

Update Report

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

Project: R/SFA-4 - Toward Sustainable Geoduck Aquaculture Management in Puget Sound: Assessing Policy and Social Dimensions

STUDENTS SUPPORTED

Bovbjerg, Anna, abovbj12@student.aau.dk, Aalborg University, Denmark, Urban, Energy and Environmental Planning, status: new, field of study: Engineering, advisor: BA, degree type: BEng, degree date: 2015-06-01, degree completed this period: No
Student Project Title:

Geoduck Aquaculture in South Puget Sound: Understanding Social and Policy Dimensions

Involvement with Sea Grant This Period:

Env. Mgmt Keystone Team member, Autumn quarter 2015

Post-Graduation Plans: *none*

Dooley, Olivia, opdooley@gmail.com, Univ of WA, Evans School of Public Affairs, status: new, field of study: Public Administration, advisor: NA, degree type: MA, degree date: 2015-06-01, degree completed this period: No
Student Project Title: *none*

Involvement with Sea Grant This Period:

Reserach Assistant. Background research on geoduck aquaculture, preparation of interview materials for UW Human Subjects review

Post-Graduation Plans: *none*

Hall, Lucas, lhall@whalls.com, Univ of WA, Evans School of Public Affairs, status: new, field of study: Public Administration, advisor: NA, degree type: MA, degree date: 2015-06-01, degree completed this period: No
Student Project Title:

Geoduck Aquaculture in South Puget Sound: Understanding Social and Policy Dimensions

Involvement with Sea Grant This Period:

Env Mgmt Keystone Project Team member

Post-Graduation Plans: *none*

Hamerly, Jarrod, jarrodhamerly@yahoo.com, Univ of WA, Evans School of Public Affairs, status: new, field of study: Public Administration, advisor: NA, degree type: MA, degree date: 2015-06-01, degree completed this period: No
Student Project Title:

Geoduck Aquaculture in South Puget Sound: Understanding Social and Policy Dimensions

Involvement with Sea Grant This Period:

Env Mgmt Keystone Project Team member

Post-Graduation Plans: *none*

Wright, C. Wally, wrighc2@uw.edu, Univ of WA, Evans School of Public Affairs, status: new, field of study: Public Administration, advisor: NA, degree type: MA, degree date: 2015-06-01, degree completed this period: No
Student Project Title:

Geoduck Aquaculture in South Puget Sound: Understanding Social and Policy

Dimensions

Involvement with Sea Grant This Period:

Env Mgmt Keystone Team member

Post-Graduation Plans: *none*

CONFERENCES / PRESENTATIONS

McDonald, P.S., Ryan, C.M. (2014) Pacific Coast Shellfish Growers Association Annual Conference. Vancouver, WA, public/profession presentation, 250 attendees, 2014-09-21

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

No Economic Impacts Reported This Period

SEA GRANT PRODUCTS

Description	Developed?	Used?	ELWD?	Number of Managers	Names of Managers
Database of geoduck-related shoreline management process appeals in Puget Sound.	Yes	No	No	0	
A National Socio-environmental Synthesis Center (SESYNC) case study for use in college and university courses - Using System Maps to Analyze Complex Social-Environmental	Yes	Yes	Yes	0	

Issues: A Case Study of Geoduck Aquaculture in Puget Sound.

Situation assessment characterizing stakeholder perceptions of geoduck issues in South Puget Sound.	Yes	No	No	0
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HAZARD RESILIENCE IN COASTAL COMMUNITIES

No Communities Reported This Period

ADDITIONAL MEASURES

Number of stakeholders modifying practices:

Sustainable Coastal Development

of coastal communities:

PARTNERS

Partner Name: NOAA Fisheries

Partner Name: Washington State Department of Ecology

IMPACTS AND ACCOMPLISHMENTS

Title: **Washington Sea Grant research assesses stakeholder challenges and opposition to geoduck aquaculture in South Puget Sound**

Type: accomplishment

Description:

Relevance: Geoduck clams, grown commercially in Puget Sound since 1996, have become a mainstay of Washington aquaculture, producing revenues of about \$22 million dollars annually. State and private tidelands offer space for expansion and geoduck prices are much higher than for other shellfish products. However, a complex permitting process, limited scientific information to guide decision-making, and vocal public opposition complicate prospects for geoduck aquaculture in the state.

Response: Washington Sea Grant-supported researchers are using two strategies to more effectively assess and address controversies surrounding geoduck aquaculture along South Puget Sound. The first strategy is a situation assessment characterizing stakeholder perceptions, including those of state, federal, and tribal resource managers, geoduck growers, and homeowners. The second is a policy analysis of both challenges to issuing permits for geoduck farms and subsequent hearing board

decisions.

Results: Preliminary results from the situation assessment showed a high level of conflict, suggesting that the time is not right for beginning a collaborative process. Preliminary results from the policy analysis identified common aesthetic, recreational, ecological, economic, and land-use issues raised in permit appeals and hearing board decisions. Researchers worked with a National Socio-Environmental Synthesis Center team to develop a teaching case study on geoduck aquaculture, available on the SESYNC website, for use in college and university courses.

Recap:

Recap: Washington Sea Grant-supported researchers assess stakeholder perceptions of geoduck aquaculture in South Puget Sound—revealing a level of conflict unsuitable for a collaborative process—analyzed challenges to geoduck-growing permits, and developed a case study for use in college-level courses.

Comments:

Primary Focus Area: SFA

Secondary Focus Area: RCE, OLWD

Associated Goals: Aquaculture operations and shellfish harvests are safe, environmentally sustainable, and support economically prosperous businesses. (SFA)

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

The future workforce is skilled in disciplines critical to coastal and ocean economies and ecosystem health. (OLWD)

Partners:

NOAA Fisheries

Washington State Department of Ecology

Related Partners: *none*

PUBLICATIONS

Title: **Geoduck Aquaculture in South Puget Sound: Understanding the Social and Policy Dimensions**

Type: Paper, Abstract, or Power Point (not peer-reviewed; see RR for peer-reviewed papers) presented at a conference, symposia, workho Publication Year: 2015

Uploaded File: *none*

URL: *none*

Abstract:

Geoduck aquaculture, the commercial farming of geoducks, is an expanding industry in Washington State. Research addressing the social and policy dimensions of aquaculture is required as the situation surrounding aquaculture involves a wide variety of stakeholders with varying positions and concerns, as well as a complex permitting process for the approval of commercial operations.. Understanding the social and policy dimensions of aquaculture will allow concerned stakeholders, policy-makers, citizens, and the legislature to continue to have a voice in the future of industry and the environment on Washington shorelines.

As a keystone research project conducted by graduate students in the Environmental

Management Certificate Program at the University of Washington, this project attempts to provide an improved understanding of the values, beliefs, and viewpoints of the stakeholders involved. The project goals are:

Conduct a partial situation assessment with stakeholder interviews to identify the common themes and opinions regarding geoduck aquaculture in the South Puget Sound.

Analyze the policy process through court hearings relevant to geoduck aquaculture and identify common themes and issues.

Citation:

Hall, L., Hamerly, J., Wright, C.W. 2015. Geoduck Aquaculture in South Puget Sound: Understanding the Social and Policy Dimensions. University of Washington Environmental Management Keystone Project Report.

Copyright Restrictions + Other Notes:

Journal Title: *none*

Title: Using System Maps to Analyze Complex Social-Environmental Issues: A Case Study of Geoduck Aquaculture in the Puget Sound.

Type: Educational materials Publication Year: 2014

Uploaded File: *none*

URL: *none*

Abstract:

This case provides a framework and tools for analyzing and understanding complex socio-environmental systems, using geoduck aquaculture in the Pacific Northwest as an example system. After completing this case, students will be able to use the socio-environmental system framework and apply it to other environmental issues.

Geoduck (giant clam, *Panopea generosa*) aquaculture is a complex issue in the Puget Sound. Specific concerns have centered on aspects of aquaculture that may disturb ecological communities, habitats, and ecosystem processes. The issue is complicated by a complex permitting process, limited scientific information to guide decision making, and vocal public opposition to certain aspects of geoduck farming. As geoduck aquaculture is local to the Pacific Northwest and parts of the western coast of California, a more localized example may be more appropriate for courses in other parts of the country, but many of the activities would be appropriate across most contexts.

Citation:

Mulvaney, K., Pulver, S., Ryan, C. and Weng, Y. 2014. Using System Maps to Analyze Complex Social-Environmental Issues: A Case Study of Geoduck Aquaculture in the Puget Sound. SESYNC. available: www.sesync.org

Copyright Restrictions + Other Notes:

Journal Title: *none*

OTHER DOCUMENTS

No Documents Reported This Period

LEVERAGED FUNDS

Type: influenced Period: 2014-07-15: : 2014-07-18Amount: \$2000

Purpose:

Travel to SESYNC Short Course: Teaching about Socio-Environmental Synthesis with the Case Studies Method for development of geoduck aquaculture case study

Source: National Socio-environmental Synthesis Center, University of Maryland

UPDATE NARRATIVE

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Narrative

The project had two primary objectives:

- 1) To conduct a Situation Assessment. A situation assessment is defined as an impartial analysis that helps prepare the path for a conflict-resolution or agreement-seeking process. To date, the Keystone Team (Hall, Wright, Hamerly) has completed interviews and analysis of stakeholder perspectives for a situation assessment of the geoduck aquaculture issue in South Puget Sound. Pre-work from the RA (Dooley) facilitated background information and Human Subjects approval process. We plan to augment this situation assessment in the next reporting period with a more comprehensive literature review on related resource management conflicts.
- 2) To conduct a policy analysis. We proposed collecting all relevant and available policy documents, guidelines, and other supporting materials related to geoduck aquaculture management in Washington State. To date the Keystone Team (Hall, Wright, Hamerly) has analyzed state Hearings Board level policy documents related to geoduck permit appeals and their resolution. We plan to augment this policy analysis in the next reporting period with additional policy document review, if documents are available.
- 3) The development of the teaching case related to Geoduck aquaculture built on the research that RA Olivia Dooley conducted in the first quarter of the project. Clare Ryan attended the SESYNC workshop and suggested the development of a teaching case based on the geoduck aquaculture issue. This case is now available online (www.sesync.org) for any teachers that want to access it and use it.
- 4) We plan to address in the next reporting period discussion of “best available science” as it relates to geoduck aquaculture and how the concept plays out in permit and appeals processes.