Assessment of External Data Indicators as Predictors of Fishing Effort

FY 2013 Proposal

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1. Overview

1.1. Sponsor
Russell Porter

1.2. Focus Group
Survey Design and Evaluation

1.3. Background
Current methods for estimating fishing effort treat days within a month similarly, accounting for effort differences by weekday and weekend day types. The more salient aspects of the fishing environment have not been considered when making effort projections for unsampled days.

1.4. Project Description
External data elements will be evaluated for utility in predicting fishing effort. Once a list of candidate variables has been generated, we will research and determine whether data elements are accessible and can be incorporated into a fishing effort estimation model. Available data elements will be merged into a data set of historic effort sampling statistics at the most granular level for analysis (daily, weekly, monthly). Predictive models will be developed, assessed and tested to determine the efficacy of effort prediction.

1.5. Public Description

1.6. Objectives
1. Determine what external factors are useful in predicting recreational fishing effort.2. Build a predictive model using external data elements that will more accurately predict effort for any given day.

1.7. References
None

2. Methodology

2.1. Methodology
- Convene a meeting of interested parties (state representatives, fishery managers, data analysts, etc.) to brainstorm a list of potential external factors for predicting fishing effort. Most likely this will be done as a teleconference.- Operationalize the external factors on the list to determine how each can be measured, obtained and incorporated into the modeling process.- Data Manager will secure the necessary data and convert it into data files appropriate for analysis in SAS.- Data Analyst will perform various analyses to determine the best possible models and work in consult with statistical experts to develop and refine models in an iterative process resulting in the most statistically robust predictors.

2.2. Region
Pacific

2.3. Geographic Coverage
Washington, Oregon and California

2.4. Temporal Coverage
1980 - 2012 (as much accurate data is available for assessment)

2.5. Frequency
Once

2.6. Unit of Analysis
Fishing site by day

2.7. Collection Mode
Historical external data obtained from orignal agency resources in mass.

3. Communication

3.1. Internal Communication

Monthly conference call updates with the core team with additional calls as needed. Progress updates given at RecFIN Technical Committee meetings. Occasional email updates to broader team (advisory).

3.2. External Communication

Monthly reports in MRIP Collaboration tool and final report of findings and recommendations for potential integration with estimates calculations.

4. Assumptions/Constraints

4.1. New Data Collection

Y

4.2. Is funding needed for this project?

4.3. Funding Vehicle

RecFIN

4.4. Data Resources

To be determined in the course of project execution. This is a new data collection in the sense that existing data sources will be culled and new data sets created for integration with survey data.

4.5. Other Resources

4.6. Regulations

4.7. Other

5. Final Deliverables

5.1. Additional Reports

Recommendations for ongoing use of external variants to predict recreational fishing effort

5.2. New Data Set(s)

to be determined

5.3. New System(s)

to be determined

6. Project Leadership

6.1. Project Leader and Members

First Name	Last Name	Title	Role	Organization	Email	Phone 1	Phone 2
Ed	Hibsch	Data Analyst/Programmer	Team Leader	Pacific States Marine Fisheries Commission	ehibsch@psmfc.org	503-595-3109	

7. Project Estimates

7.1. Project Schedule

Task #	Schedule Description	Prerequisite	Schedule Start Date	Schedule Finish Date	Milestone
3	Convert data from external sources to be merged with sample data at the site/day level		03/04/2013	05/31/2013	
2	Operationalizatio n of external variables _ Research data accessibility and begin acquisition process	1	02/18/2013	05/17/2013	
4	Develop, analyze, assess predictive models in SAS	3	06/03/2013	09/27/2013	
5	Develop recommendation report to support ongoing use of models in estimation	4	09/30/2013	11/01/2013	
1	Brainstorming session to determine pool of possible external variables		02/11/2013	02/15/2013	

7.2. Cost Estimates

Cost Name	Cost Description	Cost Amount	Date Needed
Statistical Consulting	Consultation with statistical experts on methodology	$19205.00	04/01/2013
Software	Software acquisition and licensing (if needed)	$20000.00	02/04/2013
Data Management	Data Manager resources to obtain data, format and standarize for use in analyses	$38410.00	02/04/2013
Travel	Travel for various meetings of project participants	$20000.00	02/04/2013
TOTAL COST		$97615.00	

8. Risk

8.1. Project Risk

Risk Description	Risk Impact	Risk Probability	Risk Mitigation Approach
Data Accessibility: Unable to access desired data due	Inability to use desired data elements in analysis.	Medium	Identify potential data sources as early as

Risk Description	Risk Impact	Risk Probability	Risk Mitigation Approach
to propietary/confidentiality constraints			possible so if there is a process involved to gain/grant access to data sources, there is ample time to follow process/engage others.
Level of Measurement: External data source is not at the desired level of measurement, which would be by site/day.	Analysis for these measures would have to be at a higher level, possibly by state or month.	High	Due diligence in getting source data that is at the desired level of measurement. Alternatively, combining analytic methodologies to be able to incorporate source data at different levels of measure. Will need to consult with statisticians should this occur.

9. Supporting Documents