

Proposal for Funding made to:
Atlantic Coast Cooperative Statistics Program
Operations and Advisory Committees
150N. Highland Street, Suite 200 A-N
Arlington, VA 22204

Electronic Trip-Level Reporting for the
Potomac River Fisheries Commission
Commercial Fisheries Sector

Submitted by:
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Potomac River Fisheries Commission
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Applicant Name: Potomac River Fisheries Commission

Project Title: Electronic Trip-Level Reporting for the Potomac River Fisheries Commission (PRFC) Commercial Fisheries Sector

Project Type: New-Pilot-Future Maintenance Project Request Suggested

Principal Investigator: Martin L. Gary

Project Manager: Martin L. Gary

Requested Award Amount: \$263,711.94 for the year one Pilot project. This is intended to evolve to a maintenance project in order to scale both participation and supporting IT infrastructure.

Requested Award Period: For year one pilot, beginning after receipt of funds in 2021 through 2022. Intention to evolve to a maintenance project.

Original Date Submitted: June 15, 2020

Revised Date Submitted: August 17, 2020

Objective:

To establish a PILOT program to report trip-level catch and effort data, using the ACCSP eTrips tools, from Commercial license holders who fish within the jurisdiction of the Potomac River Fisheries Commission (PRFC) beginning in the 2022 season, which begins in July 2021 for the FY22 licenses and January 2022 for the CY22 licenses.

Need:

ACCSP and its partner agencies have established the collection of trip-level data as the standard which all agencies should strive to reach and maintain. Over 60 years ago, PRFC began collecting catch and effort data from commercial shellfish (oyster and crab) and finfish permit holders, which are submitted weekly. Storage of the data in electronic databases has taken place since the late 1980s. Since that time, more details regarding the catch have been collected in terms of targeting specific locations, species, and gear. The data are reported at the trip-level on a daily basis, and are submitted weekly to PRFC and provided to ACCSP twice annually for the previous calendar year.

The proposed project will work to increase the use of census-style reporting by expanding the use of ACCSP eTrips technology among a group of PRFC Commercial license holders and evaluating the efficacy of this method compared to traditional methods.

Participating license holders will use ACCSP eTrips tools to report their catch and effort in PRFC managed waters, along with paper reports provided to PRFC to be submitted by PRFC staff also using ACCSP eTrips tools. Electronic harvest reporting has been discussed in the proceedings of meetings of advisory committees to the PRFC and the Commission itself for several years, and numerous harvesters have expressed an interest and willingness to participate. Many commercial constituents are already participating in electronic harvest reporting in Maryland or Virginia, and are eager for similar opportunities to report electronically for PRFC.

Results and Benefits:

Trip-level reporting to collect catch and effort data from commercial permit holders - harvesters is a goal for all ACCSP partners. On average, on an annual basis (Table 1):

Table 1: Average Count of License Holders and Daily Catch Reports for FY19 & CY19

Gear	License Holders	Daily Catch Reports
Oyster	215	300
Crab	432	11,500
Fish	742	14,000

Presently, the PRFC staff collect, organize, validate, obtain corrections, and enter the catch data for each License Holder, which is a rather labor intensive effort that potentially induces errors and is time consuming; therefore, the data stored and available for decision making reports can be lagging. The anticipated benefits use of ACCSP eTrips are faster data entry with less errors and less staff hours required.

Data Delivery Plan: PRFC will continue entering catch data into the current custom designed Microsoft Access Data Management System that has been in use for many years for ALL of the catch data records that are NOT being entered directly into ACCSP eTrips by the commercial harvesters or the PRFC staff. The PRFC staff will be entering catch data for some of the paper reports that are submitted to PRFC by the commercial harvesters (see Task 2 in the Approach).

PRFC will continue transmitting data twice per year for all catch reports submitted for the prior year but excluding the records that have been entered into ACCSP eTrips.

After the first year of using ACCSP eTrips during the Pilot Program the goal is to have all PRFC catch data reports entered into ACCSP eTrips either by the commercial harvesters or by PRFC staff and thus the twice per year upload will no longer be necessary.

Approach:

The long-range goal is to move away from the current Microsoft (MS) Access databases and Operator interface code that require all license issuing and catch data reporting performed by PRFC staff.

To achieve this goal the first phase during Year 1 will be to:

1. Task 1 – Months 1 & 2: Identification of **commercial harvesters** to participate:

Initially, the goal is to have at least 10% of the commercial harvesters (License Holders) participate with submitting their catch reports using ACCSP eTrips. The commercial harvester community is comprised of a mix of limited entry and open access fishery participants. Though the number varies year to year, approximately 1,400 commercial harvesters are candidates, and based upon the most recent license metrics, the target would be 10% = 140 participants in year one for ACCSP eTrips. The initial participants will be volunteers. This would provide a reasonable sample within each Gear category that is manageable for the purpose of learning how to use the ACCSP eTrips tools, developing training guides & gaining feedback.

2. Task 2 – Months 2 through 12: ACCSP eTrips installation and training for **commercial harvesters** and PRFC staff. It is anticipated that on average, four (4) hours will be provided to each harvester to support on data entry, submission and use of mobile devices and software. Included within the four hours are staff hours for making presentations at meetings, developing “cheat sheet” guides, and identifying enhancements and overall process improvement. In addition to the **harvesters**, the **PRFC** staff will enter a sampling of a variety of paper catch reports into **ACCSP** eTrips:

The PRFC staff will augment the commercial harvesters ACCSP eTrips submissions to ensure a more comprehensive data set is being processed for the purpose of identifying enhancement requests for the ACCSP eTrips tools and the data can be successfully processed (downloaded, modified / corrected, and uploaded).

3. Task 3 – Months 4 through 8: Software development using MS Access to:
 - a. Download ACCSP eTrips data from ACCSP
 - b. Create an Operator Interface to validate downloaded data
 - c. Upload verified data to ACCSP

Harvest data entered directly into the ACCSP database using eTrips must also be stored within the PRFC database initially and for the foreseeable future. A unique set of software tools will need to be created to support the steps of downloading the ACCSP data, viewing & correcting the data if necessary.

4. Task 4 – Months 6 through 12: Update software as necessary to incorporate all initial requirements and fix inconsistencies (i.e., bugs):

The second half of the year will spent improving the processes of working with the commercial harvesters, data entry, and ensuring the data that has been entered into the ACCSP database are accurate. The goal is to have the data entered efficiently and accurately to reduce staff time with making corrections.

The second phase, during Year 1 will be to:

5. Task 5 – Months 2 & 3: Establish a contract with a Software Development provider company or consultant:

The long-range goal is to migrate towards a more modern database platform that is cloud or web-based, has a more consistent Operator Interface, and is able to be upgraded more efficiently. The requirements will be documented and a Vendor identified.

6. Task 6 – Months 4 through 12: Acquisition of Oracle Cloud Database. Note: PRFC will be working with ACCSP to consider database options that may be more applicable and thus provide cost saving up-front and long term during the sustainment and maintenance phases.

Along with the requirements for the Operator Interface, an approach for how to store the data will be identified. The result should be a cost-efficient solution that can be upgraded with expanded storage capacity.

7. Task 7 – Months 6 through 12: Develop web-based PRFC applications to perform PRFC office automation functions:
 - a. Process License issue and renewal requests
 - b. Print Licenses and associated tags, flags, and catch report forms, etc..
 - c. Processing paper catch reports
 - d. Reporting interface – currently there are approximately 25 unique reports with many that have sub-options
 - e. Database Utility interface – currently there are approximately 13 unique operations required to modify lookup tables, set/re-set sequencing, and perform database integrity checks and repair

After the requirements for the Operator Interface, processing, and data storage have been documented and a Vendor has been selected the effort of design and implementation can begin.

The third phase, which most likely will be during Year 2 and beyond, will be to:

8. Transition MS Access data tables to the Oracle database
9. Train and test the new interface. Prior to the complete cutover from the existing MS Access based database applications ensure that all functionality has been incorporated and performs successfully
10. Perform modifications as necessary to resolve technical problems
11. Perform updates as necessary to support new requirements

The current (historical) PRFC data will be exported, possibly reformatted, and imported into the new database system. At this point in time the two systems would be considered “functionally equivalent” and parallel testing can be conducted to ensure all requirements have been implemented. When the new system is mostly successful then the old system can be retired.

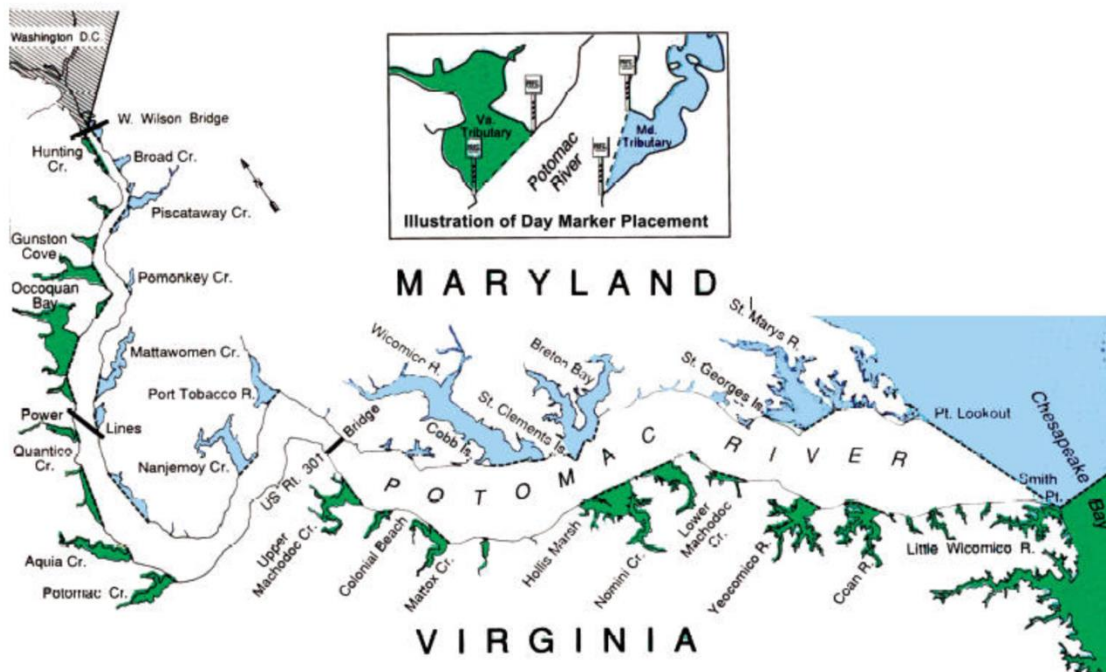
12. Increase the number of commercial harvesters using the ACCSP eTrips-tools:

The long range optimal goal would be to have 100% of the commercial harvesters using the ACCSP eTrips tools but a more realistic goal would be to have at least 90% participation by the end of the fourth year. The target for each year, starting with Year 2 would be to increase the participation by at least 30% of the total number of commercial harvesters. To facilitate the effort to meet these goals:

- i. Provide direct support as needed using PRFC staff via phone or in-person
- ii. Presentations at various Committee meetings with demonstrations and open for questions
- iii. Creating short “tri-fold” instructions specific to various topics
- iv. Creating short YouTube video tutorials specific to various topics
- v. Utilize existing ACCSP support products (e.g., videos, tech support and other)

- vi. Incentivizing future participation by using various strategies, such as:
1. Successful strategies used by other jurisdictions (e.g., Rhode Island license endorsement)
 2. Establishing a fee for having the PRFC staff perform the ACCSP eTrips data entry such as a flat fee - \$100 per License Holder per year
 3. Fee per Gear Type - \$25 for each gear type license
 4. Fee per Week per Gear Type - \$5 for each weekly report for each gear type license

Geographic Location: Jurisdictional waters of the Potomac River Fisheries Commission. From the Woodrow Wilson Bridge (District of Columbia Demarcation) downriver to the confluence of the Chesapeake Bay. Approximately 100 nautical miles.



Milestone Schedule:

Task # / Month	Project Period Month											
	1	2	3	4	5	6	7	8	9	10	11	12
T1: Identification of License Holder Participants	X	X										
T2: eTrips installation & training; data entry		X	X	X	X	X	X	X	X	X	X	X
T3: MS Access Operator Interface development				X	X	X	X	X				
T4: Software modifications						X	X	X	X	X	X	X
T5: Establish Contract for S/W development		X	X									
T6: Acquire Oracle Cloud Database				X	X	X	X	X	X	X	X	X
T7: Develop Oracle web-based applications						X	X	X	X	X	X	X

Project Accomplishments Measurement:

The results of this project will provide the basis to improve the accuracy and timeliness of catch and effort estimations, and could subsequently inform science, stock assessments, and management policies.

The results will help determine the scope of the effort to migrate to a more robust database system that is more accessible to the Commercial License Holders.

Cost Summary (Budget):

Description	Calculation	Cost
Personnel (a)		
Principle Investigator	60 hours @ \$55.50/hr	\$3,330.00
Data Administrator	200 hours @ \$20.50/hr	\$4,100.00
Data Management Specialist	600 hours @ \$11.50/hr	\$6,900.00
Fringe (b)		
Principle Investigator	14% of salary	\$455.55
Data Administrator	51% of salary	\$2,092.99
Data Management Specialist	49% of salary	\$3,401.40
Travel (c)		
n/a		
Equipment (d)		
Oracle Cloud Database:		
a. MySQL DB Services 1 instance, 31 days/month, 24 hours/day 50 GB storage 50 GB backup	\$21/month x 8 months	\$168.00
b. Java Cloud Service Enterprise Edition 1 instance, 31 days/month, 24 hours/day	\$550/month x 8 months	\$4,400.00
c. Cloud Infrastructure 1 instance, 31 days/month, 24 hours/day 50 GB storage	\$33/month x 8 months	\$264.00
Supplies (e)		
n/a		
Contractual (f)		
In-house Consultant/Developer	930 hours @ \$100/hr	\$93,000.00
Vendor/Developer	1,120 hours @ \$130/hr	\$145,600.00
Other (h)		
n/a		
Totals		
Total Direct Charges (i)		\$263,711.94
Indirect Charges (j)	n/a	\$0.00
Total (sum of Direct and Indirect) (k)		\$263,711.94

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Education

Texas A&M University: B.S. Wildlife & Fisheries Sciences
May 1985
Specialization: Fisheries Ecology

Experience

Potomac River Fisheries Commission: July 2013 to Present
Executive Secretary

Maryland Department of Natural Resources, Fisheries Service: (July 1985 through June 2013)

- Fisheries Service - Assistant Director (2006-2013)
- Fisheries Service – Program Manager for Recreational Fisheries and Outreach (1996-2006)
- Fisheries Service – Program Manager for Recreational Fisheries and Commercial Striped Bass Monitoring (1995-1996)
- Fisheries Service – Legislative Officer (1994-1995)
- Fisheries Service – Striped Bass Stock Assessment Biologist (1990-1994)
- Fisheries Service – Program Manager for Artificial Reefs & Habitat Enhancement (1988-1990)
- Fisheries Service: Estuarine Finfish Biologist (1985-1988)

Affiliations

American Fisheries Society
American Fisheries Society Southern Division
American Fisheries Society Tidewater Chapter
American Fisheries Society Estuaries Section
American Fisheries Society Invasive & Introduced Species
American Society of Ichthyologists & Herpetologists
The Interstate Shellfish Sanitation Conference (ISSC)
National Association of Underwater Instructors (NAUI Scuba certifications for: Advanced Open Water, Ice, Night, Cave, Nitrox)

References: Available Upon Request