Coral reef fishery household survey, Moorea, French Polynesia, 2014-2015

Website: https://www.bco-dmo.org/dataset/676105
Data Type: Other Field Results
Version:
Version Date: 2017-01-30

Project
» Adaptive Capacity, Resilience, and Coral Reef State Shifts in Social-ecological Systems (Coral reef fishery)

Program
» Coastal SEES (Science, Engineering and Education for Sustainability NSF-Wide Investment) (Coastal SEES)

Contributors	Affiliation	Role
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Dataset Description

This dataset includes the results of a survey on household fishing in Moorea, French Polynesia, administered in 2014-2015 at Papetoi, Haapiti, and Afareaitu. Results are separated by district; both totals and total percentages are given.

Methods & Sampling

Approximately 20% of household were randomly sampled in each of the three districts: Papetoi, Haapiti, and Afareaitu.
Survey responses were aggregated (summed) by district and percentages were calculated

Data Processing Description

BCO-DMO Processing notes:
- added conventional header with dataset name, PI name, version date
- modified parameter names to conform with BCO-DMO naming conventions
- reformatted data to a flat file: added columns for table and table_title

- replaced blank cells with nd (no data) except in 'total' column, where the single column to left was duplicated and at the bottom of the 'total_percent' column where a hyphen was inserted.
- replaced N/A with nd (no data)
- removed apostrophes

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Data Files

File
survey.csv (Comma Separated Values (.csv), 99.58 KB) MD5:5468393c8c5b45b6453ed958c02e866e Primary data file for dataset ID 676105

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Parameters

Parameter	Description	Units
table	table number	unitless
table_title	title of table; the statement or question posed in the survey	unitless
response	possible responses to statement/question	unitless
Afareaitu	district on Moorea	unitless
Papetoai	district on Moorea	unitless
S_Haapiti	district on Moorea	unitless
total	total responses	unitless
total_percent	percent of total responses	unitless

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Deployments

Lauer_2014

Website	https://www.bco-dmo.org/deployment/676116
Platform	Moorea
Start Date	2014-01-01
End Date	2015-12-31

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Project Information

Adaptive Capacity, Resilience, and Coral Reef State Shifts in Social-ecological Systems (Coral reef fishery)

Website: http://lauer.sdsu.edu/sees/index.html

Coverage: Moorea, French Polynesia; 17S, 150W

Description from NSF award abstract:
This project will assess resilience in a coral reef social-ecological system. Over the last several decades, reefs around the Pacific island of Mo'orea, French Polynesia, have consistently reassembled to coral dominance after being impacted by major perturbations. Resilience to disturbance is a key component of coastal sustainability, as it maintains the reefs in a state capable of providing critical ecosystem services. The resilience of reefs in Mo'orea is particularly striking, given that coral reefs in many regions have experienced abrupt and potentially irreversible shifts from a coral dominated state, with complex structure and a rich fish community, to a macroalgae dominated state with fewer fish. This project will contribute to more sustainable management of coral reefs by identifying pathways that confer resilience, highlighting emerging vulnerabilities, and suggesting policy initiatives in areas such as integrated coastal zone management and sustainable development planning. An integrative social and natural science approach will be employed that addresses place-based questions about resilience, sustainability and adaptive capacity of coastal systems. A framework will be developed for addressing more complex questions about the Moorea social-ecological system, and this will provide a model for the integration of ecology and social science in other coastal systems. Research results will be disseminated broadly through stakeholder workshops, and graduate students will be engaged in all aspects of the work.

While the dynamics of state shifts are fundamental to understanding the resilience and long-term sustainability of coral reef social-ecological systems, the interplay between anthropogenic and ecological feedbacks is poorly understood in these systems. Systems with high population densities, widespread coastal development and intense resource exploitation typically show declines in the critical adaptive capacities that underpin resilience to local environmental variability. However, Moorea has maintained its resilience despite rapid development. This project will explore how the complex feedbacks in the Mo'orea coral reef social-ecological system maintain its capacity to withstand large-scale ecological disturbances. The study will involve interdisciplinary collaboration between social and natural scientists. Anthropological fieldwork focusing on the human dimensions of coral reef use, traditional governance, and indigenous ecological knowledge, will document how local communities perceive, respond to, and manage changes in ecosystem state. Ecological models will describe the dynamics of coral, algal and fish communities, including the feedbacks that make these communities susceptible to abrupt shifts in ecosystem state. These components will be integrated in a systems modeling framework that includes feedbacks both within and between the human and natural communities, quantitatively modeling how humans change their behavior as a function of ecosystem state and how the ecosystem is affected in turn by human activities. A key objective is to bridge the gap between data collected by social scientists and the dynamic ecosystem models developed by ecologists, as this is crucial to understanding the resilience and long-term sustainability of coastal social-ecological systems worldwide.

This project is supported under NSF's Coastal SEES (Science, Engineering and Education for Sustainability) program.

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Program Information

Coastal SEES (Science, Engineering and Education for Sustainability NSF-Wide Investment) (Coastal SEES)

Website: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504816

Coverage: US

Coastal SEES is focused on the sustainability of coastal systems. For the most recent solicitation, NSF defines coastal systems as the swath of land closely connected to the sea, including barrier islands, wetlands, mudflats, beaches, estuaries, cities, towns, recreational areas, and maritime facilities; the continental seas and shelves; and the overlying atmosphere.

Humans benefit from their use of coastal environments for enjoyment, dwelling, food, industry, and commerce, and benefit from the myriad of ecosystem services that coastal environments provide. However, human activities often result in physical, chemical, and ecological alterations that influence and interact with natural state and variability, over a range of spatial and temporal scales. A major challenge is to understand the dynamics of this coupled human-natural system in order to inform societal decisions about the uses of coastal systems, including for economic, aesthetic, recreational, research, and conservation purposes.

Scientific understanding is foundational and must include an understanding of reciprocal feedbacks between humans and the natural environment; how people and organizations interpret, assess, and act upon scientific and other evidence; and how they weigh these interpretations against other interests to influence governance and decision-making. Thus, coastal sustainability relies on broad and intimately interconnected areas of scholarship about natural and human processes. Coastal SEES projects will be expected to lead to generalizable theoretical advances in natural sciences and engineering while, at the same time, integrating key aspects of human processes required to address issues of coastal sustainability.

Detailed information about the SEES program is available from NSF (http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504707).

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Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-1325652
NSF Division of Ocean Sciences (NSF OCE)	OCE-1325554

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