD to live assemblages to assess the fate and alteration of debris communities over time.

III. Genetic Matching of Novel Invasions With JTMD Biota

Genetically characterize populations of target species so that if and when new invasions are detected, or when previously established invasions appear to be newly expanding or appearing in new locations, genetic studies can be undertaken to determine if these events are related to the JTMD phenomenon.

This is a Rapid Response Grant.

2020-09-30: Final data was not submitted for this project. The data for this research are available at the Dryad data depository (http://dx.doi.org/10.5061/dryad.rh01m). Contact Dr. Carlton for more information.

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Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-1266417

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