OTU, sequences, and accessions from long-term monitoring sites in St. John, USVI.

Website: https://www.bco-dmo.org/dataset/736727
Data Type: Other Field Results
Version: 1
Version Date: 2018-05-17

Project
» LTREB Long-term coral reef community dynamics in St. John, USVI: 1987-2019 (St. John LTREB)
» RUI-LTREB Renewal: Three decades of coral reef community dynamics in St. John, USVI: 2014-2019 (RUI-LTREB)

Contributors	Affiliation	Role
Edmunds, Peter J.	California State University Northridge (CSUN)	Principal Investigator
Pochon, Xavier	The Cawthron Institute	Contact
Ake, Hannah	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager

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Coverage

Spatial Extent: **Lat**:18.32 **Lon**:-64.723

Dataset Description

Data published in Marine Biology paper entitled "Molecular characterization of symbiotic algae (Symbiodinium spp.) in soritid foraminifera (Sorites orbiculus) and a scleractinian coral (Orbicella annularis) from St John, US Virgin Islands".

Methods & Sampling

Methodology in paper (Pochon et al., 2014).

Data Processing Description

BCO-DMO Processing Notes:

-Reformatted column names to comply with BCO-DMO standards
-Removed special characters from data
-Replaced all blank cells with nd

Data Files

File
OTU_sequences.csv(Comma Separated Values (.csv), 6.43 KB) MD5:9c2f0ebfe7c26856d468a3945dc7eaa0

Related Publications

Pochon, X., Gates, R. D., Vik, D., & Edmunds, P. J. (2014). Molecular characterization of symbiotic algae (Symbiodinium spp.) in soritid foraminifera (Sorites orbiculus) and a scleractinian coral (Orbicella annularis) from St John, US Virgin Islands. Marine Biology, 161(10), 2307–2318. doi:10.1007/s00227-014-2507-6
Results
,
Methods

Parameters

Parameter	Description	Units
OUT_Ancestral_ITS2_type	Genetic identity of Symbiodinium identified	unitless
Symbiodinium_clade	Clade	unitless
Accession_number	Accession number	unitless
Reference	Reference	unitless
DNA_Sequence	DNA sequence	unitless

Deployments

Edmunds_VINP

Website	https://www.bco-dmo.org/deployment/523357
Platform	Virgin Islands National Park
Start Date	1987-01-01
End Date	2016-09-01
Description	Studies of corals and hermit crabs

Project Information

LTREB Long-term coral reef community dynamics in St. John, USVI: 1987-2019 (St. John LTREB)

Website: http://coralreefs.csun.edu/

Coverage: St. John, U.S. Virgin Islands; California State University Northridge

Long Term Research in Environmental Biology (LTREB) in US Virgin Islands:

From the NSF award abstract:
In an era of growing human pressures on natural resources, there is a critical need to understand how major ecosystems will respond, the extent to which resource management can lessen the implications of these responses, and the likely state of these ecosystems in the future. Time-series analyses of community structure provide a vital tool in meeting these needs and promise a profound understanding of community change. This study focuses on coral reef ecosystems; an existing time-series analysis of the coral community structure on the reefs of St. John, US Virgin Islands, will be expanded to 27 years of continuous data in annual increments. Expansion of the core time-series data will be used to address five questions: (1) To what extent is the ecology at a small spatial scale (1-2 km) representative of regional scale events (10's of km)? (2) What are the effects of declining coral cover in modifying the genetic population structure of the coral host and its algal symbionts? (3) What are the roles of pre- versus post-settlement events in determining the population dynamics of small corals? (4) What role do physical forcing agents (other than temperature) play in driving the population dynamics of juvenile corals? and (5) How are populations of other, non-coral invertebrates responding to decadal-scale declines in coral cover? Ecological methods identical to those used over the last two decades will be supplemented by molecular genetic tools to understand the extent to which declining coral cover is affecting the genetic diversity of the corals remaining. An information management program will be implemented to create broad access by the scientific community to the entire data set.

The importance of this study lies in the extreme longevity of the data describing coral reefs in a unique ecological context, and the immense potential that these data possess for understanding both the patterns of comprehensive community change (i.e., involving corals, other invertebrates, and genetic diversity), and the processes driving them. Importantly, as this project is closely integrated with resource management within the VI National Park, as well as larger efforts to study coral reefs in the US through the NSF Moorea Coral Reef LTER, it has a strong potential to have scientific and management implications that extend further than the location of the study.

RUI-LTREB Renewal: Three decades of coral reef community dynamics in St. John, USVI: 2014-2019 (RUI-LTREB)

Website: http://coralreefs.csun.edu/

Coverage: USVI

Describing how ecosystems like coral reefs are changing is at the forefront of efforts to evaluate the biological consequences of global climate change and ocean acidification. Coral reefs have become the poster child of these efforts. Amid concern that they could become ecologically extinct within a century, describing what has been lost, what is left, and what is at risk, is of paramount importance. This project exploits an unrivalled legacy of information beginning in 1987 to evaluate the form in which reefs will persist, and the extent to which they will be able to resist further onslaughts of environmental challenges. This long-term project continues a 27-year study of Caribbean coral reefs. The diverse data collected will allow the investigators to determine the roles of local and global disturbances in reef degradation. The data will also reveal the structure and function of reefs in a future with more human disturbances, when corals may no longer dominate tropical reefs.

The broad societal impacts of this project include advancing understanding of an ecosystem that has long been held emblematic of the beauty, diversity, and delicacy of the biological world. Proposed research will

expose new generations of undergraduate and graduate students to natural history and the quantitative assessment of the ways in which our planet is changing. This training will lead to a more profound understanding of contemporary ecology at the same time that it promotes excellence in STEM careers and supports technology infrastructure in the United States. Partnerships will be established between universities and high schools to bring university faculty and students in contact with k-12 educators and their students, allow teachers to carry out research in inspiring coral reef locations, and motivate children to pursue STEM careers. Open access to decades of legacy data will stimulate further research and teaching.

Funding

Funding Source	Award
NSF Division of Environmental Biology (NSF DEB)	DEB-0841441
NSF Division of Environmental Biology (NSF DEB)	DEB-1350146