

Update Report

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

Project: R/HCE-2 - [full] - Evaluating Puget Sound Marine Protected Areas to Increase Social Ecological Resilience

STUDENTS SUPPORTED

Best, Peter, peternbest@msn.com, University of Washington, SMEA, status: new, field of study: Marine Affairs, advisor: Christie, degree type: MA, degree date: 2015-12-01, degree completed this period: No

Student Project Title:

TBD

Involvement with Sea Grant This Period:

Research assistant

Post-Graduation Plans: *none*

Lyles, Jillian, lylesjillian@gmail.com, University of Washington, SMEA, status: new, field of study: Marine Affairs, advisor: Christie, degree type: MA, degree date: 2016-06-01, degree completed this period: No

Student Project Title:

TBD

Involvement with Sea Grant This Period:

Research Assistant

Post-Graduation Plans: *none*

Masters, Kyle, mastersjk@gmail.com, University of Washington, SMEA, status: new, field of study: Marine Affairs, advisor: Christie, degree type: MA, degree date: 2015-03-01, degree completed this period: No

Student Project Title:

Policy Priorities in Puget Sound: An Analysis of MPA Implementation

Involvement with Sea Grant This Period:

Research assistant

Post-Graduation Plans:

Unsure

Naylor-Leyland, Nicholas, nico13@u.washington.edu, University of Washington, SMEA, status: new, field of study: Marine Affairs, advisor: Allison, degree type: MA, degree date: 2016-06-01, degree completed this period: No

Student Project Title:

TBD

Involvement with Sea Grant This Period:

Research assistant

Post-Graduation Plans: *none*

CONFERENCES / PRESENTATIONS

Lyles, J.M., Best, P., Graziano, K., Luna, M., Stevenson, T., Pollnac, R.B., Warren, B., Christie, P. 2014. A SOCIAL AND ECOLOGICAL EXAMINATION OF PUGET SOUND MARINE PROTECTED AREAS: DO THEY WORK? Western Society of Naturalists. Tacoma, WA., public/profession presentation, 40 attendees, 2014-11-13

Stevenson, T, P. Christie, D Fluhary, B Warren, RP Pollnac. 2014. Evaluating Puget Sound Marine Protected Areas to Improve MPA Policy and Implementation. Salish Sea Ecosystem Conference. Seattle, WA., public/profession presentation, 20 attendees, 2014-04-30

ADDITIONAL METRICS

P-12 Students Reached:

P-12 Educators Trained:

Participants in Informal Education Programs:

Volunteer Hours:

Acres of coastal habitat protected, enhanced or restored:

Resource Managers who use Ecosystem-Based Approaches to Management:

Annual Clean Marina Program - certifications:

HACCP - Number of people with new certifications:

ECONOMIC IMPACTS

Description	Patents	Market Impacts (\$)	Non-Market Impacts (\$)	Businesses Created	Businesses Retained	Jobs Created	Jobs Retained
None	0	0	0	0	0	0	0

SEA GRANT PRODUCTS

Description	Developed?	Used?	ELWD?	Number of Managers	Names of Managers
Smart phone based survey instrument to collect information on perceptions of Puget Sound condition and marine	Yes	Yes	No	0	

protected
area
effectiveness

HAZARD RESILIENCE IN COASTAL COMMUNITIES

Name of coastal
community

County

Number of resiliency
trainings / technical
assistance services
provided
0

Was community
hazard
resiliency
improved (e.g.,
via changes in
zoning
ordinances) ?
No

ADDITIONAL MEASURES

Number of stakeholders modifying
practices:

Sustainable Coastal Development

of coastal communities:

PARTNERS

Partner Name: Tulalip Tribes

Partner Name: Washington State Department of Fish and Wildlife

Partner Name: Washington State Department of Natural Resources

IMPACTS AND ACCOMPLISHMENTS

Title: **Washington Sea Grant research surveys public and policymaker views of Puget Sound's marine protected areas**

Type: accomplishment

Description:

Relevance: Marine protected areas (MPAs) offer refuge that can support recovery of depleted marine species, conservation of essential habitats, and important cultural and recreational opportunities. A 2009 inventory catalogued 127 diverse Washington MPAs and they are cited as an important element of recovery planning for Puget Sound's three species of threatened or endangered rockfish. However, the success of current MPAs has not been systematically evaluated and their conservation value appears mixed. Public attitudes toward, support for, and knowledge of MPAs and marine habitats are largely unknown.

Response: WSG-supported researchers conducted structured social surveys with 1,532 key informants, resource users, and community members at 13 MPA and three reference sites along Puget Sound, Hood Canal, and in the San Juan Islands, plus 34 semi-structured qualitative interviews focused on policymakers.

Results: Respondents commonly thought Puget Sound was in average to good condition and conditions were better near MPAs, but that eelgrass and shellfish beds were in decline. Interviewees suggested that lack of leadership limited successful MPA implementation and some blamed minimal involvement of tribal co-managers. Agency complaints included inadequate funding, staff, monitoring, and definition of goals. The bottom-up process for selecting MPA sites generally was considered to offer stakeholders an appropriate forum for participation. Findings suggested several avenues to explore for improving the MPA selection and management process and strengthening their role in Puget Sound restoration.

Recap:

Recap: Washington Sea Grant-supported research documents perceptions of the general public, resource users, and policymakers about the capacity of marine protected areas to improve Puget Sound conditions.

Comments:

Primary Focus Area: HCE

Secondary Focus Area: RCE

Associated Goals: Ocean and coastal resources are managed using ecosystem-based approaches. (HCE)

Coastal communities engage in comprehensive planning and sustainable development. (RCE)

Partners:

Tulalip Tribes

Washington State Department of Fish and Wildlife

Washington State Department of Natural Resources

Related Partners: WA Department of Fish and Wildlife (Jennifer Lanksbury),

Washington Department of Natural Resources

PUBLICATIONS

Title: **Evaluating Puget Sound Marine Protected Areas to Increase Social Ecological Resilience**

Type: Technical Reports Publication Year: 2014

Uploaded File: [MidYear_Report_Christi....4.pdf](#)

URL: *none*

Abstract:

MPA policy implementation in Puget Sound appears to be a mixture of successes and failures. Informants indicated repeatedly that there was a lack of leadership for the policy at the highest managerial and political levels that limited policy implementation. Most informants thought that serious challenges afflicted MPA management in Puget Sound: managers asserted they required more staff; monitoring for effectiveness was lacking; MPA goal formulation should be improved; and the involvement of tribal co-managers was minimal. These variables coincide neatly with Sabatier and Mazmanian's (1980) framework for policy implementation and lead to the conclusion that the effectiveness of Puget Sound MPAs can be improved. Many scientists reported that they were optimistic that MPAs can serve groundfish management well by creating refugia for depressed fish stocks. Other informants thought that the

bottom-up site selection process, though needing to be guided by scientific information, generally offered stakeholders an appropriate forum for participating in resource management.

Citation:

Christie P, Fluharty D, Pollnac R, Stevenson T, Warren B, Best P, Masters K (2014) Evaluating Puget Sound marine protected areas to increase social ecological resilience. Report to Puget Sound Partnership, 17 p.

Copyright Restrictions + Other Notes:

Journal Title: *none*

OTHER DOCUMENTS

No Documents Reported This Period

LEVERAGED FUNDS

No Leveraged Funds Reported This Period

UPDATE NARRATIVE

Uploaded File: [Christie_3081_update_n....9.pdf](#), 1347 kb

Initial exploratory interviews were performed over the phone with individuals who were actively engaged in MPA science, policy and management in Puget Sound. These interviews were used to inform the development of our more formal survey instruments. We also collated relevant literature pertaining to MPAs in Puget Sound and mined these documents for themes and topics to help frame our survey instruments and interview guidelines as well as identify initial field sites.

We used structured interviews to survey community members, resource users, key informants, and policy makers. Community members were intercepted along the shoreline, at their homes, or grocery stores within the vicinity of a surveyed MPA or reference site. Resource users were self identified as fishers or recreational SCUBA divers and intercepted along the shoreline, boat launches, shoreline or other locations within the vicinity of a surveyed MPA or reference site. Key informants were people who were more engaged on issues pertaining to a given MPA (i.e., formation, implementation or management) and had significant historical knowledge about the areas. Policy makers were those who directly influenced policy or had significant influence on shaping policies on MPA implementation and management. These people often worked for a state or federal agencies, non-governmental organizations, or academic institutions. The structured interviews were conducted in-person using Open Data Kit (ODK) digital data collection software on Android-based cell phones. We used a modified simple random sampling approach commonly used in field-based social sciences to sample community and resource user informants, while we used purposive sampling to sample key informants.

In addition to structured interviews, we conducted semi-structured, qualitative interviews to complement the quantitative surveys to access the detailed nuances associated with perceptions on Puget Sound MPAs. These interviews were only performed on policy maker informants to understand issues such as collaboration, management, enforcement, and other relevant thematic topics. We used purposive sampling to sample policy makers. The interviews were transcribed, uploaded to Atlas.ti software, coded based on themes, and analyzed. These

interviews were conducted in-person whenever possible, and over the phone when the informant was unreachable for an in-person.

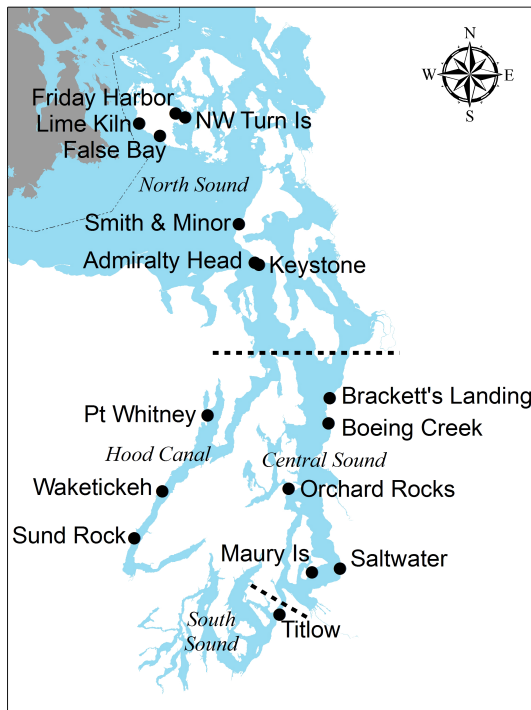


Figure 1: MPA and reference site locations, and four sub-basins: 1) Hood Canal, 2) Central Puget Sound, 3) North Puget Sound, and 4) South Puget Sound.

Site Selection

The sites where we conducted the community, resource user, and key informant interviews were distributed across the Puget Sound (Figure 1). These sites were selected because they represented different management approaches, use patterns, and community involvement, albeit we focused on sites that were managed by WDFW. Some locations were specifically selected to complement WDFW fish monitoring efforts.

Distinct survey instruments were developed for each informant type (i.e., community members, resource users, key

informants, and policy makers). With the exception of the policy surveys, the surveys were utilized at the following MPA locations.

MPA Name	Date Est.	Area (ha.)	Dive Usage	Management (Agency)
Admiralty Head	2002	35.77	Low	Preservation Area (WDFW/State Parks)
Brackett's Landing	1970	23.81	Very High	Conservation Area (WDFW/City of Edmonds)
False Bay	1990	129.60	None, intertidal	Preservation Area (WDFW/UW)
Friday Harbor	1990	172.21	Medium-research divers	Preservation Area (WDFW/UW)
Keystone	2002	4.61	High	Conservation Area (WDFW/State Parks)
Lime Kiln	1997	22.06	Low	Voluntary No-Take (San Juan County/State Parks)
Maury Island	2000	2.02	Low	Aquatic Reserve (WDNR)
Orchard Rocks	1998	41.93	Low	Conservation Area (WDFW)
Saltwater State Park	2009	4.30	High	Preservation Area (WDFW/State Parks)
Smith & Minor	2010	14.57	Low	Aquatic Reserve (WDNR)
Sund Rock	1994	28.81	Very High	Conservation Area (WDFW/Private)
Titlow Beach	1994	16.86	High	Preservation Area (WDFW/City of Tacoma)
Waketickkeh	2000	59.22	Medium	Preservation Area (WDFW/Private)

In addition to MPA sites, we employed community and resource user surveys at three reference sites without MPA designation for comparative purposes. The sites we used as reference locations included: 1) Turn Island near Friday Harbor, San Juan Island; 2) Pt. Whitney in Hood Canal; and 3) Richmond Beach State Park near Brackett's Landing. Turn Island was selected because WDFW has been monitoring biological variables in that region for a number of years and we remain confident we will eventually gain access to those data for inclusion into our final analysis. Pt Whitney was selected because the region experience heavy use by tribal and other fishers as well as SCUBA divers, and the area has also been slated for future conservation as an Aquatic Reserve under DNR's management authority. Last, Richmond Beach State Park was selected because it neighbors Brackett's Landing MPA, experiences heavy use, and neighbors WDFW's Boeing Creek biological monitoring site.

We augmented our community surveys by interviewing informants at nearby grocery stores in Hoodspoint and near Pt. Whitney. Augmenting our community surveys in this manner was pursued because some locations required users to pay an access fee and largely attracted SCUBA divers wanting to use the resource, which limited the number of community and resource user informants.

We completed a total of 1,532 community, resource user and key informant surveys and an additional 28 policy makers surveys and 34 semi-structured, qualitative interviews.

New Directions or Challenges:

The project is proceeding as planned. We are currently working to gain approval to interview tribal members. Securing approval is complex and time consuming. We plan to co-host a scenario workshop with Tulalip Tribe in 2015.