

## **Bering Sea Integrated Ecosystem Research Project: October 1, 2008 Report for B72**

**Project #: B72**

**Title: Spatially explicit integrated economic model of pollock and cod**

**Principal Investigator(s) and Recipient Organization(s):**

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**Contract Period and Amount of Funding: Summer 2008 – September 20, 2010. Current contract amount in spending plan is \$248,051. Total B72 project amount through 2012 is \$455,734.**

**Report Period: This is the first project report, covering all work through September 2008.**

**Report Date: October 1, 2008**

**Lead Author of Report: Alan Haynie**

**Proposed timeline and milestones within report period**

- Organize VMS, Observer, and environmental data with collaboration of other project PIs
- Develop spending plan
- Refine modeling approach.

**Project Summary:** This project will model how fishing effort is likely to change in the Bering Sea cod and pollock fisheries under changing environmental conditions. These models will be constructed both directly, through the inclusion of spatially-explicit environmental data into existing models, and indirectly, through the inclusion of spatial predictions of fish abundance from FEAST or other BSIERP-related models. This project will allow us to model how research conducted on the Bering Sea ecosystem (as reflected in hypotheses 1-4) will translate into changes in fishing effort, as discussed more directly in hypothesis 5.

**Progress Summary:** We have accomplished our first year milestones. Specifically, project-related work has included:

- Working on spending plan and other project activities.
- Meeting with the EMC and modeling PIs.
- Continuing efforts refining location choice model to be employed in this analysis.
- Organizing VMS data and developing a new method that will allow us to relatively accurately estimate the location of unobserved fishing effort in the pollock fishery.
- Continuing efforts to identify a suitable post-doctoral fellow for the project.
- Revising submitted paper for publication that contains first pollock models.
- Organizing environmental data for the project, including satellite, weather station, and buoy data.

**Lessons learned and project adjustments:** We have spent a significant amount of time understanding the different sources of satellite and buoy data. Choosing the right scale for this data is partially dependent on the work of other BSIERP projects so we are being careful to make good decisions early.

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Identifying an appropriate postdoctoral fellow for this project has been challenging. We are continuing to work to find the right postdoctoral fellow to supplement Alan Haynie's work on this project.

**Integration activity:** The following integration activities have taken place to date:

- Sample data and meta-data submitted to Ken Coyle on March 28, 2008.
- Held meeting with PMEL and AFSC researchers in January to coordinate the discussion and integration of data between different NOAA groups; met with various PMEL researchers to improve data understanding and sharing.
- Discussed modeling approaches with other BSIERP modeling PIs in numerous meetings.
- Briefly presented modeling approach to EMC.
- Provided proposal assistance and a letter of support for a project for CAMEO and NMFS Saltonstall-Kennedy grant funding that would strongly complement the modeling being undertaken in BSIERP.
- Held a conference call with BSIERP LTK economist Sarah Kruse to discuss opportunities for collaboration.

### **Education and Outreach:**

Through funding from AFSC, an overview of the modeling approach of this project was presented in Gijon, Spain at the International Symposium on the Effects of Climate Change on the World's Oceans.

### **FY09 Project B72 Workplan**

December 2008: submit paper predicting fishing using VMS data; complete draft of new pollock modeling for AFSC internal review.

March 2009: Complete data organization of environmental and Pacific cod data; run first pollock models with environmental data.

September 2009: Present revised pollock model with environmental data; run "basic" cod models.

### **2009-2012 Tasks, Assignments, Timeline:**

B72: Spatially explicit integrated economic model of pollock and cod, Contact: Alan Haynie, [Alan.Haynie@noaa.gov](mailto:Alan.Haynie@noaa.gov), 206-536-4253.

All work will be overseen by Alan Haynie with the assistance of a postdoctoral fellow and potentially other researchers who may collaborate on related work if external funding will support this work. Below is an outline of the 5-year plan for this B72 project.

December 2008: submit paper predicting fishing using VMS data; complete draft of new pollock modeling for AFSC internal review.

March 2009: Complete data organization of environmental and Pacific data to run model; run preliminary pollock models with environmental data.

September 2009: Present revised pollock model with environmental data.

March 2010: Run first cod models with environmental data; submit pollock paper for review.

September 2010: Present final "stand-alone" pollock model and revised cod models.

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September 2011: Submit manuscripts for publication. Incorporate FEAST and other spatially-explicit BSIERP model output into pollock and cod models, as feasible.

September 2012: Finalize and submit all publications.

Depending on the interaction of this project with other aspects of BSIERP, years 3-5 could extend slightly depending on the pace of other projects.