

V(A). Planned Program (Summary)

Program # 13

1. Name of the Planned Program

Natural and Environmental Resource Economics, Markets and Policy

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
605	Natural Resource and Environmental Economics	50%		50%	
609	Economic Theory and Methods	25%		25%	
610	Domestic Policy Analysis	25%		25%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2012	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	2.0	0.0
Actual Paid Professional	0.8	0.0	1.4	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
30336	0	139146	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
39712	0	165644	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

- Evaluate the impacts of ecolabeling on consumer demand for frozen seafood.
- Determine the impacts of consumer concerns of PCB contamination of farmed salmon on US import demand for farmed salmon.
- Evaluate the impact of farmed shrimp on the US market and how shrimp aquaculture is changing prices.
- Investigate the impact of homogeneous resource modeling in a heterogeneous fishery by synthesizing a stochastic production frontier model with the estimation classification algorithm.
- Model spatial decisions of fishermen in the Northeast Atlantic herring fleet.
- Run experiments using the game theoretic model.

2. Brief description of the target audience

The target audience includes fishers, environmental economists, and policy makers.

3. How was eXtension used?

{No Data Entered}

V(E). Planned Program (Outputs)

1. Standard output measures

2012	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	100	0	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2012
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2012	Extension	Research	Total
Actual	0	4	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Peer reviewed publications

Year	Actual
2012	1

Output #2

Output Measure

- Books and monographs
Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Abstracts
Not reporting on this Output for this Annual Report

Output #4

Output Measure

- Conference proceedings

Year	Actual
2012	3

Output #5

Output Measure

- M.S. theses and Ph.D. dissertations

Year	Actual
2012	1

Output #6

Output Measure

- Professional/scientific presentations

Year	Actual
2012	1

Output #7

Output Measure

- Student training

Year	Actual
2012	3

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Increase understanding of scientists and decision makers through publications and presentations of the the outcomes of game theoretical models to identify fisheries where political intervention is likely based on the degree of heterogeneity among harvesters.
2	Increase understanding of private and public sector and scientists of economic and market factors in fisheries and aquaculture management through publications and presentations.
3	Improve understanding and management of agricultural and aquacultural risks, including those arising from climate change.
4	Increased understanding of the private and public sector and scientists of economic valuation of air quality and greenhouse gas emissions through publications and presentations

Outcome #1

1. Outcome Measures

Increase understanding of scientists and decision makers through publications and presentations of the the outcomes of game theoretical models to identify fisheries where political intervention is likely based on the degree of heterogeneity among harvesters.

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

Increase understanding of private and public sector and scientists of economic and market factors in fisheries and aquaculture management through publications and presentations.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Marketing, Trade, and Management of Fisheries and Aquaculture Resources: Effective management of our fisheries resources is critical to maintaining the health of our oceans and sustaining our recreational and commercial fishing communities. Insights from the work will generate new understanding of how to incorporate economic and market factors into fisheries and aquaculture management for the public and private sectors.

What has been done

The URI Seafood Initiative and its website have been the primary output of this project in the past periods; however, with the departure of the principal investigator involved in the Initiative, nothing has occurred during this reporting period. A new project began during this reporting period, which is within the stated objective, that looks into better management practice for oyster aquaculture operation in the face of increasing risk of food borne disease due to climate change. The project will focus primarily the oyster farmers in RI. Efforts in collecting publicly available data has begun.

Results

The analysis of survey data collected was completed in previous reporting period, and due to the departure of principal investigator involved in Sustainable Seafood Initiative there has not been any follow up on that project. The new oyster farm project is still in its infancy; the anticipated outcomes include improved shellfish management policy that recognizes the market forces at work when evaluating proposed intervention in, or regulation of, shellfish harvest timing, volume, or practices. In particular, interventions on the supply side for a given species will necessarily interact with market demand, which will incorporate prices/availability of that species outside the local market, as well as prices/availability of other shellfish species in the region.

4. Associated Knowledge Areas

KA Code	Knowledge Area
605	Natural Resource and Environmental Economics
609	Economic Theory and Methods
610	Domestic Policy Analysis

Outcome #3

1. Outcome Measures

Improve understanding and management of agricultural and aquacultural risks, including those arising from climate change.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Climate change and globalization are sources of evolving risks to agricultural producers in the US. Climate change will result in increasingly variable production for land-based crops and aquaculture, and supply and demand effects will result in attendant price fluctuations. Globalization will exacerbate price risks due to increasing competition and equilibration of international market prices, as well as transmitting weather shocks abroad into price fluctuations inside the US. This project will address these risks (1) by re-formulating best management practices in light of the evolving risks; and (2) by exploring improvements to existing financial risk

management policies available to US farmers.

What has been done

Oysters: Preliminary results are being disseminated in the forthcoming issue of the Narragansett Bay Journal. Agriculture: This line of research is more basic: identifying cost-saving measures and alternative risk management policies, some of which may require national implementation to restructure crop insurance. Modeling and results are not complete enough at this stage for dissemination to the general public.

Results

Oysters: The simulation model has farmers choose between fast-growing oyster and disease resistant strains. The model uses an expected utility approach to identify the optimal share of disease resistant oysters in the farmer's portfolio, as a function of climate change and risk aversion. The model predicts that changing water temperatures in Narragansett Bay will lead to increasing reliance on disease resistant oysters, and extreme climate change may necessitate improved financial risk management. Agriculture: I have developed several decision-making frameworks for alternative means of insuring crop losses. I have found that deductible programs are always preferable to coinsurance programs with the same expected value when farmers are risk averse, but that in the case of shallow-loss policies these differences are small. Shallow-loss coverage is effective only in the range where losses happen more predictably, so farmers are unwilling to pay significant risk premium for deductibles. Thus, higher deductibles proposed in the current Farm Bill are likely extra subsidies rather than equivalent policies. Also, I have developed a new general equilibrium pricing model in which traditional crop insurance is replaced by options markets. Preliminary results suggest better coverage could be obtained cheaper than RMA rates. Implementation challenges still need resolution.

4. Associated Knowledge Areas

KA Code	Knowledge Area
605	Natural Resource and Environmental Economics
609	Economic Theory and Methods
610	Domestic Policy Analysis

Outcome #4

1. Outcome Measures

Increased understanding of the private and public sector and scientists of economic valuation of air quality and greenhouse gas emissions through publications and presentations

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2012	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Effective balancing of economic forces and unwanted byproducts of economic activity is critical for sustaining human health and wellbeing. Insights into the valuation of air pollution and greenhouse gas emissions will generate new understanding of how our economy should evolve and will evolve if left unchecked.

What has been done

Estimated house price appreciation resulting from 1990 Clean Air Act and assessed the distribution of those benefits across geographic locations and between various socioeconomic groups. Gathered data from Los Angeles Metro Area related to air quality, housing prices, population density, roads and topology and created variables for regression analysis using GIS. Gathered smart meter data from three buildings on the Naval War College campus and analyzed the data for evidence of energy reductions following energy efficiency upgrades.

Results

For air pollution, results indicate that while the prices of owner-occupied housing units respond quickly to changes in amenities, the prices of rental-occupied housing is slow to respond. Using housing markets to value environmental and other public amenities is quite common in economics, my results influence future analyses by validating the use of owner-occupied housing units to value amenities and by cautioning against using rental-occupied housing. In energy work, econometric estimates of energy savings corroborated ex ante engineering estimates, which argues that, contrary to many findings in the economics literature, energy efficiency projects can have measurable impacts on total energy consumption.

4. Associated Knowledge Areas

KA Code	Knowledge Area
605	Natural Resource and Environmental Economics
609	Economic Theory and Methods
610	Domestic Policy Analysis

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

We exist in turbulent times nationally, regionally, locally, and institutionally. Appropriations budgets are being cut dramatically on many fronts, resulting in fewer resources for increasing need areas. As finances and personnel change, it is likely our programs and outcomes will have to shift to accommodate them.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

- Extension and research outputs are subject to peer evaluations before publication.
- Citations of published works are quantified through services such as the ISA Web of Science and Google Scholar.

Key Items of Evaluation