Underwater temperature, salinity, conductivity at Cantilever Point, Friday Harbor in the San Juan Islands from 2010-2013

Website: https://www.bco-dmo.org/dataset/473160
Version: 2013-12-11

Project
» Effects of Marine Preserves on Rocky Subtidal Communities (Subtidal Preserves)

Contributors	Affiliation	Role
Elahi, Robin	University of Washington Friday Harbor Laboratories (FHL)	Principal Investigator
Sebens, Kenneth	University of Washington Friday Harbor Laboratories (FHL)	Principal Investigator
Copley, Nancy	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager
York, Amber D.	University of Washington Friday Harbor Laboratories (FHL)	BCO-DMO Data Manager

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Coverage

Temporal Extent: 2010-02-10 - 2013-12-11

Dataset Description

Data reported here are from 10 Feb. 2010 through 11 Dec 2013. This data was downloaded from the Friday Harbor Labs weather station site, http://depts.washington.edu/fhl/wx.html.

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Data Files

File
FHL_ts.csv (Comma Separated Values (.csv), 4.53 MB) MD5:105f7898a38234978a743667da04e472 Primary data file for dataset ID 473160

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Parameters

Parameter	Description	Units
lat	latitude; north is positive	decimal degrees
lon	longitude; east is positive	decimal degrees
year	year	yyyy
month	month	1 to 12
day	day of month	1 to 31
yrday	day and decimal time; as 326.5 for the 326th day of the year or November 22 at 1200 hours (noon)	unitless
time	time	HH:MM
temp	water temperature	degrees Celsius
sal	salinity	PSU
cond	conductivity	Siemens/meter
ISODate	Date/Time (UTC) ISO formatted. This standard is based on ISO 8601:2004(E) and takes on any of the following forms: 2009-08-30T09:05:00[.xx] (local time) 2009-08-30T14:05:00[.xx]Z (UTC time)	unitless

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Instruments

Dataset-specific Instrument Name	Water Temperature Sensor
Generic Instrument Name	Water Temperature Sensor
Dataset-specific Description	SeaBird 37 MicroCAT measures temperature and conductivity.
Generic Instrument Description	General term for an instrument that measures the temperature of the water with which it is in contact (thermometer).

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Deployments

Sebens_lab

Website	https://www.bco-dmo.org/deployment/472912
Platform	Friday_Harbor
Start Date	2008-03-27
End Date	2011-03-14
Description	Predator removal from Marine Protected Areas in Puget Soudn, by SCUBA.

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Project Information

Effects of Marine Preserves on Rocky Subtidal Communities (Subtidal Preserves)

Website: http://depts.washington.edu/fhl/wx.html

Coverage: San Juan Island, Washington. Rocky subtidal habitats

Subtidal communities in temperate geographic zones of the world are faced with changes caused by fishing, climate change, habitat alteration and invasive species, yet we know fairly little about their community dynamics. The loss of large predators (species removals), and the introduction of nonindigenous species (species additions), are likely to have immediate and large consequences for the structure, resilience and function of subtidal communities. Marine preserves have recently been established in many coastal locations, including the San Juan Archipelago of Washington State. While they are demonstrated to have positive effects on certain fish populations, effects on the rest of the subtidal community are generally not known. The benefit of marine preserves to fisheries remains to be determined on a case-by-case basis. Regardless of the benefit to fisheries, they can serve effectively as conservation zones, similar to terrestrial parks, where original species assemblages can recover in the absence of human extraction. They also provide excellent venues to study the effects of large predators in relatively intact communities, in comparison to nearby non-preserve locations.

With goals such as maintaining or increasing biodiversity, it is important to understand how the protection of large predators influences small prey and non-prey species. Determining the ecological effects of fish extraction is of prime interest in the growing body of marine protected area science. Higher level predators can decrease the abundance of their prey, but can also indirectly increase the abundance of organisms two trophic levels beneath them through a trophic cascade. Additionally, non-trophic interactions may cause species abundances to change in unpredicted ways after the recovery of large predators. The investigators in this project will explore the interaction of invasive ascidian species in the Puget Sound region, including sites where they have invaded successfully and sites where they have not. Much of this research will be conducted in (and out of) a regional network of MPAs in San Juan Co., WA, with a focus on the rocky subtidal community on these shores.

The significance of this research applies to any nearshore temperate ecosystem with rocky substrate; thus it has broad ecological relevance, particularly with regard to management of coastal ecosystems. Coastal communities are changing due to extraction, invasive species, and climate change, yet we know little about these effects in the shallow rocky subtidal zone.

The FHL Research Apprenticeship Program is a successful vehicle to provide intensive research experiences to undergraduates, and it motivates many to pursue graduate and professional training. There will also be an opportunity for summer FHL Blinks Fellows (undergraduate researchers of diverse background) and REU students to work on this project. FHL research, including that done by students, also supports citizen-driven conservation priorities. A primary connection is through the San Juan County Marine Resources Committee (MRC). This research will also provide training for several graduate and undergraduate students in current techniques in subtidal ecological research and advanced SCUBA based research and operations. They will also be encouraged to take part in FHL K-12 Outreach activities, and the new GK-12 Program at FHL (and Seattle).

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Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-0850809

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