

RESEARCH/PD ANNUAL REPORT - PROGRESS REPORT

2015 annual report - progress

Clare Ryan

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

Submitted On: 04/10/2016 04:36:05 PM

METRICS & MEASURES

Metric/Measure	Value	Note
Acres of coastal habitat	0	
Fishermen and seafood industry personnel	0	
Communities - economic and environmental development	0	
Stakeholders - sustainable approaches	0	
Informal education programs	0	
Stakeholders who receive information	300	estimated audience for presentations at conferences and symposia
Volunteer hours	0	
P-12 students reached	0	
P-12 educators	0	

REQUESTED INFORMATION

Publications

Digging Deep: Managing Social and Policy Dimensions of Geoduck Aquaculture Conflict in Puget Sound Washington

Publication Type: Peer-reviewed: Journals (incl. articles), Books, Proceedings, and Other Documents

Publication Year: in review

Publication Authors:

Publisher Info: in review at Coastal Management

Notes:

Related URLs:

Keywords:

Publication URLs:

Abstract:

Citation: in review

Citation for Coverpage:

SG can post PDF online?:

Uploaded File:

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

Publication Type: Non-peer-reviewed: Complete Issues of Journals, Periodicals; Magazines,

Miscellaneous Reports, Papers, Special Collections

Publication Year: 2015

Publication Authors:

Publisher Info:

Notes: Environmental Management Keystone Team Project Final Report

Related URLs:

Keywords:

Publication URLs:

Abstract:

Citation: Geoduck Aquaculture in South Puget Sound: Understanding the Social and Policy Dimensions. March 2015. Hall, L., Hamerly, J., Wright, C.W.

Citation for Coverage:

SG can post PDF online?:

Uploaded File: [GeoduckAqua_UWKeystone.pdf](#)

Students Supported

Lucas Hall (Continuing Student)

lhall@whalls.com

University of Washington, Evans School of Public Policy and Governance

Field of Study: Public Affairs

Advisor:

Degree Type: Other Professional

Degree Year: 2015

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

Involvement With Sea Grant This Period (capstone, fellow, intern, etc.): Environmental Management Keystone Project team member

Post-Graduation Plans (employer, grad school, etc.): job with Long Live the Kings

Was this thesis/dissertation supported by Sea Grant?: Yes

Thesis / Dissertation:

New or Continuing?: continuing

Degree awarded this reporting period?: Yes

Financially supported?: Yes

Christopher Wally Wright (Continuing Student)

wrighc2@uw.edu

University of Washington, Evans School of Public Policy and Governance

Field of Study: Public Affairs

Advisor:

Degree Type: Other Professional

Degree Year: 2015

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

Involvement With Sea Grant This Period (capstone, fellow, intern, etc.): Environmental Management Keystone Project team member

Post-Graduation Plans (employer, grad school, etc.):

Was this thesis/dissertation supported by Sea Grant?: Yes

Thesis / Dissertation:

New or Continuing?: continuing

Degree awarded this reporting period?: Yes

Financially supported?: Yes

Jarrold Hamerly (Continuing Student)

jarrodhamerly@yahoo.com

University of Washington, Evans School of Public Policy and Governance

Field of Study: Public Affairs

Advisor:

Degree Type: Other Professional

Degree Year: 2015

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

Involvement With Sea Grant This Period (capstone, fellow, intern, etc.): Environmental Management Keystone Project team member

Post-Graduation Plans (employer, grad school, etc.):

Was this thesis/dissertation supported by Sea Grant?: Yes

Thesis / Dissertation:

New or Continuing?: continuing

Degree awarded this reporting period?: Yes

Financially supported?: Yes

Daniel Feinberg (New Student)

dsf6@uw.edu

University of Washington, Environmental and Forest Sciences

Field of Study: Environmental policy

Advisor: Clare Ryan

Degree Type: PhD

Degree Year:

Student Project Title:

Involvement With Sea Grant This Period (capstone, fellow, intern, etc.): Research Assistant for follow-up analysis and writing on Geoduck Aquaculture Keystone report. Assist in development of manuscript for peer reviewed journal article.

Post-Graduation Plans (employer, grad school, etc.):

Was this thesis/dissertation supported by Sea Grant?: No

Thesis / Dissertation:

New or Continuing?: New

Degree awarded this reporting period?: No

Financially supported?: Yes

Narratives

Geoduck Aquaculture

Uploaded File: [Narrative_2016.docx](#)

Partners This Period

Washington State Department of Ecology

Types: Government

Scale: STATE

Notes: Perry Lund

Office of Aquaculture, NOAA Fisheries

Types: Government

Scale: FEDERAL or NATIONAL

Notes: Laura Hoberecht

STANDARD QUESTIONS

Impacts and Accomplishments

(1)

Type	accomplishment
Title	Washington Sea Grant creates innovative model to support graduate student training while evaluating perceptions of South Puget Sound geoduck aquaculture
Relevance	Academic curricula in university environmental studies programs often emphasize experiential learning that allows students to apply their skills in real-world situations. One example is the University of Washington's environmental management certificate, requiring students to complete Keystone Projects with community "clients" that address contemporary problems in environmental management.
Response	Washington Sea Grant-supported research used the Keystone Project to engage students in exploring social and policy dimensions of commercial geoduck culture operations. With federal and state managers as clients, a four-member team examined public perceptions, conducting a situation assessment that provided a comprehensive overview of the current climate surrounding geoduck aquaculture in South Puget Sound. The team conducted interviews with stakeholders, including state, federal and tribal

	resource managers, geoduck growers and homeowners. It also analyzed recent state decisions on aquaculture permits and reviewed applicable policy literature.
Results	Culminating in a peer-reviewed article, the Keystone Project revealed a high level of conflict and challenges for managers. It also demonstrated effective synergy between academic and research needs, allowing completion of a complex Washington Sea Grant social science project at a very low cost. By embedding the Keystone Project within the broader research scope, students became engaged in the science firsthand and gained critical research, writing, project management and communication skills. The approach appeared to offer a cost-effective research model with strong educational benefits that will be encouraged in future requests for proposals.
Recap	Washington Sea Grant investigators created an innovative research project model that combines strong graduate education benefits with cost effectiveness.
Comments	
Primary Focus Area	Ocean Literacy and Workforce Development
Secondary Focus Areas	Sustainable Fisheries and Aquaculture, Resilient Communities and Economies
Goals	Aquaculture operations and shellfish harvests are safe, environmentally sustainable and support economically prosperous businesses. Coastal communities engage in comprehensive planning and sustainable development. The future workforce is skilled in disciplines critical to coastal and ocean economies and ecosystem health.
Partners	NOAA Fisheries University of Washington, Program on the Environment, College of the Environment (UW) Washington State Department of Ecology
	* Type impact * Title Washington Sea Grant research assesses stakeholder perceptions of and permit challenges to geoduck aquaculture activities in South Puget Sound * 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 used two strategies to more effectively

PI Draft

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 hearings board decisions. * Results The situation assessment indicated a high level of conflict, suggesting that the time is not right for beginning a collaborative process. The policy analysis identified common aesthetic, recreational, ecological, economic, and land-use issues raised in permit appeals and hearing board decisions. Hearings board decisions consistently require shellfish growers to follow the Pacific Shellfish Growers Environmental Code of Practice (ECOP) guidelines. Researchers presented findings at several conferences and symposia, and developed manuscript for peer reviewed journal. * 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, developed a case study for use in college-level courses, a manuscript for peer reviewed journal, and several conference and symposia presentations. Comments Primary Focus Area Healthy Coastal Ecosystems Secondary Focus Areas Resilient Communities and Economies, Ocean Literacy and Workforce Development Goals Coastal communities engage in comprehensive planning and sustainable development., The future workforce is skilled in disciplines critical to coastal and ocean economies and ecosystem health. Partners Washington State Department of Ecology NOAA Fisheries

Tools, Technologies, Information Services / Sea Grant Products

(1)

Description	Final Keystone Project Report "Geoduck Aquaculture in South Puget Sound: Understanding Social and Policy Dimensions" March 2015
Developed (in the reporting period)?	Yes
Used (in the reporting period)?	Yes
Used for EBM?	Yes
ELWD product?	No
Number of managers	2

Description/Names of managers	WA Dept of Ecology (Perry Lund); NOAA (Laura Hoberecht)
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(2)

Description	Database of geoduck-related shoreline management process appeals in Puget Sound.
Developed (in the reporting period)?	No
Used (in the reporting period)?	Yes
Used for EBM?	No
ELWD product?	No
Number of managers	0
Description/Names of managers	
Reported in previous year?	

(3)

Description	Situation assessment characterizing stakeholder perceptions of geoduck issues in South Puget Sound.
Developed (in the reporting period)?	No
Used (in the reporting period)?	Yes
Used for EBM?	No
ELWD product?	No
Number of managers	0
Description/Names of managers	
Reported in previous year?	

Economic Impacts

No **Economic Impacts** information reported

Community Hazard Resilience

No **Community Hazard Resilience** information reported

Meetings, Workshops, Presentations

(1)

Type of Event	Public or professional presentation
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Description	Using System Maps to Analyze Complex Social-Environmental Issues: A Case Study of Geoduck Aquaculture in the Puget Sound. C. Ryan, K. Mulvaney, S. Pulver and Y. Weng. Association for Environmental Studies and Sciences 2015 Conference. San Diego, CA.
Event Date	06-25-2015
Number of Attendees	450

(2)

Type of Event	Public or professional presentation
Description	Geoduck Aquaculture in Puget Sound: Social and Policy Dimensions. C. Ryan, L. Hall, J. Hamerly, C.Wright. 22nd Conference for Shellfish Growers. Union, WA.
Event Date	03-03-2015
Number of Attendees	125

(3)

Type of Event	Public or professional presentation
Description	Geoduck Aquaculture in Puget Sound: Understanding Social and Policy Dimensions. Lucas Hall, Jarod Hamerly, C. Wright. Shellfish Interagency Permit team meeting,
Event Date	03-20-2015
Number of Attendees	40

(4)

Type of Event	Public or professional presentation
Description	Environmental Management Keystone Symposium. University of Washington, Program on the Environment
Event Date	03-12-2015
Number of Attendees	50

(5)

Type of Event	Public or professional presentation
Description	Geoduck Aquaculture in South Puget Sound: Understanding Social and Policy Dimensions. Lucas Hall, Jarod Hamerly, C. Wright. Fourth Annual Symposium of Public Affairs Research. University of Washington, Evans School of Public Policy and Governance

Event Date	05-29-2015
Number of Attendees	120

Leveraged Funds

(1)

Purpose	Toward Sustainable Geoduck Aquaculture Management in Puget Sound: Assessing Policy and Social Dimensions - keystone graduate student tuition
Source	Anonymous/Unknown
Amount	35000
Start Date	2/1/2015
End Date	1/31/2016

Narrative

All major research tasks have been completed, including literature review, Keystone Project Team situation assessment data collection and analysis (interviews, hearing board decision document review), policy analysis, and Final Keystone Report. Integration work following the Keystone project resulted in a draft article that is under review at a peer-reviewed journal, Coastal Management. Most outreach tasks have been completed, including several presentations (WA Shellfish Growers Association, UW Program on the Environment, WA Shellfish Implementation Team, UW Evans School Symposium, Association for Environmental Studies and Sciences).

The situation assessment indicated a high level of conflict, suggesting that the time is not right for beginning a collaborative process. The policy analysis identified common aesthetic, recreational, ecological, economic, and land-use issues raised in permit appeals and hearing board decisions. Hearings board decisions 1) consistently support established scientific knowledge about geoduck aquaculture, and 2) require shellfish growers to follow the Pacific Shellfish Growers Environmental Code of Practice (ECOP) guidelines. Researchers presented findings at several conferences and symposia, and developed manuscript for peer reviewed journal.

Project participants:

Clare M. Ryan, University of Washington
P. Sean McDonald, University of Washington
Lucas Hall, University of Washington
Jarod Hamerly, University of Washington
C. Wally Wright, University of Washington
Daniel Feinberg, University of Washington
Perry Lund, WA Dept of Ecology
Laura Hoberecht, NOAA Fisheries