

# NMFS FELLOW - CONTINUING REPORT

NMFS Fellows - 2016-2017

Jennifer Meredith

NMFS/Sea Grant Fellowship - Marine Resource Economics - Fish or Flight: Modeling the migration decisions of fish harvesters in rural Alaska

E/I-22

Submitted On: 03/17/2017 08:38:34 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	0	
Volunteer hours	0	
P-12 students reached	0	
P-12 educators	0	

## REQUESTED INFORMATION

### Publications

No **Publications** information reported

### Students Supported

**Jennifer Meredith** (Continuing Student)  
**jenmer8@uw.edu**  
**University of Washington, Economics**

**Field of Study:** Fisheries Economics

**Advisor:** Chris Anderson

**Degree Type:** PhD

**Degree Year:**

**Student Project Title:** Fish or Flight: Modeling the Participation and Migration Decisions of Rural Alaskan Harvesters

**Involvement With Sea Grant This Period (capstone, fellow, intern, etc.):** Fellow

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

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

**Thesis / Dissertation:** Fish or Flight: Modeling the Participation and Migration Decisions of Rural Alaskan Harvesters

**New or Continuing?:** continuing

**Degree awarded this reporting period?:** No

**Financially supported?:** Yes

### Narratives

#### Year 3 Narrative

**Uploaded File:** [Progress\\_Report\\_Narrative\\_2017.docx](#)

### Partners This Period

#### NOAA Alaska Fisheries Science Center

**Types:** Government

**Scale:** STATE

**Notes:**

#### Bristol Bay Economic Development Corporation

**Types:** Other

**Scale:** REGIONAL

**Notes:**

#### Aleknagik Traditional Council

**Types:** Government

**Scale:** LOCAL

**Notes:**

#### Naknek Village Council

**Types:** Government

**Scale:** LOCAL

**Notes:**

#### Manokotak Traditional Council

**Types:** Government

**Scale:** LOCAL

**Notes:**

## STANDARD QUESTIONS

### Community Hazard Resilience

No **Community Hazard Resilience** information reported

### Economic Impacts

(1)

**For each economic impact:  
(provide a description and  
numbers in all relevant categories)**

<b>Description</b>	Local Research Assistants Hired to Conduct Surveys (Temporary jobs lasting 1-2 weeks)
<b>Market Impacts (\$)</b>	1500
<b>Non-market Impacts (\$)</b>	
<b>Businesses Created</b>	
<b>Businesses Sustained</b>	
<b>Jobs Created</b>	10
<b>Jobs Sustained</b>	
<b>Patents</b>	

## Impacts and Accomplishments

(1)

<b>Type</b>	accomplishment
<b>Title</b>	Sea Grant works to understand the drivers of outmigration from rural Alaskan communities
<b>Relevance</b>	Declining local permit ownership in the Bristol Bay salmon fishery is of increasing concern to policy makers. Little is known about whether these permit sales correspond with rural residents leaving the village, whether they sell their permits under duress, or what policies would enhance the sustainability of rural harvesting operations.
<b>Response</b>	A Sea Grant fellow traveled to 10 different rural Alaskan communities to conduct over 800 household surveys designed to examine what role the salmon fishery plays in driving migration from vulnerable communities. Great care was given to the sampling procedure and to tracking down respondents in order to ensure that the results would be able to demonstrate a causal link between declining fishery participation and rural outmigration.
<b>Results</b>	Although results are still preliminary, the household survey data analysis suggests that there is no direct impact on outmigration of the original permit holder, but that their descendants are less likely to reside in the village once the permit has been sold out of the family. In the future, the researchers will test for a

	causal link between volatility in the fishery and rural residents leaving their villages. In addition, they will provide insight into whether permit subsidies, improved access to credit, or educational training have been effective in making rural harvesting operations more sustainable.
<b>Recap</b>	WSG plans to reduce the vulnerability of rural Alaskan communities by identifying policy interventions that promote the viability of local harvesting operations and reduce the probability that rural residents will be forced to exit the fishery.
<b>Comments</b>	
<b>Primary Focus Area</b>	Resilient Communities and Economies
<b>Secondary Focus Areas</b>	
<b>Goals</b>	Coastal communities and economies are vibrant and resilient.
<b>Partners</b>	Alaska Fisheries Science Center Bristol Bay Economic Development Corporation Aleknagik Traditional Council, Iliamna Traditional Council, King Salmon Traditional Council, Naknek Village Council, Koliganek Traditional Council, Manokotak Traditional Council, Dillingham Mayors' Office
<b>PI Draft</b>	

### Leveraged Funds

No **Leveraged Funds** information reported

### Meetings, Workshops, Presentations

(1)

<b>Type of Event</b>	Public or professional presentation
<b>Description</b>	Jennifer Meredith Presented Fish or Flight: Modeling the Participation and Migration Decisions of Rural Alaskan Salmon Harvesters at the Alaska Salmon Symposium at University of Washington.
<b>Event Date</b>	11-18-2016
<b>Number of Attendees</b>	75

**Tools, Technologies, Information Services / Sea Grant Products****(1)**

<b>Description</b>	Community Leader and Individual Harvester Survey
<b>Developed (in the reporting period)?</b>	No
<b>Used (in the reporting period)?</b>	Yes
<b>Used for EBM?</b>	No
<b>ELWD product?</b>	No
<b>Number of managers</b>	0
<b>Description/Names of managers</b>	
<b>Reported in previous year?</b>	

## Progress Report Narrative

### NMFS - Sea Grant Marine Resource Economics Graduate Fellowship

#### Fish or Flight: Modeling the Participation and Migration Decisions of Fish Harvesters in Rural Alaska

The goal of this project is to ascertain the impact of fishery regulations on migration patterns in rural fishing communities in Alaska and the accompanying effects on community well-being, vulnerability and adaptability. During this reporting period, progress towards this larger goal was made along several dimensions: traveling to 10 different rural Alaska communities where we worked with local NGOs and tribal associations to conduct surveys in March-June of 2016, entering the resulting data into a database, and beginning preliminary analysis.

Beginning in March of 2016, four research assistants were hired and Jennifer Meredith relocated to Dillingham, Alaska along with these assistants. For two weeks they trained on survey protocol and pre-tested the survey with volunteers in Dillingham. After the final version of the survey was prepared, tribal authorities and the local CDQ group (Bristol Bay Economic Development Corporation) were asked for their permission to begin surveying in randomly chosen villages around the Bristol Bay region. For the next three months, the team traveled by small plane to 10 remote villages and conducted 823 household surveys (reaching 81% of their targeted respondents). The communities where surveys were conducted were: Aleknagik, Newhalen, Iliamna, Togiak, King Salmon, Naknek, South Naknek, Koliganek, Manokotak, and Dillingham. The random sample consisted of original Bristol Bay drift and set net salmon permit holders from 1975, permit holders who had been fishing between 2000-2015, and a control group of voters who never received permits. Surveys were most often conducted in tribal council offices with the permission of the local authorities. When necessary, the team also visited respondents in their homes or at community gatherings. Local enumerators were hired to assist with tracking down targeted respondents or their descendants. In person surveys concluded in early June of 2016, but since many respondents had relocated outside the region phone surveys continued throughout June and July of 2016.

Following the conclusion of the data collection, Jennifer Meredith began inputting the collected data into a database. Respondents' survey answers were matched with their salmon fish ticket landings data and the CFEC permit holder database. The assistance of the Alaska Fishery Science Center economists was invaluable. Due to the complicated nature of rural social networks and a desire to use younger siblings of permit holders who were themselves ineligible for permits as a control group, it became necessary to collect detailed family tree data during the surveys. The complexity of the resulting data coupled with the narrative survey responses of many village elders meant that the researchers did not feel comfortable outsourcing the data entry to anyone unfamiliar with the project. This also meant that the data entry took longer than anticipated and a full dataset was not assembled until February 2017.

Preliminary analysis of the household survey data has begun. The first hypothesis to be tested was whether there was an outflow of migration resulting from permit sales. The researchers compared original permit holders who sold permits to several control groups: rural residents who never received permits, permit holders who were given non-transferable permits, and younger siblings who did not qualify for permits of their own. The results suggest that while there is no immediate impact of permit sale on the probability of leaving the village, there are intergenerational spillovers with the descendants of permit holders who sold their permits being less likely to still reside in the village.

We presented the sampling strategy and the number of respondents attained at the Alaska Salmon Symposium in November 2016 and are traveling to La Paz, Mexico to present the preliminary results of the household survey data analysis to the North American Association of Fisheries Economists next week. We believe that the input of fisheries economists, other social scientists, and industry experts who are familiar with the region and the fishery were invaluable to our progress. We also conducted numerous phone and radio interviews with local media and a large article on the study written by Laine Welch was published in the Anchorage Daily News.

For the final reporting period, we plan to test other hypotheses about the impact of permit sale on assets, social capital, and the drivers of permit sale (including the effectiveness of CDQ programs). Then we will write up these results and travel back to Dillingham to present them to the local community.