Water temperature at 20', 60' and 80' at Pt. Caution, Friday Harbor Lab in the San Juan Islands from 2008-2013

Website: https://www.bco-dmo.org/dataset/472988
Version: 2013-12-12

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

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Coverage

Temporal Extent: 2008-07-01 - 2013-01-21

Dataset Description

Water temperature was recorded at the Pumphouse along a vertical depth transect (20-80 ft) using a thermocouple (Onset Hobo Temp Loggers). Data reported here is from 1 July 2008 to 21 January 2013.

Data can also be viewed online at http://nvs.nanoos.org/Explorer and http://depts.washington.edu/fhl/wx.html

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Data Files

File
shady_temp_depth.csv (Comma Separated Values (.csv), 12.40 MB) MD5:64ef5ebf71973c0eabdb190ca5ef4f41 Primary data file for dataset ID 472988

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Parameters

Parameter	Description	Units
year	year	yyyy
month	month, local or utc?	1 to 12
day	day of month; local or utc??	1 to 31
yrday_local	day and decimal time; as 326.5 for the 326th day of the year or November 22 at 1200 hours (noon); local or utc??	unitless
time_local	time of day; local or utc??	HH:MM
temp	temperature at 20, 60 or 80 feet	degrees Celsius
lat	station latitude; north is positive	decimal degrees
lon	station longitude; west is negative	decimal degrees
depth	sensor depth	meters

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Instruments

Dataset-specific Instrument Name	Onset Pro v2
Generic Instrument Name	Onset HOBO Pro v2 temperature logger
Dataset-specific Description	Onset Hobo Temp Loggers
Generic Instrument Description	The HOBO Water Temp Pro v2 temperature logger, manufactured by Onset Computer Corporation, has 12-bit resolution and a precision sensor for ±0.2°C accuracy over a wide temperature range. It is designed for extended deployment in fresh or salt water. Operation range: -40° to 70°C (-40° to 158°F) in air; maximum sustained temperature of 50°C (122°F) in water Accuracy: 0.2°C over 0° to 50°C (0.36°F over 32° to 122°F) Resolution: 0.02°C at 25°C (0.04°F at 77°F) Response time: (90%) 5 minutes in water; 12 minutes in air moving 2 m/sec (typical) Stability (drift): 0.1°C (0.18°F) per year Real-time clock: ± 1 minute per month 0° to 50°C (32° to 122°F) Additional information (http://www.onsetcomp.com/) Onset Computer Corporation 470 MacArthur Blvd Bourne, MA 02532

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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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