

Proposal for Funding made to:
Atlantic Coastal Cooperative Statistics Program
Operations and Advisory Committees
1050 N. Highland Street, Suite 200 A-N
Arlington, VA 22204

Continue Trip-Level Reporting for All Massachusetts Commercial Permit Holders

Submitted by:
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Applicant Name: Massachusetts Division of Marine Fisheries

Project Title: Continue Trip-Level Reporting for All Massachusetts Commercial Permit Holders

Project Type: Maintenance

Principal Investigator: Thomas Hoopes
MIS & Fisheries Statistics Project Leader

Requested Award Amount: \$ 76,050

Requested Award Amount Including NOAA Grants Administration Fee: \$ 80,053

Requested Award Period: For one year, beginning after the receipt of funds

Original Date Submitted: July 8, 2011

Revised Date Submitted: September 9, 2011

Objective:

To continue to collect trip-level catch and effort data from all commercial permit holders in Massachusetts in 2012, a program started in 2010.

Need:

Starting in 2010, the Massachusetts Division of Marine Fisheries (MADMF) embarked on a new program to collect comprehensive, standardized trip-level catch and effort data from all commercial permit holders in Massachusetts. Prior to that, MADMF had collected catch and effort data from commercial harvesters using 19 different catch report types directed at specific fisheries. Some of the report types collected data at the trip-level, whereas some were submitted annually and summarized on a monthly basis. In 2010, thanks in part to funding from ACCSP, MADMF began collecting trip-level catch and effort data from all commercial permit holders who weren't already reporting their commercial activities through one of several federal reporting programs. Thus, all commercial harvesters in Massachusetts are now reporting trip-level data, either to NOAA Fisheries (federal-reporting) or to MADMF (state-reporting).

The state-reporting harvesters can report one of three ways: (1) electronically through the use of the ACCSP eTrips application (ETL); (2) via a spreadsheet file as an email attachment (FTL); (3) via paper submission, which is delivered by mail or fax (PTL). Because many commercial permit holders are not capable of reporting electronically or via spreadsheet submission, paper submission is their only option, and thus MADMF must accommodate handling the reports and entering the data submitted in this fashion.

This proposal details a plan, very similar to the ones submitted over the last two years, to continue funding a portion of the data entry services and associated costs to handle paper based reports submitted by Massachusetts state-reporting commercial permit holders. It is a maintenance proposal as it requests funding for activities that have been funded in the past, and it is anticipated that this type of request will continue, although with the expectation that requested amounts will diminish over future years.

Approach:

The approach to this plan is based on the following rules incorporated during 2010 to ensure comprehensive reporting by all MA commercial permit holders:

1. All MA commercial permit holders, regardless of permit type, will report all species harvested and activities (effort) conducted to harvest said species, where the harvest is landed under the authority of the MA commercial permit. Said activities and harvest will be reported to MADMF at the trip-level, and each month's activities will be submitted by harvesters to MADMF by the 15th day of the following month, with the following exception:
2. All MA commercial permit holders with vessels reporting under the NOAA Fisheries Northeast Regional Office VTR, CLAMS or HMS Logbook programs will be exempt from trip-level reporting to MADMF, as long as all fishing activities are carried out on the federally permitted vessel associated to that MA commercial permit. If certain activities are not carried out on that vessel, or if for some reason, the vessel's activities are exempt from reporting through the federal reporting programs, then the MA commercial permit holder must report those activities to MADMF.

Based on a five-year average, Massachusetts estimates issuing approximately 7,795 commercial permits in 2012. MADMF also anticipates that 15% of MA commercial permit holders will hold northeast federal permits with VTR requirements. Therefore, MADMF estimates collecting trip-level data in 2012 from the remaining 85%, or 6,626 commercial permit holders.

All data reported to MADMF will be entered directly to the ACCSP Standard Atlantic Fisheries Information System (SAFIS) database using the eTrips application, as is done with all state-reporting harvesters participating in the current trip-level reporting program. Permit holders will be encouraged to enter their data themselves, if possible. Otherwise data from paper reports will be keypunched by MADMF staff. Using current participants as a guide, MADMF estimates that 17% of commercial harvesters will report on their own electronically. In 2010, 25% of eligible permit holders signed up to report electronically, but only 17% actually reported that way. The remaining 8% submitted paper reports instead.

Trip reports in SAFIS indicate that 44% of all state-reporting commercial permit holders in MA conducted at least one commercial trip in 2010, and those permit holders averaged 31 trips per year. Thus 2,420 permits (44% of active permits minus the 17% reporting on their own), fishing 31 trips per year, yields an estimated total of 75,011 trips to be entered over the course of 2012. Information derived from data entered using the eTrips application shows that it takes, on average, 3.09 minutes to enter one trip. Assuming a similar average, this would result in a total of 3,863 hours to enter the estimated trips received in 2012, if solely using the eTrips application. As ACCSP staff are currently working on a file upload option for eTrips, it is likely this estimate would be reduced if data could be submitted in this manner. It is difficult to know at this point how much time would be saved, but a conservative estimate might be by twenty-five percent, or a reduction to 2,897 hours.

The solution used currently, where all incoming paper reports are scanned and stored electronically, properly indexed for identification, will continue to be used. These reports would then be available online to staff located in multiple MADMF facilities, not only for keying data into the SAFIS database, but also for efficient retrieval to help manage reporting compliance and audit processes. The scanned report solution has also been used to enter negative reports automatically, eliminating the need for key-punching these reports.

All paper reports will either be mailed, faxed, emailed as attachments, and in some cases, hand delivered to the MADMF Gloucester office where they will be examined visually for errors or completeness. Reports will be scanned, indexed and stored electronically, and the paper reports will be stored in batches according to received date. Incomplete reports will be returned to the permit holder to be corrected or completed. Once in the database, data entry staff will be able to retrieve the reports on their screen to use side by side with the ACCSP eTrips application to key the data into the SAFIS database.

On a biannual basis, monitoring will identify those permit holders out of compliance, and letters or emails will be generated and sent to them. Permit holders found to be out of compliance at the end of the year will not be able to renew their permits for 2013 until those requirements are met. Due to minimal resources to enforce reporting requirements during the year, holding an individual's permit for renewal is the only means of forcing reporting compliance.

Economic information that MADMF has collected in the past on annual catch reports, such as value of vessel, fuel used, value of gear and bait, if applicable, may be collected on a separate year-end form from specific permit holders.

To accommodate the volume of paper to be submitted, taking into consideration the continuation of dealer reporting, MADMF estimates the need for a total of 2.14 full time equivalents (FTE's) to accomplish the data entry portion of the tasks (0.75 for dealer reporting and 1.39 for commercial

harvester reporting). Existing (non contract) staff will provide 0.5 FTE's for data entry. These individuals are mostly clerical staff located at other facilities who can accommodate the additional work, particularly if scanned records are available electronically. The remaining 1.64 FTE's will be filled by contract employees. It is the cost to pay for these 1.64 FTE's, plus postage, paper materials and storage boxes, or that portion to handle paper based reports from commercial permit holders, which makes up the amount requested from ACCSP. All other expenses incurred to collect trip-level data from commercial permit holders, including, telecommunications and computer equipment, oversight, compliance monitoring, data auditing, outreach, website development and a portion of the data entry services, will be covered as in-kind costs by MADMF.

Results and Benefits:

Trip-level reporting to collect catch and effort data from commercial permit holders is a goal for all ACCSP partners. Massachusetts has collected comprehensive trip-level data for dealer landings since 2005, and harvesters since 2010. Besides VTR data collected by NOAA Fisheries, all trip-level data from remaining commercial permit holders in MA would continue to be entered directly into the SAFIS database, so all partners would benefit from this program. This proposal continues the effort started in 2010 to collect standardized comprehensive fisheries dependent data from both dealers and harvesters in Massachusetts, and to make that information available to all partners of ACCSP.

Although this plan only covers the activities of MA commercial harvesters, it does include the harvest of species which are managed regionally, such as lobster, striped bass, scup and sea bass. Thus regional management bodies such as ASMFC would benefit from having comprehensive fisheries dependent data from MA. Lastly, MADMF would continue to collect some economic data on the year-end report about its fisheries, such as value of vessel, fuel used, value of gear, and can be provided to ACCSP when the socio-economic modules are ready to accept data.

Geographic Location:

The location and scope of this project would cover all of Massachusetts and the adjacent state and federal waters fished by Massachusetts commercial permit holders.

Table 1. Milestone Schedule (start date depending on time of grant award):

Task	Month												
	1	2	3	4	5	6	7	8	9	10	11	12	
Data Entry Services	X	X	X	X	X	X	X	X	X	X	X	X	X

Report writing will follow the requirements of two semi-annual status reports due at the end of the seventh and thirteenth months, respectively, and a final report due at the end of the fifteenth month, depending on time of grant award. This grant period would represent the fifth year ACCSP would fund these types of activities for MADMF, and the third year at this scale.

Project Goals & Metrics:

With respect to those activities specifically funded by ACCSP, the goal of the project is to collect and enter into the SAFIS database, trip-level data from state-reporting commercial permit holders in MA

who submit a record of their commercial trips on paper forms. The goal will be met if all data as received in paper form for the twelve month period has been properly entered into the SAFIS database by the end of the project period. Overall, the goal of the MADMF MIS & Fisheries Statistics Project is to collect standardized, comprehensive fisheries-dependent data, and to make those data available not only to partners of ACCSP, but to users of the ACCSP Data Warehouse as well.

Cost Summary & Outlook on Future Funding:

The MADMF MIS & Fisheries Statistics Project currently derives its funding from both state and federal sources. In-kind support includes telecommunications and computer equipment, oversight, compliance monitoring, data auditing, outreach, website development and some data entry services. Indirect and fringe costs are included where applicable.

This proposal represents a 14% decrease from last year's proposal of similar scope, and a 34% decrease from the proposal submitted two years ago. The drop is due primarily to an increase in efficiencies submitting data to the SAFIS database, eliminating time to key-punch data, or in the number of permit holders directly entering their own trip information. The eTrips application is adequate, for the most part, as an interface for the single user, but is painfully slow, however, as an interface for partner staff entering large quantities of data. Having a file upload option should help reduce the cost of this process significantly over time. Furthermore, for those times when using the eTrips application is warranted, such as for editing trips or entering trips that may not be suitable for file upload, MADMF feels there are further enhancements that can be made to make it a more efficient application.

Lastly, MADMF has begun researching the possibility of migrating from a two to a one-ticket data collection program over the next few years. This would do away with the harvester report, and all required data elements would be collected and submitted by the dealer. Part of this is being driven by current pushback from the shellfish industry in MA which argues, with some justification, that a separate report (or ticket) from harvesters is duplicative and a waste of time. Secondly, MA will need to replace the current antiquated shellfish transaction card, which works by embossing the card number on paper transaction slips similar to old credit card transactions. MADMF intends to research the possibility of incorporating either swipe card or barcode technologies, possibly in concert with smart phones, to begin collecting effort and landings data on one ticket, not only for shellfish transactions, but potentially for all commercial transactions in MA. Despite the many roadblocks inherent with such a change, particularly with a federal collection system in the northeast that relies on a two-ticket system, MADMF feels this has the potential to streamline and significantly reduce the cost of collecting fisheries dependent data.

Table 2. Cost Summary for Trip-level Reporting from Commercial Permit Holders:

Item	Funding Source			
	MADMF In-kind		Requested from ACCSP	
	Personnel	Other	Personnel	Other
1. Contract Data Entry				
1.64 FTE's – 3,280 hours @ \$16.80 / hour			\$55,104	
Indirect (33.49 % of salaries)			\$18,454	
2. Existing Staff Data Entry				
0.5 FTE's	\$21,649			
3. Postage		\$1,452		\$383
4. Materials (paper goods)		\$297		\$1,068
5. Storage (stackable boxes)				\$1,041
6. Project Coordination (12 months at 35 hours per week)	\$49,575			
7. Website Support (12 months at 1 hour per week)	\$1,416			
8. Project Oversight & Support (12 months at 10 hours per week)	\$20,437			
Column Totals	\$93,077	\$1,749	\$73,558	\$2,492
Funding Source Sub-Totals	\$94,826		\$76,050	
NOAA Grants Admin Fee (5%)			\$4,003	
Funding Source Grand Totals	\$94,826		\$80,053	
Total Project Cost	\$174,879			
Percentage Contribution by Source	54%		46%	

Cost Details:

1. Contract Data Entry:

1.6 FTE's at 40 hours per week for 50 weeks = 3,280 hours
Indirect is required by law in Massachusetts for contract employees.

2. Existing Staff Data Entry:

Average salary of 6 individuals = \$43,298 x 0.5 FTE's = \$21,649

3. Postage:

From ACCSP for Incomplete Paper Reports: ~ 3% per month of 2,420 = 73 x 12 = 871 x \$0.44 = \$383
 From MADMF for Compliance Monitoring: ~ 30% per quarter of 5,499 = 1,650 x 2 = 3,300 x \$0.44 = \$1,452

5. Materials (paper goods):

From ACCSP: cost of paper goods includes blank reports at initial mailing and incomplete reports returned to permit holder.
 From MADMF: for compliance monitoring and end-of-year report.

6. Storage (stackable boxes):

Banker's storage boxes with frames for stacking.

Table 3: History of Related MADMF Projects Funded by ACCSP

Funding Year	Title	Original Project Dates	Extension Through	Funded Amount *	Description
2001	Research and Develop Plan for Implementation of ACCSP Compliant Data Collection Methodologies in Massachusetts	Oct 1, 2001 - Mar 31, 2002	June 30, 2002	\$39,691	Hired UMass contractor to help research and develop plan to collect ACCSP compliant data.
2002	Develop Strategic Plan for Implementation of ACCSP in Massachusetts	Jul 1, 2002 - Jun 30, 2003	June 30, 2004	\$36,691	Developed plan for implementation of ACCSP compliant data.
2004	Implementing Electronic ACCSP Compliant Dealer Reporting in Massachusetts	Feb 1, 2004 - Jan 31, 2005	June 30, 2005	\$186,218	Implemented mandatory dealer reporting for all primary buyers (approximately 350 dealers) in MA.
2005	Continue Implementation of Electronic Dealer Reporting in Massachusetts	Jul 1, 2005 - Jun 30, 2006	N/A	\$156,064	Second year of implementing mandatory dealer reporting for all primary buyers (approximately 350 dealers) in MA.
2008	Trip-level Reporting for Lobster Harvesters in Massachusetts (10%)	Apr 1, 2008 - Mar 31, 2009	N/A	\$33,205	Implemented trip-level reporting for 10% of active lobster harvesters.
2009	Continuation & Expansion of Trip-level Reporting for Lobster Harvesters in Massachusetts (20%)	Apr 1, 2009 - Mar 31, 2010	N/A	\$47,386	Implemented trip-level reporting for 20% of active lobster harvesters including 10% chosen in 2008.
2010	Trip-level Reporting for All MA Commercial Permit Holders	Apr 1, 2010 - Mar 31, 2011	Sep 30, 2011	\$120,162	Currently in progress, implementing trip-level reporting for all MA commercial harvesters.
2011	Trip-level Reporting for All MA Commercial Permit Holders	Oct 1, 2011 - Sep 30, 2012		\$93,175	Continue to collect trip-level data for all MA commercial harvesters.
TOTAL				\$712,592	

* Includes 5% NOAA Grants Administrative Fee (calculated the old way).

Summary of Proposal for Ranking Purposes

Proposal Type: *Maintenance*

Primary Program Priority:

Catch and Effort: 100% of all commercial permit holders will be submitting trip-level **catch and effort** data for 100% of the species they harvest except for those permit holders who will submit trip-level data to NMFS under the VTR program. 100% of trip-level dealer landings data for all species has been collected in MA since 2005. (See page 3).

Project Quality Factors:

Multi-Partner/Regional impact including broad applications:

Although this plan only covers the activities of MA commercial permit holders, it does include the harvest of species which are managed regionally, such as lobster, striped bass, scup or sea bass. Thus regional management bodies such as ASMFC would benefit from having comprehensive trip-level data from MA. (See page 5).

Greater than year 2 contains funding transition plan and/or justification for continuance:

- Decreased costs due to efficiencies submitting data to the SAFIS database. (See page 6).
- Potential for moving from a two-ticket to a one-ticket data collection system. (See page 6).

In-kind contribution:

54% (see cost table on page 7).

Improvement in data quality/quantity/timeliness:

Besides VTR data collected by NOAA Fisheries, all trip-level data from remaining commercial permit holders in MA would continue to be entered directly into the SAFIS database, so all partners would benefit from this program. This proposal continues the effort started in 2010 to collect standardized comprehensive fisheries dependent data from both dealers and harvesters in Massachusetts, a major improvement in data quality, quantity and timeliness at the time, and to make that information available to all partners of ACCSP. (See page 5).

Potential secondary module as a by-product:

Social and Economic: Economic data will be collected from permit holders for commercial operating expenses such as the value of gear, vessel, bait and fuel used over the course of a calendar year. (See pages 4 & 5).

Impact on stock assessment:

Although this plan only covers the activities of MA commercial permit holders, it does include the harvest of species which are managed regionally, such as lobster, striped bass, scup or sea bass. Thus regional management bodies such as ASMFC would benefit from having comprehensive trip-level data from MA. (See page 5).

Appendix A: Curriculum Vitae for Principal Investigator

THOMAS B. HOOPES

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Education:

Implementing a Microsoft Windows 2000 Network Infrastructure. CompuWorks Systems, Boston, MA. September, 2001.
Implementing Microsoft Windows 2000 Professional & Server. CompuWorks Systems, Boston, MA. September, 2001.
Oracle Discoverer for Administrators. Oracle Education Ctr, Boston, May, 2000
MS Project. Educational Training Institute, Boston, MA. 1999.
Advanced MS Access 97. Educational Training Institute, Boston, MA. 1998.
Advanced SQL. MIACO, Boston, MA. 1996.
GIS ArcView. MassGIS & ESRI, Boston, MA. 1995.
GIS Arc/Info. MassGIS, Boston, MA. 1992.
VINES Fundamentals for Administrators. Connolly Data Systems, Lowell, MA.. 1990.
Structured Methodology. McDonnell-Douglas, Boston, MA. 1989.
Oracle Fundamentals. Oracle Computer Systems, Boston, MA. 1989.
C Programming. N Essex Community College, Haverhill, MA. 1987.
UNIX Overview and UNIX Fundamentals for Non-Programmers. Computer Technology Group, Washington DC. 1986.

Bachelor of Science Degree, Biology, University of Vermont, December, 1984.
Bachelor of Arts Degree, Mathematics, University of Vermont, May, 1983.

Work

Experience:

Env Analyst, Massachusetts Division of Marine Fisheries.
March, 1992 – Present.

Ongoing Responsibilities:

- Leader for Division's MIS & Fisheries Statistics Project. Project is an eight person team responsible for (1) managing all information systems and technology within the agency, including network and hardware infrastructure, Oracle and other relational database applications, GIS and web site development and maintenance; and (2) collecting catch and effort data from commercial fishermen and landings data from seafood dealers in Massachusetts. Job duties also include managing multiple ongoing federal grants as the principle investigator.
- Chief information officer and lead network administrator for MA Division of Marine Fisheries. Overseas all IT related procurements, installations and maintenance of hardware and software of server, pc and telecommunications equipment at agency's multiple locations.
- Member of the Operations Committee and past Chairman of the Computer Technical Committee for the Atlantic Coastal Cooperative Statistics Program (ACCSP), a cooperative state-federal program to design, implement, and conduct marine fisheries statistics data collection program and to integrate those data into a single data management system that will meet the needs of fishery managers, scientists, and fishermen.

Major Milestones:

- Project architect and manager for implementation of mandatory comprehensive reporting

for catch and effort data from all commercial harvesters in Massachusetts. First year of implementation: 2010.

- Project architect and manager for implementation of mandatory comprehensive reporting for landings from all seafood dealers acting as primary buyers in Massachusetts. First year of implementation: 2005.
- Project manager for the conversion of the Division's licensing and fisheries statistics application for commercial fishermen and seafood dealers. Working with Oracle Consulting, the Division's older client-server system was converted to a web-based application with new features and enhanced ease of use. System was put into full production in January, 2001. A subsequent conversion to Oracle version 10g and an application rewrite was completed in November, 2007.
- Project Manager for Department of Fisheries, Wildlife & Env Law Enforcement's conversion from Banyan Vines to Windows 2000 network operating system.
- Designed and developed an integrated Oracle relational database/GIS coverage for shellfish classification areas and sampling locations. Designed and developed a comprehensive biological sampling database application for the agency's Lobster Investigations Project.

Marine Fisheries Biologist, Massachusetts Division of Marine Fisheries. November 1985 – March 1992. Primary responsibilities included:

- Collection of commercial fisheries statistics; relational database application analysis, design, programming and maintenance using R:Base on a PC platform and Oracle on a Digital VAX platform
- LAN administration using Banyan Vines for the Cat Cove Marine Lab.
- Biological lobster sampling in coastal MA waters
- Technical consultant to various projects within the Department.
- **Intern**, Manomet Bird Observatory, Manomet, MA.
May - November 1985.
- Involved in various facets of field research including land and shore bird banding, census and morphometric studies; vegetation analysis; mammal trapping and tagging; marine mammal and seabird observational studies at sea.

Biologist's Aid, Vermont Dept. of Fish and Wildlife, Swanton, VT.
April 1985.

- Assisted fisheries biologist in seining, tagging and collecting data on walleyes in Lake Champlain.

Lab Technician, Vincent Lombardi Cancer Center, Georgetown Univ. Washington, D.C.
Summer 1982, 1980 and 1979.

- Worked under the supervision of a cancer research physician to study the effects of interferon on granular monocytes and produce a tissue culture growth serum.