

Update Report

Period: 2/1/2014 - 1/31/2015

Project: R/OLWD-1 - Scaling Up Cost-Efficient Community Engagement in Coastal Resource Management

STUDENTS SUPPORTED

Ma, Jennifer, jwma2325@gmail.com, University of Washington, SAFS, status: new, field of study: Conservation, advisor: Parrish, degree type: MS, degree date: 2015-12-01, degree completed this period: No

Student Project Title:

A Multi-variate Analysis of COASST Data.

Involvement with Sea Grant This Period:

grad student

Post-Graduation Plans: *none*

CONFERENCES / PRESENTATIONS

Why Science Matters and Why Everyone Should Be Involved. Alaska Forum on the Environment, Anchorage, AK (keynote speaker), public/profession presentation, 200 attendees, 2014-11-15

Making the People-Policy Connection: The COASST Model of Citizen Science. EPA Citizen Science Community of Practice Meeting (webinar presentation), public/profession presentation, 50 attendees, 2014-05-15

ADDITIONAL METRICS

P-12 Students Reached:	0	P-12 Educators Trained:	0
Participants in Informal Education Programs:	42	Volunteer Hours:	100
COASST volunteers participating in focus groups		Time for COASST participants to travel to, and attend, one of 5 focus group meetings.	
Acres of coastal habitat protected, enhanced or restored:	0	Resource Managers who use Ecosystem-Based Approaches to Management:	0
Annual Clean Marina Program - certifications:	0	HACCP - Number of people with new certifications:	0

ECONOMIC IMPACTS

No Economic Impacts Reported This Period

SEA GRANT PRODUCTS

No Sea Grant Products Reported This Period

HAZARD RESILIENCE IN COASTAL COMMUNITIES

No Communities Reported This Period

ADDITIONAL MEASURES

Number of stakeholders modifying practices: 0

Sustainable Coastal Development

of coastal communities: 0

PARTNERS

Partner Name: Oregon State University (OSU)

Partner Name: University of California, Davis (UCD)

IMPACTS AND ACCOMPLISHMENTS

Title: **West Coast Sea Grant research identifies factors that influence community engagement and retention of volunteers in citizen science projects**

Type: accomplishment

Description:

Relevance: Involvement in citizen science can deepen an individual's knowledge, awareness, and sense of place, as well as inspire behavioral change. Citizen science can also provide rigorous, cost-effective data collection for research, monitoring, and management needs. While recognition of its potential contribution to the scientific enterprise has garnered much attention for citizen science in recent years, factors that influence recruitment and retention of well-trained volunteers have not been clearly identified.

Response: The West Coast Sea Grant programs jointly funded research to quantitatively and qualitatively examine factors affecting three measurable aspects of successful citizen science: engagement, retention, and accuracy. Using COASST (Coastal Observation and Seabird Survey Team) as a "model" coastal citizen science project, the research team is conducting a detailed analysis to abstract fundamental features that can be translated and used by other existing or emerging coastal citizen science projects. Both a qualitative component (focus groups) and a quantitative component (multivariate analysis of existing data) were planned for the study.

Results: Focus groups were conducted at Whidbey Island and Ocean Shores, Washington, and Tillamook, Newport, and Charleston, Oregon. In addition, data fields, coding categories, and missing data were compiled for the multivariate analysis.

Recap:

Recap: West Coast regional research is identifying factors contributing to recruitment, retention, and scientific success of volunteers engaged in citizen science.

Comments:

Primary Focus Area: OLWD

Secondary Focus Area: HCE

Associated Goal: The public is ocean literate. (OLWD)

Partners:

Oregon State University (OSU)

University of California, Davis (UCD)
Related Partners: *none*

PUBLICATIONS

No Publications Reported This Period

OTHER DOCUMENTS

No Documents Reported This Period

LEVERAGED FUNDS

No Leveraged Funds Reported This Period

UPDATE NARRATIVE

Uploaded File: [Parrish_4912_update_na....4.pdf](#), 110 kb

Parrish 2014-15 Narrative
Scaling Up Cost-Efficient Community Engagement in Coastal Resource Management

This project is a cooperative effort including three PIs:

Parrish – UW

Rowe – OSU

Ballard – UC Davis

The objectives are to:

1. Determine how a successful citizen science program, specifically measured through engagement, retention, and accuracy, is influenced by four categories of variables present in any/all citizen science endeavors: individual-level participant demographics, organization-level factors, community-level contextual factors, and regional-level environmental factors.
2. Produce professional and in-practice products that can be used to develop or expand rigorous coastal citizen science programs, ultimately creating a network of rigorous citizen science programs linking coastal communities directly to institutions of higher education, research, and monitoring, and collecting vital information of the physical, biological, and human dimensions of the California Current Large Marine Ecosystem (CCLME).

During the reporting period:

1. The PIs (Parrish, Rowe, Ballard) met to design the Focus Group protocol, and submit necessary paperwork to all relevant Institution Review Boards (IRB) for human subjects approval, which was granted.
2. The COASST office (Erika Frost, Volunteer Coordinator) scheduled all Focus Groups (Table 1), and followed through with COASST participants to make sure that there was adequate attendance.

Table 1. List of Focus Groups and Linked Trainings

Date	Location	# of COASSTers	Facilitator	COASST Staff
7/26/14	Whidbey Island, WA	9	Heidi	Jane/Julia
9/27/14	Tillamook, OR	10	Shawn	Hillary/Julia
9/28/14	Newport, OR	3	Shawn	Hillary/Julia
10/4/14	Ocean Shores, WA	10	Shawn	Jane
11/15/14	Charleston, OR	10	Shawn	Erika

3. The COASST office (Erika Frost, Volunteer Coordinator) schedule all linked COASST training sessions, and followed through with COASST participants to make sure that there was adequate attendance.
4. COASST personnel (Parrish, Frost, Dolliver) conducted all linked training sessions and attended Focus Groups, opening and closing the event, and otherwise assisting the facilitator (Rowe, Ballard) as needed, and according to the Focus Group protocol.
5. COASST interns, supervised by COASST personnel, transcribed all Focus Group materials into excel spreadsheets for review and coding by the PIs.
6. Jennifer Ma, the graduate student supported on the project, worked with COASST personnel (Dolliver, Frost) to create a definitive database for the planned multi-variate analysis. Blank cells were filled in by COASST undergraduate interns working under the supervision of Ma. Additional community-level data not obtainable via central state or federal sources (e.g., number of higher education institutions within a particular distance from a COASST participant) were compiled manually by COASST undergraduate interns under the supervision of Dolliver. The current list of variables, including source, is listed in Table 2.

Table 2. Multivariate Analysis Variable Metadata

Category	Data Field Name	Temporal scale	Data Type	Spatial scale	Source
Environment	Weather station code		Alpha numeric code	Unique weather station	NOAA national climatic data center
Environment	Station name		Text	Unique weather station	NOAA national climatic data center
Environment	Elevation		Numeric	Unique weather station	NOAA national climatic data center
Environment	CLDD sum: Total cooling degree days	Monthly	Integer	Available stations	NOAA national climatic data center
Environment	DPNP avg: Average departure from normal monthly precip	Monthly	Integer	Available stations	NOAA national climatic data center
Environment	DPNT avg: Average departure from normal monthly temperature	Monthly	Integer	Available stations	NOAA national climatic data center
Environment	HTDD sum: Total heating degree days	Monthly	Integer	Available stations	NOAA national climatic data center
Environment	DT90 sum: Days w/ max temp greater than or equal to 90F	Monthly	Integer	Available stations	NOAA national climatic data center
Environment	DX32 sum: Days w/ max temp less than or equal to 32F	Monthly	Integer	Available stations	NOAA national climatic data center
Environment	DT00 sum: Days w/ min temp less than or equal to 0F	Monthly	Integer	Available stations	NOAA national climatic data center
Environment	DT32 sum: Days w/ min temp less than or equal to 32F	Monthly	Integer	Available stations	NOAA national climatic data center
Environment	DP01 sum: Days w/ greater than or equal to 0.1in of precip	Monthly	Integer	Available stations	NOAA national climatic data center
Environment	DP05 sum: Days w/ greater than or equal to 0.5in of precip	Monthly	Integer	Available stations	NOAA national climatic data center
Environment	DP10 sum: Days w/ greater than or equal to 1in of precip	Monthly	Integer	Available stations	NOAA national climatic data center
Environment	EMXP avg: Average extreme max daily precip	Monthly	Integer	Available stations	NOAA national climatic data center

Environment	MXSD avg: Average max snow depth	Monthly	Integer	Available stations	NOAA national climatic data center
Environment	DSNW sum: Days w/ snow depth greater than 1 in	Monthly	Integer	Available stations	NOAA national climatic data center
Environment	TPCP avg: Average total precipitation	Monthly	Integer	Available stations	NOAA national climatic data center
Environment	TSNW avg: Average total snow fall	Monthly	Integer	Available stations	NOAA national climatic data center
Environment	EMXT avg: Average extreme max daily temp	Monthly	Integer	Available stations	NOAA national climatic data center
Environment	EMNT avg: Average extreme min daily temp	Monthly	Integer	Available stations	NOAA national climatic data center
Environment	MMXT avg: Average monthly mean max temp	Monthly	Integer	Available stations	NOAA national climatic data center
Environment	MMNT avg: Average monthly mean min temp	Monthly	Integer	Available stations	NOAA national climatic data center
Environment	MNTM avg: Average Monthly mean temp	Monthly	Integer	Available stations	NOAA national climatic data center
Environment	TWND sum: Total wind movement over evaporation pan	Monthly	Integer	Available stations	NOAA national climatic data center
Environment	Name	Once	Text	Per beach	COASST database
Environment	Code	Once	Text	Per beach	COASST database
Environment	ID	Once	Integer	Per beach	COASST database
Environment	Weather station code	Once	Alpha-numeric	Per beach	COASST database
Environment	City	Once	Text	Per beach	COASST database
Environment	Region	Once	Text	Per beach	COASST database
Environment	State	Once	Text	Per beach	COASST database
Environment	Latitude	Once	Integer	Per beach	COASST database
Environment	Longitude	Once	Integer	Per beach	COASST database
Environment	Geomorphy	Once	Text	Per beach	COASST database
Environment	Dogs allowed	Once	Text	Per beach	COASST database
Environment	Substrate	Once	Text	Per beach	COASST database
Environment	Ownership	Once	Text	Per beach	COASST database
Environment	Orientation	Once	Text	Per beach	COASST database
Environment	Monitored	Once	Text	Per beach	COASST database
Environment	Length	Once	Integer	Per beach	COASST database
Environment	Access	Once	Text	Per beach	COASST database
Environment	Vehicles allowed	Once	Text	Per beach	COASST database
Environment	Width	Once	Text	Per beach	COASST database
Community	Total population	Decadal	Integer	Zip-code	Social Explorer, Census 2010
Community	Percent male in population	Decadal	Percent	Zip-code	Social Explorer, Census 2010
Community	Percent female in population	Decadal	Percent	Zip-code	Social Explorer, Census 2010
Community	Percent of white in population	Decadal	Percent	Zip-code	Social Explorer, Census 2010

Community	Percent of black or African American	Decadal	Percent	Zip-code	Social Explorer, Census 2010
Community	Percent of American Indian and Alaska Native	Decadal	Percent	Zip-code	Social Explorer, Census 2010
Community	Percent of Asian	Decadal	Percent	Zip-code	Social Explorer, Census 2010
Community	Percent of Native Hawaiian and other Pacific Islander	Decadal	Percent	Zip-code	Social Explorer, Census 2010
Community	Percent of other race	Decadal	Percent	Zip-code	Social Explorer, Census 2010
Community	Percent of two or more races	Decadal	Percent	Zip-code	Social Explorer, Census 2010
Community	Percent over 60 years of age	Decadal	Percent	Zip-code	Social Explorer, Census 2010
Community	Average household size	Decadal	Integer	Zip-code	Social Explorer, Census 2010
Community	Percent of family households	Decadal	Percent	Zip-code	Social Explorer, Census 2010
Community	Percent of households by presence of people 60+	Decadal	Percent	Zip-code	Social Explorer, Census 2010
Community	Total number of families	Decadal	Integer	Zip-code	Social Explorer, Census 2010
Community	Average family size	Decadal	Integer	Zip-code	Social Explorer, Census 2010
Community	Total number of housing units	Decadal	Integer	Zip-code	Social Explorer, Census 2010
Community	Percent of housing units occupied	Decadal	Percent	Zip-code	Social Explorer, Census 2010
Community	Percent of owned free and clear housing units	Decadal	Percent	Zip-code	Social Explorer, Census 2010
Community	Average household size of owner occupied housing units	Decadal	Integer	Zip-code	Social Explorer, Census 2010
Community	Average household size of renter occupied housing unit	Decadal	Integer	Zip-code	Social Explorer, Census 2010
Community	Percent of population educational attainment: less Than High School	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of population educational attainment: High School Graduate (includes equivalency)	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of population educational attainment: Some college	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of population educational attainment: Bachelor's degree	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of population educational attainment: Master's degree	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of population educational attainment: Professional school degree	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of population educational attainment: Doctorate degree	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of population 3+ yrs Enrolled In School	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey

Community	Percent of population 3+ yrs not Enrolled In School	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of school dropouts in population of 16-19 yrs	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of population 16+ in labor force, Employed	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of population 16+ in labor force, Unemployed	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of population 16+ not in labor force	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of households with income less than \$10,000	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of households with income \$10,000 to \$14,999	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of households with income \$15,000 to \$19,999	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of households with income \$20,000 to \$24,999	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of households with income \$25,000 to \$29,999	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of households with income \$30,000 to \$34,999	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of households with income \$35,000 to \$39,999	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of households with income \$40,000 to \$44,999	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of households with income \$45,000 to \$49,999	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of households with income \$50,000 to \$59,999	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of households with income \$60,000 to \$74,999	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey

Community	Percent of households with income \$75,000 to \$99,999	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of households with income \$100,000 to \$124,999	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of households with income \$125,000 to \$149,999	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of households with income \$150,000 to \$199,999	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of households with income \$200,000 or More	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Average household income (In 2012 Inflation Adjusted Dollars)	5-year survey	Integer	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of housing units with a mortgage, home equity loan, or similar debts	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of housing units without a mortgage	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of individual income in 2012 below poverty level	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of individual income in 2012 at or above poverty level	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of children under 18 Living in Poverty	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of children under 18 At or Above Poverty Level	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of population without Health Insurance Coverage	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of population with Health Insurance Coverage	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of insured people w/public health cover	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
Community	Percent of insured people w/private health cover	5-year survey	Percent	Zip-code	Social Explorer, 2008-2012 American Community Survey
COASST	ID	Once	Integer	per volunteer	COASST dataset

COASST	First, Middle, Last name, Full name	Once	Text	per volunteer	COASST dataset
COASST	City	Once	Text	per volunteer	COASST dataset
COASST	Zip	Once	Integer	per volunteer	COASST dataset
COASST	State	Once	Text	per volunteer	COASST dataset
COASST	Gender	Once	Text	per volunteer	COASST dataset
COASST	Is active?	Once	Text	per volunteer	COASST dataset
COASST	Current age	Annual	Integer	per volunteer	COASST dataset
COASST	Trained age	Once	Integer	per volunteer	COASST dataset
COASST	Trained date	Once	Date	per volunteer	COASST dataset
COASST	Inactive date	Once	Date	per volunteer	COASST dataset
COASST	Substitute?	Once	Text	per volunteer	COASST dataset
COASST	Withdrawn	Once	Text	per volunteer	COASST dataset
COASST	Withdrawn date	Once	Date	per volunteer	COASST dataset
COASST	Withdrawn category 1	Once	Text	per volunteer	COASST dataset
COASST	Withdrawn category 2	Once	Text	per volunteer	COASST dataset
COASST	Occupation Categories 1	Once	Text	per volunteer	COASST dataset
COASST	Occupation categories 2	Once	Text	per volunteer	COASST dataset
COASST	Employer	Once	Text	per volunteer	COASST dataset
COASST	Organization 1	Once	Text	per volunteer	COASST dataset
COASST	Organization 2	Once	Text	per volunteer	COASST dataset
COASST	Find Us Category	Once	Text	per volunteer	COASST dataset
COASST	Involvement 1	Once	Text	per volunteer	COASST dataset
COASST	Involvement 2	Once	Text	per volunteer	COASST dataset
COASST	Birding Experience	Once	Text	per volunteer	COASST dataset
COASST	Birds, All Years	Monthly	Integer	per volunteer	COASST dataset
COASST	Finds, All Years	Monthly	Integer	per volunteer	COASST dataset
COASST	Families, All Years	Monthly	Integer	per volunteer	COASST dataset
COASST	Species, All Years	Monthly	Integer	per volunteer	COASST dataset
COASST	Surveys, All Years	Monthly	Integer	per volunteer	COASST dataset
COASST	Survey Minutes, All Years	Monthly	Integer	per volunteer	COASST dataset
COASST	First Survey Date	Once	Date	per volunteer	COASST dataset
COASST	Last Survey Date	Once	Date	per volunteer	COASST dataset
COASST	Last Surveyed Beach	Once	Text	per volunteer	COASST dataset

COASST	Region	Once	Text	per volunteer	COASST dataset
COASST	HAZWOPER Trained	Once	Text	per volunteer	COASST dataset
COASST	Provided positive feedback	Once	Text	per volunteer	COASST dataset
COASST	Unique Regions surveyed	Once	Integer	per volunteer	COASST dataset
COASST	Unique Beaches surveyed	Once	Integer	per volunteer	COASST dataset
COASST	avg_travel_time	Monthly	Numerical	per volunteer	COASST dataset
COASST	total_travel_time	Monthly	Numerical	per volunteer	COASST dataset
COASST	avg_group_size	Monthly	Numerical	per volunteer	COASST dataset