

RESEARCH/PD ANNUAL REPORT - PROGRESS REPORT

2015 annual report - progress

Christine Bae

The environmental and economic impacts of moorage marinas on the West Coast

R/RCE-1

Submitted On: 04/25/2016 03:42:08 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	1000	Attendees at presentations
Volunteer hours	2	Dr. Jiyoung Park's two students contribute approximately 200 hours for the literature review and the preliminary analysis of IMPLAN for the economic analysis.
P-12 students reached	0	
P-12 educators	0	

REQUESTED INFORMATION

Publications

The Environmental and Economic Impacts of Moorage Marinas on the West Coast

Publication Type: General Public and Advisory Reports, Fact Sheets, Posters, etc.

Publication Year: 2015

Publication Authors:

Publisher Info:

Notes:

Related URLs:

Keywords:

Publication URLs:

Abstract:

Citation: Poster presentation at the International Geographic Union Conference, Moscow, 17-22 August 2015. <http://meridian.aag.org/callforpapers/program/index.cfm?mtgID=62>

Citation for Coverage:

SG can post PDF online?:

Uploaded File: [Seagrant_IGU.jpg](#)

Students Supported

Ihnji Jon (Continuing Student)
ihnji@uw.edu
University of Washington, Urban Design and Planning

Field of Study:
Advisor:
Degree Type: PhD
Degree Year: 2018

Student Project Title:

Involvement With Sea Grant This Period (capstone, fellow, intern, etc.): IMPLAN training at the University of Buffalo

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

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

Thesis / Dissertation:

New or Continuing?: continuing

Degree awarded this reporting period?: No

Financially supported?: Yes

Debmalya Sinha (New Student)
debmalya.sinha@gmail.com
University of Washington, Urban Design and Planning

Field of Study: Urban Planning
Advisor: Christine Bae
Degree Type: Other
Degree Year: 2015

Student Project Title:

Involvement With Sea Grant This Period (capstone, fellow, intern, etc.): Debmalya Sinha, a MUP-2nd year student, worked as a GIS analyst and prepared for a poster, and paid out of WSG project fund (acct: 62-7573)

Post-Graduation Plans (employer, grad school, etc.): Employer: LSA Associates 1500 Iowa Avenue, Suite 200 Riverside, CA 92507

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

Thesis / Dissertation:

New or Continuing?: New

Degree awarded this reporting period?: Yes

Financially supported?: Yes

Narratives

2016 Annual Progress Report
Uploaded File: [UW_annual_SGReport_Bae0425Final.pdf](#)

A Preliminary Economic Impact Analysis of Marinas in Southern California and Washington

Uploaded File: [WSG_report_Preliminary_MRIO_Zip_Bae_Moore_022916.pdf](#)

Partners This Period

Puget Soundkeeper Alliance

Types: NGO

Scale: REGIONAL

Notes: (Andy Gregory, Pollution Prevention Director)

Washington State Department of Natural Resources

Types: Government

Scale: STATE

Notes: (Heather Gibbs, Larena Amiotte, Acquatic Lands Habitat Conservation Plan Team)

Washington Sea Grant

Types: Sea Grant Program

Scale: STATE

Notes: (Aaron Barnett, Nicole Faghin, and others)

Northwest Marine Trade Association

Types: Industry/Business

Scale: REGIONAL

Notes: Peter Schrappen

USC Sea Grant

Types: Sea Grant Program

Scale: STATE

Notes: James Fawcett

STANDARD QUESTIONS

Impacts and Accomplishments

(1)

Type	accomplishment
Title	West Coast Sea Grant research indicates that moorage marinas may be twice as important economically in Washington than in Southern California
Relevance	As recreational boat sales recover and related activities trend upward, the contribution of moorage marinas to local economies is increasing. However, currently there is little environmental monitoring at marina sites, and coastal managers and marina operators have limited information for economic and environmental planning.
	Sea Grant programs at University of Southern California and in Washington funded an investigation on the impacts of marinas in Southern California and Washington State. The research team compiled data from a range of existing sources to support

Response	identification by managers and marina operators of cost-effective measures for maximizing environmental protections. The team evaluated a multiregional input-output (MRIO) model using IMPLAN® data sources for economic gains, although economic costs have not yet been factored in. The model is also being used to assess environmental impacts. Because environmental data are scarce, the team is using existing monitoring programs to attach costs at each marina.
Results	The team reviewed existing data and created the MRIO model. The economic gain from marina activities in Southern California for 2014 was \$2.9 billion and the total economic impact was \$4.6 billion. By contrast, the direct economic impact of Washington marina activity was far greater at \$5 billion with a total economic impact of \$8.1 billion. The final step of including economic costs will ensure a balanced picture.
Recap	Initial findings from regional Sea Grant research explored the combined economic and environmental impacts of West Coast marinas, suggesting that their economic importance is much greater in Washington than Southern California.
Comments	
Primary Focus Area	Resilient Communities and Economies
Secondary Focus Areas	Healthy Coastal Ecosystems
Goals	Ocean and coastal habitats are protected, enhanced and restored., Coastal communities and economies are vibrant and resilient.
Partners	Northwest Marine Trade Association Puget Soundkeeper Alliance Washington State Department of Natural Resources
PI Draft	

Tools, Technologies, Information Services / Sea Grant Products

No **Tools, Technologies, Information Services / Sea Grant Products** information reported

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
Description	Presenter: Christine Bae and Jiyoung Park Authors: Jiyoung Park, Christine Bae, Nathaniel Trumbull, James E. Moore, II Title: The Economic and Environmental Impacts of Moorage Marinas on the West Coast Conference:The 2015 Annual Conference of the North American Regional Science Council (NARSC), Session 135 Location: Hilton Hotel, Portland, OR
Event Date	11-14-2015
Number of Attendees	644

(2)

Type of Event	Public or professional presentation
Description	Presenter: Jiyoung Park Authors: Jiyoung Park, Christine Bae, Nathaniel Trumbull, James E. Moore, II Title: The Economic and Environmental Impacts of Moorage Marinas on the West Coast Conference:The 55th Annual American Collegiate Scholars of Planning Conference, Session 3-10 Location: Houston, TX
Event Date	10-24-2015
Number of Attendees	450

(3)

Type of Event	Public or professional presentation
Description	International Geographical Union Regional Conference, Moscow, Russia
Event Date	08-17-2015
Number of Attendees	2500

(4)

Type of Event	Public or professional presentation
Description	UW College of Built Environment Open Labs
Event Date	05-21-2015
Number of Attendees	250

(5)

Type of Event	Public or professional presentation
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Description	Association of American Geographers, Chicago
Event Date	4/21/2015
Number of Attendees	40

Leveraged Funds

(1)

Purpose	The Environmental and Economic Impacts of Moorage Marinas on the West Coast - conference travel
Source	UW Department of Urban Design and Planning
Amount	2025
Start Date	10-21-2015
End Date	10-24-2015

(2)

Purpose	The Environmental and Economic Impacts of Moorage Marinas on the West Coast - conference travel
Source	Sea Grant Sponsored Activities' Participants (Individual tideland owners)
Amount	900
Start Date	11-11-2015
End Date	11-14-2015

(3)

Purpose	The Environmental and Economic Impacts of Moorage Marinas on the West Coast - conference travel
Source	American Association of Geographers
Amount	1250
Start Date	08-17-2015
End Date	08-21-2015

(4)

Purpose	The Environmental and Economic Impacts of Moorage Marinas on the West Coast - conference travel
Source	University of Connecticut

Amount	1000
Start Date	04-21-2015
End Date	04-21-2015

PROJECT TITLE: The Environmental and Economic Impacts of Moorage Marinas on the West Coast

REPORTING PERIOD: 02/01/2015 through 01/31/2016

Investigators (*PIs):

UW team: Christine Bae* (UW), Nathaniel Trumbull (UConn)

USC team: James E. Moore* (USC), Jiyoung Park (SUNY, Buffalo)

PROJECT GOALS AND OBJECTIVES:

This project aims to investigate the net impacts of the economic and the environmental consequences of marinas in Southern California and Washington State. The key methodologies used are a multiregional input-output (MRIO) model using widely known IMPLAN® data sources for both the economic and environmental impacts and a Geographically Weighted Regression (GWR) to measure the influence of marinas on the environment.

PROGRESS DURING REPORTING PERIOD:

We have completed a zip-code level of multiregional input-output (MRIO) model for the marinas of Southern California and Washington State. In Southern California, we have identified 20 zip codes in four county areas (Los Angeles, Orange, Imperial and Ventura Counties), and 19 marina-related industries. Because of the supply-side Southern California MRIO model is composed of 21 industry sectors, we have converted the 19-marina related industries to the corresponding 21 supply-side model sectors. The total number of the zip codes for the supply side was 621, results in a large matrix of $(21 \times 627) \times (21 \times 627)$. On the other hand, there are 85 zip codes with marinas with the 21 supply-side sectors, resulting in a $(21 \times 705) \times (21 \times 705)$ matrix in Washington State. We developed a hypothetical model with an increase of 10% final demand.

We have conducted literature review of the environmental impacts, continued to attend the boating conference (2015 Northwest Marina & Boatyard Conference), and met with professionals in WA DNR, WSG, USC SG, NMTA, etc.

Preliminary RESULTS /FINDINGS:

The direct economic impact of marina activities in Southern California was \$2.9 billion, and the total economic impact was \$4.6 billion. The total Type I Multiplier of Southern California is 1.59. The biggest gains from marinas were related to Retail Trade (Sector 44), Accommodation and Food Service (Sector 72), Manufacturing (Sector 31), and Professional, Scientific and Technical Services (Sector 54).

On the other hand, the supply-side of the Washington MRIO model shows the direct economic impact of marina activities was \$5.0 billion, and the total economic impact was \$8.1 billion. The total Type I Multiplier of Washington is 1.61. The biggest gains from

marinas were related to Retail Trade (Sector 44), Accommodation and Food Service (Sector 72), Other-not an industry (Sector 93), Information (Sector 51), and Professional, Scientific and Technical Services (Sector 54).

HOW DO THESE NEW RESULTS CONTRIBUTE TO THE OVERALL PROJECT GOALS?

These results enable us to move to the next phase of the project.

NON-FINANCIAL PARTNERS:

Washington:

WA Department of Natural Resources (Heather Gibbs, Larena Amiotte)
WA Department of Fish & Wildlife (Jennifer Lanksbury)
Sea Grant (Aaron Barnett, Nicole Faghin)
Puget Soundkeeper Alliance (Andy Gregory, Pollution Prevention Director)
Northwest Marine Trade Association (Peter Schrappen)
Washington State Parks, Clean Vessel Program (Alan Wolslegel)
UW, Department of Urban Design and Planning (Christopher Campbell)
Elliott Bay Marina (Dwight Jones)

California and Connecticut

USC Sea Grant (James Fawcett, Marine Transport/Seaport Specialist)

WHAT NEXT? ANY CHANGES TO THE PLAN?

The null model, zip-code level MRIO for Southern California and Washington, developed and analyzed in the attached report, requires a sensitivity test. We plan to visualize the outcome by zip-code level via Geographic Information System (GIS) analysis.

The biggest challenge of the project relates to the existence of comprehensive economic and/or environmental database. This remains a big surprise to all of the research team members. There is no one single database on which we can rely for quantifying environmental pollution into the economic model. In addition, there is no comprehensive list of mitigation measures that exists.

We have requested and were granted a one year no-cost extension. We plan the following tasks in the coming year:

1. The UW team plans to survey marina operators, vendors, and other marina-related professionals to compile mitigation costs during the summer 2016;
2. We will represent the above environmental costs at the zip code level of the MRIO model, and complete the economic and environmental impact analysis of moorage marinas;

3. During the 2016 Summer B term, a new course will be offered (UrbDP 598 and SLN: 14062);

Title: Water's Edge: Sustainable Development of Marinas in the Puget Sound;
Educational Format: lectures (scientist, marina and port managers, environmental groups and urban planners) and field trips (Elliott Bay Marin, Shilshole Bay, etc.);

4. Dissemination of the final product via journal publication, conferences, website.