



Atlantic Coastal Cooperative Statistics Program

1050 N. Highland Street, Suite 200A-N | Arlington, VA 22201

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Atlantic Coastal Cooperative Statistics Program Coordinating Council Meeting

In-person Meeting

October 26th, 2016 | 10:15am

Harborside Hotel, 55 West Street, Bar Harbor, ME

https://safis.accsp.org:8443/accsp_prod/f?p=550:15:15680582875545::NO:15:P15_CAL_ID_1:1766

1. Welcome and Introductions (*Chair R. Boyles*)
2. Review and Approve Agenda (*R. Boyles*) – Attachment I **Action**
3. Public Comment (*R. Boyles*)
4. Review and Approve August Meeting Minutes (*R. Boyles*) – Attachment II **Action**
5. ACCSP Status Report (*M. Cahall*)
 - a. Program Updates
 - b. Committee Updates
6. The Universe of Electronic Reporting Efforts on the Atlantic Coast Presentation (*M. Cahall*)
7. Consider Approval of Recommendations of FY2017 submitted proposals (*Operations Committee Chair P. Campfield and Advisory Committee Chair J. Morgan*) - Attachment III **Action**
8. Consider Approval of Addendum to Memorandum of Understanding to Reflect Governance Change (*R. Boyles*) – Attachment IV **Action**
9. Other Business (*R. Boyles*)
10. Adjourn



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Atlantic Coastal Cooperative Statistics Program Coordinating Council Meeting
 August 3rd, 2016
 Alexandria, VA

https://safis.accsp.org:8443/accsp_prod/f?p=552:15:::NO:15:P15_CAL_ID_1:1734

DRAFT MEETING MINUTES

COMMITTEE MEMBERS IN ATTENDANCE

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Committee Members Not in Attendance: B. Clifford (GARFO), E. Cyr (NOAA), D. Detlor (NOAA), B. King (DC FWD), T. Nies (NEFMC), Ponwith (SEFSC), A. Risenhoover (NOAA)

Others in Attendance

Name	Title	Partner	Phone	Email
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Our vision at ACCSP is to be the principal source of fisheries-dependent information on the Atlantic coast through the cooperation of all program partners.

Tom Moore	Legislative Commissioner	PFBC	(610) 246-0664	itm314@gmail.com
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Welcome and Introductions (Chair R. Boyles)

The Atlantic Coastal Cooperative Statistics Program Coordinating Council of the Atlantic States Marine Fisheries Commission convened in the Edison Ballroom of the Westin Hotel, Alexandria, Virginia, August 3, 2016, and was called to order at 5:48 o'clock p.m. by Chairman Robert Boyles, Jr.

Review and Approve Agenda (R. Boyles) – Attachment I

CHAIRMAN ROBERT BOYLES, JR.: Good afternoon, everybody; I would like to call the meeting to order for the ACCSP Coordinating Council. My name is Robert Boyles from South Carolina. First item on the agenda is an opportunity for public comment for folks who would like to make comments to the Coordinating Council.

Public Comment

Any requests for public comment? I see and hear and feel none; so we will move down to seeking the consent of the council for approval of the agenda, which was submitted in the briefing material. Any additions to the agenda or changes to the agenda? Seeing none; we'll roll right into approval of proceedings from our May, 2016 meeting.

Review and Approve May Meeting Minutes (R. Boyles) – Attachment II

Again, that was included in the briefing materials. Any suggested changes to the meeting minutes? Seeing none; the meeting will stand approved as submitted. Two real items on the agenda, of course, are Mike's status report and then later a governance transition update. Mike, we'll begin the meat of the meeting with you, thanks.

ACCSP Status Report (M. Cahall)

- **Program Updates**

MR. MIKE CAHALL: I will do my best to keep it brief. As you can imagine, your ACCSP staff has been pretty busy. Last week on the 28th, the Atlantic bluefin tuna reporting system was integrated into the Standard Atlantic Fisheries Information System (SAFIS); thus completing pretty much the cycle for HMS on the Atlantic coast for commercial dealer reporting.

Those dealer reports are now being submitted via the SAFIS Electronic Dealer Reporting (eDR) System with a catch card add-on that was developed by folks on our staff in collaboration with Highly Migratory Species. The NOAA rule was modified effective on the 28th, requiring that SAFIS eDR be used.

Previously, for those of you who aren't familiar, these reports were all faxed in and then manually keyed. This will greatly speed HMS's ability to process and manage their data, as well as aid their ability to fulfill their international data requirements. Moving over to recreational data, we had a for-hire workshop that was in May that actually was in this building across the hall a little ways.

We had 36 representatives from state/federal partners in both the Atlantic and Gulf of Mexico. Really, the goal was to look at what was going on in for-hire reporting; where did we have duplication, where were things working well, where were things maybe not working quite so well. Looking at what the current programs were looking like, and how we might move forward into electronic reporting and how

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we would get from Point A to Point B. We have a report; there is a draft report that has already been completed. We look to be able to release that report in coming weeks; along with the for-hire inventory.

I know that at some of the council meetings, there has been a good bit of confusion about exactly who's doing what, and we hope that we'll be able to help to clarify that for folks, in part, with this for-hire inventory and additional information that we expect to be able to provide soon. Our tablet reporting tools, eTrips/mobile has been completed and rolled out in all three of the primary platforms that are used for tablets.

If you have an iPad or you have an Android or you have a Windows tablet, or even a Surface. You would be able to report your eTrips on our mobile platform. The VTRs now are designed to automatically be submitted right to GARFO, so that anyone who submits a report that has a federal requirement; those are automatically going to go to GARFO; and any states that are already using existing eTrips can very easily switch over to using the Mobile tool, since it all goes to the same database and is retrievable in exactly the same ways.

We're working with individual states to develop plans to provide support and also looking at options for providing coastwide support for the electronic reporting rollouts for the federal fisheries. There is a lot going on there, and we'll have more information for you all on that. As the demand for the tool rises, the issue of who's going to issue passwords, who's going to deal with the technical issues, and how are we going to work towards making sure that the folks that have to report have the information that they need and the software that they need to do that.

We're getting very good cooperation from GARFO. There are a number of different pieces that are already in place that we're looking to pull together, actually, in the next few weeks to present a more comprehensive support plan. The eDR swipe card tool has been completed. Massachusetts has been deployed.

I think there is only a handful of dealers that are currently using it, but it is in production and ready to go. The Maine tool is also completed, which should have gone in production a couple days ago. We are still in bug fix mode probably for those; as they get more and more widely used, we expect issues to continue to arise.

The Maine tool still includes compliance monitoring and compliance components; therefore, we still have some more work to do in terms of working out how the collaboration is going to work for compliance, where we have overlapping areas of responsibility. But those issues have been referred to our Commercial Technical Committee, who has that on the agenda for their next meeting.

In terms of working directly with the Greater Atlantic Region, we have been doing a lot of direct coordination with them, in conjunction with both their visioning project and our SAFIS Visioning Project; and the good news is we have convergence. We have come to the same conclusion that they have, which is very good.

The working groups have become very collegial, indeed. We are looking to work with GARFO to assume much of their data warehousing function that they do now in-house and potentially integrating the GARFO VTR's into our server farm. Initially, the tentative plan at this point is to bring the VTR system down as it is, with the folks at GARFO continuing to operate it as is; while we work on the design for the new VTR system, which will essentially become a revised version of SAFIS eTrips.

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Whether there is online component or whether it is a tablet component, or whether we may also present an API, a programming interface to the internet; so that anyone who wants to write software would be able to do that, we expect also from GARFO -- they have made available to us probably two FTE's as contract support, as well as funding to acquire additional equipment and resources to increase our capacity.

Step 1 is doing a capacity study, so we're looking at what the need is in GARFO so we have a clear understanding of how much data storage and how much throughput is going to be required, after which we can do a delta analysis on our existing infrastructure and go ahead and start to acquire any additional equipment we may need.

In terms of the Data Warehouse, we have finally finished the biological database redesign; and we're working towards getting the database deployed. Along with that will come an upload component that I know that Julie Defilippi was working on earlier this week; and we're working specifically with bringing in herring data, which is a commission sponsored project, actually.

The query system is almost finished. I have looked at it and have been very impressed. Everybody who has been testing it seems very happy with it. The catch effort component is complete. We are in round two of testing, so we're past beta. We're in the beta test phase for catch effort, and we're getting ready to complete the development of the recreational piece, which will replicate the existing functions that we have for displaying the MRIP data.

Things like the bag limit analysis will continue in directed trips; those will continue to be available through our query interface. We expect this interface to be available within the next month, which will allow us to shut down the interfaces that are currently in use; and achieve, by the way, a cost savings of between 12 and 15K per year on Oracle licensing for those tools.

Of course, we will be working with the states that depend on that interface; many of them use it to pull previous day data from SAFIS that are used for quota and compliance monitoring. That is our Number 1 priority during this transition, to ensure that they continue to be able to do that. It has proven to be an unexpected benefit when we developed some of the tools.

We didn't even realize folks were doing it, until we started really doing an analysis of how the system was being used. But we will be working very hard to make sure that there is no break in that capability. APAIS is going so smoothly that I really keep wanting to pinch myself, because I can't believe it.

We are now in Wave 3. Waves 1 and 2 were completed fairly successfully; with a few bumps; in part, because we were digging deeper into things, I think, than things had been done before. A few anomalies with datasets and some issues with occasional formatting and things, in terms of data being transferred back and forth; and of course, the inevitable start-up issues that you have when you're cranking things up that are new out in states. There have been a few personnel issues that were resolved very quickly out in the field. We have a couple of issues with captains being unwilling to report or to talk to the interviewers. We have a few sites that are refusing to allow the interceptors to come in; but I think that those also will be resolved over time. The data delivery and Wave 3 report were completed and delivered on time. We're working now to have a follow up meeting to go over the Wave 3 report.

We're able to provide much more detailed information. We have automated most of this process, and we've been able to build, because of the data processing capabilities that we have as an Oracle data shop. We've been able to translate virtually everything into an Oracle database; where we're able to much more rapidly review the information that comes into us, make changes, and provide it back out to the states.

We've built a custom interface that allows the state field biologists to know exactly what's going on and be able to review the errors as they come up. I think that it has greatly speeded up our ability to process. We processed 10,000 intercepts in Wave last month. It has been pretty impressive. Wave 4 is obviously rolling; and we're not really encountering any significant issues. We do have an in-person Wave meeting scheduled in late October.

Right now, we're looking to see that in Baltimore. I really think, especially given the size and complexity, that the amazing levels of contribution and cooperation that we've had from all the states and from NMFS; and the really hard work and dedication on parts of our staff here, has really made this go, and it's really working very well. I am really pleased, and I think you all should be too; any questions?

CHAIRMAN BOYLES: John.

MR. JOHN CLARK: Thanks, Mike. The APAIS, just from our perspective, is going great. I was just curious as to whether there is any plan now that it's not being run by NMFS, to move from paper to electronic? I mean, I'm just wondering -- it seems so 1970s, the paper comes in and it's FedExed to ACCSP every month; it's kind of old fashioned.

MR. CAHALL: It's FedExed every day. Yes and no. Here is where we are. There is a tool that was developed by the previous contractor that can be used; that is being evaluated right now by NOAA S&T. However, also, as part of the South Atlantic Pilot that ACCSP is paying for, for for-hire trip reporting, there is a validation component there that is essentially the APAIS intercept.

The contract calls for the contractor to build a tablet-based tool to record the intercept and transmit it to us. One way or the other, we should have something available that works in the next, I'm going to say 12 to 14 months. How we would go about adopting it and putting it into practice, we would have to work out with the folks at MRIP.

But I agree with you. The other thing is that when we built all the Oracle interfaces, they are designed to accept data; so that the data from the tablet could plug directly into the existing Oracle infrastructure that we built. It would cut our processing time, I'm going to say 60 percent. I agree with you completely, and we're looking forward to seeing a solution.

MR. JASON McNAMEE: Mike, thank you very much for all of the updates; good information. My question has to do with the new interface for the warehouse. In Rhode Island a lot of the stuff that we're using is pretty operational for what we've got going on. I just want to make sure, well my question is, is there a way we can be proactive, reach out to you guys first or just be patient and wait for you folks to contact us; just to make sure everything is set up to make us fairly seamless.

MR. CAHALL: The short answer is we're going to do whatever it takes to make it seamless. We are absolutely aware of how important the ability to pull data directly out of SAFIS the next day to do your quota and compliance monitoring is. We're in routine communication with most of the folks that are

doing that in any event. I would guess, I don't have the list of testers right in front of me, but I would be really surprised if a few of your folks aren't on that list. We think Nicole is.

MR. BRANDON MUFFLEY: I just have a question on the tablet reporting and just wondering what the process or what the requirements are for states to get involved and start utilizing the tablet software.

MR. CAHALL: Ask. You guys are already pulling data from SAFIS anyway for other purposes. It would be relatively a straightforward process for us to work with you to get stuff setup. We already have all the reference points for New Jersey, anyway. I'm pretty sure that it would just be a matter of establishing accounts for your fisher folk and passing out tablets at work.

MR. MARK ALEXANDER: Mike, in the past, SAFIS -- you've kind of deployed state specific implementations of that. With eTrips Mobile, is that built in such a way that you can sort of put a state specific skin on it and tweak it for any special tweaks that a state may need? Has that been facilitated to make that process easier?

MR. CAHALL: Absolutely. The system knows which jurisdiction you belong to by the permit that you select when you log into it. Then it uses that to display whatever the appropriate -- we turn some data elements on, some off, some lookups are a little bit different. For example, the species that are available to individual states sometimes vary based on your collection requirements. Our intention is for eTrips Mobile to remain a single tool that is smart enough to know the difference between the data we might collect in Connecticut versus what we might collect in South Carolina.

CHAIRMAN BOYLES: Further questions for Mike on program updates? Mike, you can go to Committee Updates. Absolutely, Pat.

- **Committee Updates**

MR. PATRICK A. CAMPFIELD: To start with, the Operations and Advisors Committee met in mid July. The main purpose of their webinar meeting was to provide an initial review of the FY 17 proposals to the ACCSP RFP. Fourteen proposals were submitted in combination, maintenance and new proposals, including the ACCSP Admin proposal.

In total, the initial requests were about 3.7 million dollars, exceeding the amount of funding available. There was a healthy amount of discussion and comments made by both the Operations and Advisory Committees during the call, and those comments were recorded as well as other comments; submitted and sent to the PIs for their consideration and potential revision to proposals when submitting final proposals, which are due the middle of August. During the Ops and Advisors webinar, several members of the Recreational Technical Committee realized that the proposal that they had submitted for the past number of years, I think 14 years, for headboat observer sampling was not submitted. There was a good deal of discussion, including leads by the state of Florida about the implications of not submitting a proposal and potentially receiving funding to do additional headboat trips in the next funding cycle.

Ultimately, the Operations and Advisors agreed without objection to request an extension to you all, to allow for this proposal to be submitted at the final deadline. The majority of Coordinating Council responses were in favor of allowing this extension for the Recreational Technical Committee, so in response to that, the Rec-Tech Committee had a call just last week and decided to submit a multi-state proposal, again, to put in for headboat observer sampling.

On the Bycatch Committee, just a couple of quick items, they have completed their prioritization matrix, which has been under redevelopment for some time and will begin testing here in August. They also are continuing development of the bycatch sampling program inventory, which will be available later on the ACCSP website.

From the Biological Committee, they are updating their matrix with the column holding resilience values. They are updating that using information from NOAA's productivity and susceptibility analysis tool. Also, the Biological Committee identified representatives from their group to participate in a new Standard Codes Committee, and they also are putting together an inventory of biological sampling programs along the coast.

The contact, the Commercial Technical Committee had a call in early May to discuss seafood traceability with a group that has been working in that arena in the Gulf of Mexico. It was very much an exploratory discussion, as that issue has been brought to ACCSP's plate. Also, Com Tech had a discussion of how permits should be linked for individuals, corporations and vessels.

Apparently, there have been some issues where the same individuals can report on their own, or they are also a member of corporations, and issues with log-ins when it comes to tracking permits among our databases. Part of that discussion included evaluating what defines a SAFIS participant across all of our partners.

Com Tech is currently drafting a requirements document to bring to the committee relative to permitting. As I mentioned relative to the other committees, there is a new ACCSP Standard Codes Committee. It used to be a subcommittee of the Commercial Technical Committee; but they've decided to separate that out to have representatives from each of the committees, like Biological, Bycatch and Com Tech.

They had their first meeting in July, and identified leadership; Eric Hiltz from South Carolina and Connie Lewis from Maryland. Some additional background, I think I touched on this, but the purpose of standard codes is to develop and maintain standardized codes for all the Atlantic Fisheries data that comes into ACCSP. Their initial meeting was to establish a separate group, their scope of work expectations, and again identify new leadership. Those are the quick committee updates.

CHAIRMAN BOYLES: Questions for Pat on committee activities? Cheri.

MS. CHERI PATTERSON: Maybe this is more appropriate under other business, but I think that we need to question further or discuss further about the decision to allow the Recreational Technical Committee to submit a proposal outside of the deadline. This is precedence, this has not happened before. This is something that we, I think, ought to think about.

If we want to be allowing this in the future, then I think we need to make this known in the funding decision document and have some parameters about that. That being said, we need to come up with a reason why, I think, so that we're not questioned; why we decided it was okay to go beyond the deadline. I think at some time in the future this might come back to us, and we might not be happy with the results in the future.

CHAIRMAN BOYLES: Good point. I will say, the question was put to us by staff about whether to allow this. I think Pat indicated that the majority of the respondents indicated yes, let's go ahead and do this.

We can certainly talk about it, but my sense of things is the decision has been made, there are timelines associated with it. Recognize that it's potentially precedent setting. I'll tell you from my perspective; I did not weigh in, as Chair.

I wanted to hear and see what the conversation was about, and where folk's positions were. In my estimation, looking at the affirmative, allowing this to proceed, the affirmative vote of the Coordinating Council via e-mail, plus the implications of not moving forward and saying, Rec Tech you're out, you know you've missed the deadline. It is certainly not the perfect solution, but I think it's a decision that I can certainly abide by. Are there other comments from the Coordinating Council on Cheri's point.

MR. MUFFLEY: We submitted comments and we supported moving forward, but we did so reluctantly; based off of Cheri's sort of comments, because one of the justifications was the importance of the information that is used. But all of these proposals that come before ACCSP, we approve them because we think there is value and great information that is being collected out of these.

How do you make that decision, in terms of when it's okay to submit something past the deadline or not based off of its information? We struggled with it in New Jersey, and we ultimately said the information is important; so we allowed for it. But I do agree that if someone is late by a few days submitting a proposal, how do we continue to go about doing it? I don't know if we need to set up specific policies or not. But I think it does open up a potential issue, and like I said, we did support it, but we did so reluctantly.

CHAIRMAN BOYLES: Other thoughts? Mark.

MR. ALEXANDER: Yes, I, too, reluctantly agreed to do that. The thing that made me want to allow it is just concern over the potential negative consequences of poor catch estimates for the for-hire fishery and the implications that has on states and quota management and all that goes with that. Again, reluctantly yes, but I wouldn't want to see it happen again.

CHAIRMAN BOYLES: Further thoughts? Mike.

MR. CAHALL: As most of you will recall, we do have an action to review the funding decision process; to make some adjustments to allow for a little bit more subjectivity in the judgment process. We could add language that might address this particular issue as we do that; since we're going to be looking at the process anyway. In my experience with the program, I think this is the first time that we've ever allowed one. But also, there has never been any question that the Coordinating Council has the final say, and in fact, in the Transition Document we restate that that the funding that is allocated to the program, the council controls.

I think we could, certainly maybe Cheri, you could suggest some language we might want to incorporate. I'm not suggesting that you are drafted onto the panel to redo the funding decision process, but since you bring it up, maybe you have some idea of language that we could integrate into the process.

MS. PATTERSON: Yes, not off the top of my head, because, of course, I presented another option. I was a dissenter, fully realizing that this was absolutely needed data. But I also came up with a possible other option to allow this to move forward. I suggested putting it under the Admin budget, considering it was benefit to all the states.

It would be like anybody else would be able to adjust their own pre-proposal during this timeframe. If you can adjust a pre-proposal, this could have been tacked onto anybodies pre-proposal to that perspective; and I was thinking Admin budget could have tacked this on. Then it wouldn't have come under this sort of precedent scenario.

It would have been understood that it was tacked on to another pre-proposal that did meet the deadline. I guess maybe I can start to frame up something and then bring it to the Executive Committee or the Quick Response Committee, or whatever it is going to be called. We could have that discussion and bring that forward to the Coordinating Council at the next meeting.

MR. CAMPFIELD: Along those lines, among the responses from you all was yes, we're okay with allowing an extension; but what will the corrective action be to make sure this doesn't happen next year, or to other proposals in the future? On the Rec Tech call last week, I asked them all, and they said, a couple of things. They will make sure that they have their typical spring call, which they happened to not have this year; which was part of the reason for the omission.

Then the staff would make a special note of it, too. I think they sent out the RFP this year to Rec Tech, among the other committees and ACCSP partners. But those two mechanisms would be employed again next year to make sure that we don't run into the situation, at least with the Rec Tech proposal.

CHAIRMAN BOYLES: Cheri, I suggested we draft some language that we could bring back to the Executive Committee, maybe in October; any objection? Mark.

MR. ALEXANDER: I'm a little puzzled about what this language exactly is going to do. I'm not in favor of amending the Funding Decision Document that would insert some wiggle room in there for people to be late in the future. I don't think we should do anything. I think the rules should stand as they are. The Coordinating Council gave their voice on this special exception, but I don't think we should entertain any means of allowing or allowing and penalizing late proposals in the future.

MS. PATTERSON: Well, I think we need to justify this somehow, or have language indicating why the states justified this one incident; because it can happen again. Are we going to continue to say yes to everybody that comes forward with a late deadline, or are we going to say no to others just because we want to say no; you know, without any sort of justification?

DR. WILSON LANEY: Well, it seems to me, we've heard around the table that the primary justification for folks agreeing to this on a one-time basis was to make sure that that 14-year time series of very important and critical data got maintained. From my perspective, it is in the rules that there is a deadline. If you miss the deadline, your proposal doesn't get acknowledged or reviewed.

We made a one-time exception for what I think are very important reasons that I've heard from other members of the Coordinating Council. Maybe, Cheri, it would be sufficient if we go on record at this meeting and say, here is why we did it. We did it one time and that's it. It won't happen again.

CHAIRMAN BOYLES: I want you all to think back to September, 2008. It sounds kind of like Rec Tech was too big to fail. In all seriousness, I think Cheri; my sense is that we recognize the special circumstances, unique circumstances that surrounded the failure to submit a proposal in on time. It might have had to do with some structural issues, in terms of the scheduled meeting, as Pat pointed out in the springtime.

Again, my own thinking on this, I think we all held our nose and went down this road and said well, okay, the data is extraordinarily important. From my perspective quite frankly, as Chair, I am all for the rules; please don't misunderstand. But I thought in this one case, kicking them out and saying no, you've missed your opportunity, sounded a little too legalistic vis-à-vis the data and the importance of the data that we used that for.

For the record, I think we've established here that none of us were very happy about how we've arrived here. I would encourage us to use this as a learning process and a learning opportunity. I think we all learned something; I certainly learned something from it. We will note for the record that this was, as Dr. Laney suggested, a special exception; unless there is another suggestion on how to deal with this. I see none, so we'll take that by consent. Thank you, Wilson, for that suggestion, any other questions for Pat or discussion? Jay.

MR. McNAMEE: Just a quick question, Pat. Thanks for the update. I was curious about your seafood traceability. It seemed to imply you were just kind of checking it out, which is always good. But are there plans to extend, take what you've learned from that experience and do something here with it? What are your plans with that?

MR. CAMPFIELD: I'll pitch it to Mike and put simply to start with, I think back a year or two ago the commission, or all three coastal commissions were asked to testify on the Hill and seafood traceability was one of the things that they wanted us to comment on. It hasn't been an activity, at least coastwide for the Atlantic. The Gulf has delved into that, and so ACCSP seemed like a potential starting point, but I'll pitch it to Mike for adding on.

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MR. CAHALL: Sure. As a little background, I get pinged on fairly regularly about seafood traceability by various and sundry other folks who are trying to make money off of it. Recognizing that there is some potential benefit to industry, it is really hard to say hey, we don't want to have anything to do with it. I think it was brought up to the Executive Committee last year. We mentioned that we were getting pinged on, and the decision was that the program itself wouldn't really adopt the position on seafood traceability, but we would go ahead and do a little investigation to see what would be involved.

From a purely technical standpoint, providing the data to the traceability people is very easy. But there are many, many, many, policy issues that would have to be resolved in order to provide what is potentially confidential data to a third party. Now, to be honest, we have a few people who are doing traceability already with our data.

But they are pulling it themselves; and providing it directly to the vendor themselves, which we can't stop them from doing, pretty much. Beyond that, that is all we've done. We did some preliminary looking. We were looking at what might be involved, and how it would look from our end to do it.

But right now we don't have a compelling reason to implement it, and it seems to me that this is something that we as a program would have to consider as a whole. If it were brought to our attention, or one of our committees felt that there were really compelling reasons to move forward, certainly from a technical standpoint we could. But again, the policy implications are significant.

Governance Transition Update (R. Boyles)

CHAIRMAN BOYLES: Further questions for Patrick? Okay, Patrick, thank you. The next item on the agenda is a Governance Transition Update. Let me update you all on where we are, I'm going to ask

Bob to help walk us through some things. Given the rather vibrant discussion this morning, I decided to simply hold off on the Executive Committee meeting today; so that we could ensure that we got to Striped Bass and the other critical things today. I hope you all will bear with us here.

In addition, some of the governance transitions documents you just received relatively recently. I will tell you we had a work group call ten days ago, two weeks ago, to go over some of these things. I would like to pitch it to Bob to walk through, to give you a sense of where we are. Bob, we are on the schedule to discuss this at the Business Session tomorrow for the commission.

But given the fact that maybe some of you are just looking at these documents, maybe for the first time this week, what I would propose is that we go over and have Bob and Mike go over where we are with respect to the transition documents. But you go home and marinate over these things.

I would respectfully request that we be prepared to act on them at the annual meeting in October, if that's a reasonable timeframe. Any concerns with that proposed timeframe? Seeing none; then that will be the plan. Bob, I suspect I need to talk to Doug as well on the commission side. But we'll need affirmative action from the commission, as well.

Again, I would propose that same timeframe for a final action on the commission side in October. With that, that is the timeframe. As I said, we have had the Governance Transition Workgroup that has met by conference call some time ago. We went over a document that Mike and Bob had put together, and so what I would like to do is pitch it to Bob. It is in the materials that were submitted as part of the mail-out. Bob.

EXECUTIVE DIRECTOR ROBERT E. BEAL: Given the sort of time of day and level of hunger and level of fatigue, I'll go pretty quickly here. As Robert mentioned, there are two documents that the working group developed. One is titled ACCSP Transition Document with a date of July 26, and then the other is a draft MOU change with the date of July 8th on it. I'm going to start with the Transition Document.

It really is essentially the road map to how we're going to go through the transition process of incorporating ACCSP into ASMFC as one of the programs under the commission umbrella. The document, very quickly, goes through the introduction and provides, I guess, five bullets on what the anticipated benefits of the governance change will be.

Integration of the staff and the science and management programs, visibility, legislative outreach efforts, consistency of staff policies, supervision for the ACCSP director, and then it goes on to talk about general concepts. I think the first general concept is pretty straightforward. ACCSP will be fully integrated into ASMFC. However, it is going to still maintain its sort of identity and branding as a program.

There is still going to be an ACCSP website, there is still going to be an ACCSP letterhead and a number of other things. It is still going to be its own separate sort of corporate branding within ASMFC umbrella. The rationale for that is that there are a lot of folks that are used to going to ACCSP for data; and there is no reason to change it to the ASMFC Data Program or whatever it is. I think maintaining that branding seemed to make sense to us.

The outreach efforts will be continued, obviously for ACCSP and informing stakeholders in the capability and the resources available through ACCSP. The document talks a little bit about integration and

coordination and cooperation between ACCSP and ASMFC outreach efforts; and I'll talk about that a little bit more in a minute.

Then the third paragraph under general is pretty important, which is under this governance change the committee structure membership will not change significantly. We don't envision, and the working group didn't envision significant, wholesale changes to structure of the Coordinating Council, Operations Committee, Rec Tech, Commercial Tech, and all the other committees that are there.

Those groups will be generally maintained. I'll talk about the Executive Committee in a little bit, because there is some discussion on; is there really a need for an ASMFC and an ACCSP Executive Committee. Then the document on the second page goes on to start to break down the tasks and the changes into short term, medium term and long term.

I'll quickly go through those. The first couple bullets under short term are integration of the director of ACCSP and staff; and really, that's been going on and is already completed. Coordinating Council composition remains the same, continued focus on budgetary and data policies. The document then discusses that the Coordinating Council be responsible for spending decisions of money allocated to ACCSP. Once money is given to the ACCSP program, this is a group that's going to chop up that money and decide where it goes. There is a note that ASMFC Executive Committee is the group that will determine ACFCMA allocations; that states the concurrent of NOAA Fisheries, we can't do that individually, since it is federal dollars. But traditionally NOAA Fisheries has followed the recommendations of the Executive Committee. This isn't new, this is how the Atlantic Coastal Act dollars have been allocated since 1993 when the program was first funded.

Really, that's a decision between how much money goes to the Commission, the states and to ACCSP. That won't change. The FIN decisions on how much FIN money will go to ACCSP still will continue at NOAA Fisheries, and that won't change. There is a discussion about the fourth primary bullet there; ACCSP, and then there is a parentheses with a bunch of different committee names.

This is kind of the group formally known as the Executive Committee for ACCSP. We haven't really figured out what we want to name it yet; Management Committee, Leadership Committee, Policy Committee, Oversight Committee, Interim Action Committee, Quick Response Committee, all these names have popped up.

But we want to differentiate the Executive Committee notion somehow. That's still a work in progress. The document goes on to characterize the membership of this committee; and it's very similar to the current ACCSP Executive Committee. Three state representatives from the region, Chair, immediate past Chair and Vice-chair, and then it goes on to talk about some of the details on how those seats would be allocated and the federal representatives and one council representative.

It gets a little complicated if the NOAA representative, for example, is the Chair, then we would find another regional state representative, so that we have consistent and complete state representation across the regions; as well as the federal representation, and one council representative. John Carmichael serves that role now.

The document wraps up this portion by saying, it's a quick response team when the Coordinating Council is not available, or it is impractical for them to get together. The workload of this group will be very

similar to what the Coordinating Council does, but it will be only used when we couldn't get the full Coordinating Council together, either face-to-face or via conference call.

The Director is going to provide semiannual updates to ASMFC Executive Committee. One of the main reasons for this governance change was to get the state directors fully engaged in ACCSP, and providing updates at the Commission Executive Committee is seen as a way to do that. Hopefully, the state directors that serve on that committee will engage and update or stay up to speed on all the activities of ACCSP.

The final bullet is approve an addendum to the MOU. As I mentioned, the second document that is here is the draft addendum to the MOU; which I'll talk about a little bit more in a minute. Medium term, 6 to 12 months from now; we'll look for staff efficiencies at the technical and administrative levels. We'll talk about the ACCSP and ASMFC outreach efforts.

Are there ways to integrate our two sorts of separate but somewhat coordinated outreach efforts for efficiency. Then there is some very sort of detailed in the weeds information about, should ACCSP.org e-mail addresses be phased out, and should new staff that comes on to ACCSP be given ASMFC.org e-mails and those sorts of decisions. We can probably do that through aliases and all sorts of other IT things that I don't fully understand. But I've been told it's not that hard.

Going on to finding ACCSP-based solutions to ASMFC management and science data needs, the notion here is that there are questions that come up in data needs and quota monitoring, and a number of other things that happened at ASMFC. We just want to make sure that ACCSP is the go-to group to answer those data needs.

Update all the ACCSP SOPs to be consistent with the way the commission operates. If folks remember, at the last coordinating council meeting we approved, I don't know, a whole host of SOPs, I don't know a couple dozen of them over the last six months or so. Those will be sort of looked at and determined if some of those are redundant. We can then do away with them.

If some of those need to be modified, we'll modify those to be consistent with the commission process; and consistent with this governance change. Long term is over a couple years, and that is really kind of the strategic level of planning. As luck would have it, ASMFC and ACCSP have strategic plans that both sunset in 2018.

After 2018 we can merge those two strategic plans and add a goal likely to the ASMFC strategic plan that incorporates the ACCSP needs, so we can be all kind of working out of the same hymnal, hopefully. ACCSP will fully participate in the commission's action planning and budgeting process.

There is talk about the administrative grant, is there a need to have a separate administrative grant for ACCSP and ASMFC? Is there a way to kind of merge some of our funding vehicles to make reporting and moving around dollars simpler for NOAA Fisheries and for the commission staff?

Go back and look at these changes. Were the desired effects realized? Is ACCSP -- are we doing better with lobbying on Capitol Hill, are we doing better with keeping the state directors engaged or the staff integration full and complete? Those are the short-term, long-term, medium-term changes.

Our vision at ACCSP is to be the principal source of fisheries-dependent information on the Atlantic coast through the cooperation of all program partners.

The second document that I don't want to spend a lot of time on, which is the MOU, gives a fair amount of history leading up to this and really captures some of the changes that were made in previous addenda to the MOU. If you go into Page 4, that is really where the meat of it, Section 8 of the original MOU is going to be modified by Paragraphs A, B, C and D.

I don't think I need to go into each of these in the interest of time here, but it's coordinating council structure, Ops Committee structure, what the functions of the ACCSP Director are, and how that person will interact with ASMFC staff, and then the last one is ASMFC support to ACCSP. Again, you guys can read those, it is not a final decision for today; but that's the quick summary and probably I talked more than I should have, Robert, so I apologize for that given the time of the day.

CHAIRMAN BOYLES: No apology necessary, Bob. It is a nice snapshot, and again, with your indulgence, the Coordinating Council's indulgence. We're not looking for action today, but what I would look for is action in October. Certainly, prior to that, if there are questions or comments, and any questions for Bob or Mike or me, in terms of where we are big picture-wise or with some of the documents that Bob went over. Any questions or comments; you all are really tired.

With that, again, I will tell you we are selling naming rights to the committee formally known as the ACCSP Executive Committee. It is not the same as a stadium, but we'll give you a sky box for menhaden in the middle. Again, what we would look for is final action in the October timeframe, and Brandon, is that an almost question you have?

MR. MUFFLEY: It is an almost question, good reading, very good. What are we actually approving or finalizing? Is it the MOU, specifically, that we are going to be adopting then in October? Just looking for where we need to focus and what, specifically, we are adopting at that meeting.

CHAIRMAN BOYLES: Yes, I think the MOU, and again, I would pay particular attention to that. The first document is the transition document. It has some of the details. What I hope you get out of Bob's brief is that really aside from this ACCSP Executive Committee, really things stay the same. But when you look at where changes will be, it will be in the MOU, and so the action item on the agenda will be approving the changes to the MOU.

MR. MUFFLEY: Just a quick follow up, so at the Business Session tomorrow, it is just an overview of what you provided today. Is that what we're getting at the Business Session, or there is not a vote tomorrow at the Business Session, or is there?

EXECUTIVE DIRECTOR BEAL: I don't want to tell you, because you won't show up for the Business Session.

MR. MUFFLEY: I'm here for Lobster, so I'm here for the long haul.

EXECUTIVE DIRECTOR BEAL: Oh, there you are. Okay. Good then, I can tell you. Yes. it will just be going over the same documents and spelling the process out for the Full Commission tomorrow, and feeding into decisions in October. I think, in addition to formally approving the MOU in October, hopefully, it's kind of verification that the short-term, medium-term, long-term tasks are what this group wants, and that road map spells out the direction to move in.

MS. PATTERSON: Just as a note about the signing of an MOU is that neither Doug nor I will be signing this, and we need to bring it forward to our legal staff. I presume that our state isn't the only one that has to do that. Even though we may approve this draft MOU, I guess I'm trying to go with some timeline here.

There still might be changes if state's legals haven't had a chance to look at these. I don't know if we want to have our legals, or if you guys want our legal's to be taking a look at this prior to October. If you feel that where the MOU is now is fine, or if you want to give this body another couple weeks to get back to you on that; to see if there is any other changes. Then say, this is the draft that we're going to be presenting, so that we can take it to our legals, and then actually have a formal affirmation of the MOU in October.

CHAIRMAN BOYLES: Good suggestion, Cheri. Bob, did you want to respond?

EXECUTIVE DIRECTOR BEAL: I guess, more of a question. The previous addenda to the MOU, I don't think we went through the signature process, and every partner signed off on that. I think that was just done through action at this Coordinating Council, if I remember right. I don't know if we need -- legal review is obviously fine.

But I don't think we did go through that formal signature process like we did on the original MOU, where there is this John Hancock, and it's very formal pens with feathers and all that stuff. If it is just an approval here, I'm not sure how much of that action needs to take place. But that's really up to the individual partners.

CHAIRMAN BOYLES: I would agree, and Cheri, I mean as a good suggestion I'm not sure that it occurred to me just yet. But I would think that when we get to -- if it is something that's submitted for signature, then I certainly won't sign it without my legal counsel looking at it. To that end and with Bob's suggestion, what I would encourage the partners to do is -- the draft is pretty close, I believe, based on the staffs review, Bob and Mike's efforts as well as the Governance Transition Workgroup. It is close, and so I would feel comfortable encouraging you, if you felt the need to consult with an attorney; and I think there is one attorney in the room, Chip. Dr. Laney.

DR. LANEY: I just consulted with that attorney, even though he doesn't have the Fish and Wildlife Service as a client; just to confirm that both the federal agencies are going to be in the same boat, with regard to the need to confer with legal counsel before anybody could sign off on it, just wanted to get that on the record.

CHAIRMAN BOYLES: Bob, what I'd ask you and Mike to do, if you would, was just go back and affirm these amendments to the MOU. Have they been submitted for formal signature and such? I think my predecessors predecessor actually signed for us back in the nineties. With that, other further questions on governance transition?

Adjourn

Okay, we will move on to the next item on the agenda which is adjournment. Seeing no other business to come before the Coordinating Council, I will adjourn the meeting. Thank you all for sticking with us. It has been a long day, I appreciate your efforts.

(Whereupon the meeting was adjourned at 6:45 o'clock p.m. on August 3, 2016.)

	Partner	Title	Primary Module	Others	Cost	
MAINTENANCE	1	ME DMR	FY2017: Managing Mandatory Dealer Reporting in Maine (32 pages)	Catch/Effort	Metadata	\$ 164,001
	2	ME DMR	Portside Commercial Catch Sampling and Comparative Bycatch Sampling for Atlantic Herring, Atlantic Mackerel and Atlantic Menhaden Fisheries (52 pages)	Biological	Bycatch/Metadata	\$ 24,975
	3	RI DFW	FY2017: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island (22 pages)	Catch/Effort (100%)		\$ 78,420
	4	NJ DFW	Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries (28 pages)	Catch/Effort (55%)	Biological (45%)	\$ 158,547
	5	SC DNR	ACCSP Data Reporting from South Carolina's Commercial Fisheries (17 pages)	Catch/Effort (70%)	Biological (30%)	\$ 161,504
	6	SEFSC	Continued Processing and Aging of Biological Samples Collected from U.S. South Atlantic Commercial and Recreational Fisheries in Response to ACCSP Bio-sample Targets (20 pages)	Biological (100%)		\$ 256,038
	7	ACCSP RTC	Increase At-Sea Sampling Levels for the Recreational Headboat Fishery on the Atlantic Coast (17 pages)	Catch/Effort (50%)	Biological (40%), Bycatch (10%)	\$ 155,373
				Total Maintenance	\$ 998,858	
NEW	8	ME DMR	Creation Of a Multi-Point Reporting Tool with Trackers for Maine's Urchin and Scallop Fisheries (37 pages)	Catch/Effort (100%)		\$ 352,794
	9	MA DMF	Northeastern Black Sea Bass Otolith Age Validation and Otolith Micro-Chemical Investigation using Marginal Increment Analysis and LA-ICP-MS (23 pages)	Biological (100%)		\$ 18,033
	10	NJ DFW	Pilot Study: Characterization of Bycatch and Protected Species Interaction in the New Jersey Delaware Bay Inshore Gillnet Fishery (15 pages)	Bycatch (50%)	Biological (40%), Catch/Effort (10%)	\$ 88,466
	11	MD DNR	Ensuring Accountability in Maryland's Pilot Electronic Reporting Program using Dockside Monitors (11 pages)	Catch/Effort (100%)		\$ 138,386
	12	GA DNR	Data Entry and Management of Commercial Fisheries Paper Trip Tickets in Georgia (9 pages)	Catch/Effort (100%)		\$ 92,036
	13	SEFSC	Estimation of Bycatch in the South Atlantic Snapper-Grouper Fishery: A Comparison of Self-Reported Logbooks and On-Board Observers (18 pages)	Bycatch (50%)	Biological (45%), Catch/Effort (5%)	\$ 333,000
					Total New	\$ 1,022,715
Admin	14	ACCSP	ACCSP Administrative Budget (20 pages)	Admin	\$ 1,851,641	
				Grand Total Proposed	\$ 3,873,214	



STATE OF MAINE
DEPARTMENT OF
MARINE RESOURCES
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PAUL R. LEPAGE
GOVERNOR

PATRICK C. KELIHER
COMMISSIONER

August 12, 2016

Atlantic Coastal Cooperative Statistics Program
1050 N. Highland St. Ste. 200 A-N
Arlington, VA 22201

We are pleased to submit the proposal titled “FY17: Managing Mandatory Dealer Reporting in Maine” for your consideration. This is a maintenance proposal which has not changed in the scope of work. The Maine Department of Marine Resources (MEDMR) has required mandatory swipe card reporting for elver dealers since the 2014 season; which the MEDMR fully funded. The MEDMR is currently working on a collaborative swipe card project with the Massachusetts Division of Marine Fisheries (MADMF), National Marine Fisheries Service Greater Atlantic Regional Office (NMFS GARFO), ACCSP and HarborLight Software LLC to create a more comprehensive swipe card program that will include elvers while also incorporating sea urchin and scallops. The MEDMR intends to require all sea urchin dealers to start reporting with the swipe card program for the upcoming 2016 - 2017 season and then incorporate scallop dealers for the 2017 – 2018 season. The MEDMR continues to bring its experience with the Elver System swipe card project to this current effort in the hope that other partners may benefit from the new swipe card system. The MEDMR also continued to monitor compliance and suspend those dealers who fail to report on time. The threat of a license suspension has improved the timeliness and quality of data submitted. Please view all graphs in color. This proposal addresses the following 2017 ranking criteria: catch and effort, metadata, regional impact, funding transition plan, in kind contribution, improvement in data quality and timeliness, impact on stock assessment and properly prepared. This proposal has been revised from the original proposal submitted on June 13th to address all reviewers’ questions and comments. Since the proposal was submitted; the vacant Office Associate I position funded by this grant has been filled by Susan Kelley. For a summary of the proposal for ranking purposes, please see page 24. Please contact Robert Watts at the MEDMR with any questions. Thank you for your consideration of this proposal.

In our original proposal, committee members asked that we address the following question below. We are addressing them in this cover letter and within the proposal.

- What is the status of Swipe Card subgroup established under the Commercial Technical Committee to work on issues raised by NOAA with Maine and ACCSP over the last two years. Have any solutions been proposed that will meet federal dealer reporting requirements that do not require trips to be split up and reported through different channels based on species landed.

MEDMR was tasked with supplying ACCSP with a list of concerns that have been raised by GARFO in the past what require MEDMR’s concerns. These were submitted to Joseph Meyers on July 26, 2016. The subgroup should be meeting in the near future to discuss these concerns and determine how to move forward. Currently the solutions that have been proposed would not meet both MEDMR and GARFO’s needs. The MEDMR has delayed the requirement of scallop dealers to use the swipe card program until the start of the 2017-

2018 scallop season with the hope that a compromise between GARFO and MEDMR can be reached that all partners will find acceptable.

- Page 4: Figure 1; the red label reads “1st year of mandatory trip level dealer reporting in”. Did some of this label get cut off?

This has been fixed, thank you.

- Page 7: states “...continue to mandate electronic swipe card reporting in the elver fishery for 2015” Do you mean 2016 or 2017?

MEDMR will continue to require swipe card reporting in the elver fishery. This sentence has been fixed to remove any timeframe.

- It was suggested in the future to make the proposal more concise as the proposal is quite lengthy.

Please accept our apologies for the length on our proposal. In the past MEDMR has shortened our proposal and feedback from prior committee members asked that the MEDMR provide information from previous proposals. If it is the desire of the current committee to shorten our proposal moving forward MEDMR will certainly do so.

Sincerely,

Robert Watts
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Atlantic Coastal Cooperative Statistics Program
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**FY17: Managing Mandatory Dealer Reporting in Maine
(Revised)**

Total Cost: \$164,001

Submitted by:

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August 12, 2016

Applicant Name: Maine Department of Marine Resources (MEDMR)

Principal Investigator: Robert Watts, Marine Resource Scientist

Project Title: FY17: Managing Mandatory Dealer Reporting in Maine

Project Type: Maintenance Project

Requested Award Amount (without the NOAA administration fee): \$164,001

Requested Award Period: One year after receipt of funds

Change in Scope/Cost from Previous Year Project:

This is a maintenance proposal which has not changed its scope from the FY16 proposal. The dealer reporting objectives have largely remained unchanged since 100% of licensed dealers must report trip level information on 100% species they purchase from harvesters, which meets ACCSP standards. However, since 2014 the MEDMR required that all elver dealers report daily using a MEDMR initiated and funded swipe card reporting program called the “Elver System” for dealers to report. Elver dealers were required to report daily using the Elver System. Since 2015, the Elver System was modified to start tracking of dealer to dealer transactions. Not only are harvesters required to swipe a card at the initial point of sale, but also dealers are required to swipe a card for any dealer to dealer elver transactions. The MEDMR is currently working on a collaborative swipe card project with the Massachusetts Division of Marine Fisheries (MADMF), National Marine Fisheries Service Greater Atlantic Regional Office (NMFS GARFO), ACCSP and HarborLight Software LLC to create a more comprehensive swipe card program that will include elvers while also incorporating sea urchin and scallops. Starting with the 2016 – 2017 sea urchin season, all 12 sea urchin dealers will be required to report through the new eDR (ACCSP swipe card program) program. This will be the first time that sea urchin data are reported electronically by dealers. The MEDMR requested that a new market codes be created to allow dealers to report the percent roe which is a MEDMR reporting requirement for dealers. The MEDMR continues to bring its experience with the Elver System swipe card project to this current effort in the hope that other partners may benefit from the new swipe card system. It is the intent of the MEDMR to continue to expand the use of swipe cards over time to other fisheries with mandatory reporting. The MEDMR is also submitting another ACCSP new project proposal that would link electronic harvester reporting to a tracker system and then linking the harvester reports to the dealer report through a harvester supplied “Trip ID”. The MEDMR also continued to suspend dealer licenses for those who fail to report on time which has greatly improved the timeliness and quality of the data submitted. The MEDMR continues to fund the position that administers this suspension authority. These costs are not included in this grant proposal. See Attachment 1 for a summary of the project history and Attachment 2 (view in color) for a graph of previous grant costs.

Objectives:

The objective of this proposal is to collect trip level landings information from all licensed dealers who buy directly from harvesters. The primary tasks will be regulation compliance, data entry and auditing. Staff will also focus on dealer outreach to help industry understand the importance of the accurate and timely reporting. With the expansion of mandatory swipe card reporting, the MEDMR expects to spend a significant amount of time on outreach, explaining the new system to dealers and troubleshooting any issues that might arise. Electronic reporting will be encouraged for those still opting to report on paper. In 2014 Maine State Legislature passed a law requiring that all elver dealers report using a swipe card program. Another law was passed in 2015 that provides the MEDMR the authority to require scallop and sea urchin dealers to report with swipe cards. The results of the Elver System have proven successful and the MEDMR feels it is now time to implement swipe cards into more fisheries that have shown a difficulty in receiving timely data. The MEDMR has used their swipe card program experience as a learning process to help create a more complete swipe card program in collaboration with MA DMF,

NOAA GARFO, ACCSP and HarborLight Software LLC. There is no plan to mandate electronic reporting for all other dealers at this time, as this is not an ACCSP requirement.

Need:

Maine has a large number of dealers who can buy directly from harvesters, and thus has to spend significant resources tracking compliance, and entering and auditing a large numbers of records. In 2015, 604 dealers were licensed to buy from harvesters and 210 (35%) of them were required to report to National Marine Fisheries Service (NMFS). Regardless of their federal permit status, MEDMR works with all dealers to ensure all landings are reported either to MEDMR or to SAFIS, and staff audits all records with a state landed of Maine. Of the 604 dealers, 284 (42%) chose to report on paper; 193 (29%) chose Trip Ticket (electronic reporting software developed by Bluefin Data LLC); 97 (14%) chose file upload; 69 (10%) chose key entry SAFIS; 26 (3%) were required to use the Elver System (swipe card reporting program developed by Bluefin Data LLC); and 6 (1%) would report using the NMFS quahog database (Table 1).

Table 1: Reporting Methods Chosen for the 2015 Primary Buyers in Maine

Reporting Method	Combo Dealers	State Dealers	Total Dealers
Paper	17	267	284
Trip Ticket	137	56	193
Elver System	2	20	22
SAFIS Key Entry	45	24	69
File Upload	49	48	97
Quahog Electronic Logbook	6	0	6
Total Electronic*	239	148	387
Grand Total	256	415	671

*Data submitted via Trip Ticket, SAFIS Key Entry, File Upload and Quahog Electronic Logbook are data electronically reported.

Note: Thirty-three dealers chose multiple methods of reporting, so they were counted two or more times on this table.

Some dealers opted to report using multiple methods, (largely due to the exemption of certain species in the federal reporting requirement). Of the 1.52 million trips entered for 2015 in the data warehouse, 31% of them were landed in Maine which exceeds any other state (Figure 1 – view in color). These records were submitted by both “state-only” dealers (those that only report to MEDMR) as well as “combo” dealers (those that report to fulfill both NMFS and MEDMR requirements). Because MEDMR cooperatively works with NMFS to collect and audit data from federally permitted dealers, MEDMR staff devotes time and resources to help these “combo” dealers submit data and MEDMR staff audits all these records.

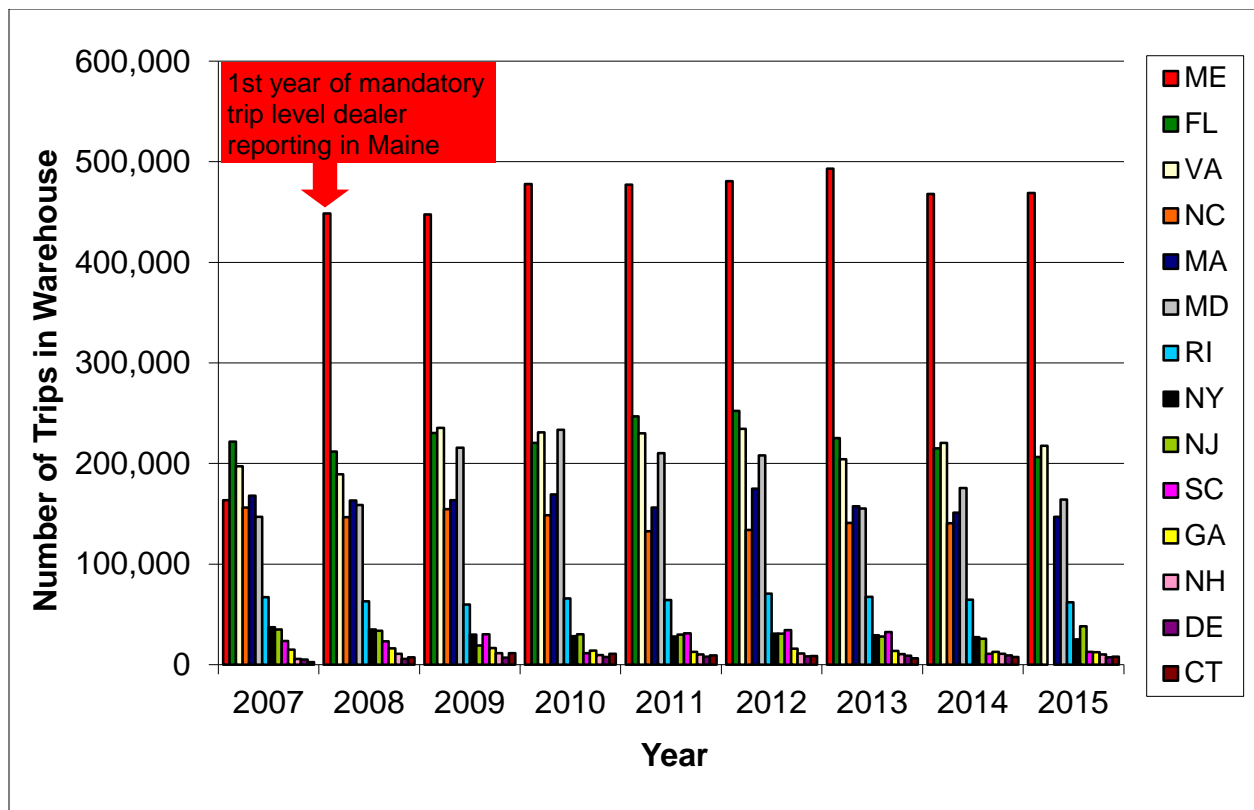


Figure 1: Number of Reported Trip Records by State Landed in ACCSP Data Warehouse

The number of trip records that MEDMR staff uploaded into SAFIS or data entered into MARVIN (MEDMR’s database that contains all sampling, biological and landings data that MEDMR collects) has increased 83% from since 2007 (Figure 2 – view in color). When dealers submit reports on paper, they are entered into the MARVIN database. MARVIN is used for reports submitted on paper because it is a faster method of data entry and MEDMR wishes to use this tool to audit the data before sending a copy of it to ACCSP. Routines are configured to convert the MARVIN data to ACCSP codes before they are uploaded to the ACCSP warehouse.

The numbers in Figures 1 and 2 differ because they contain different data sets. Figure 1 shows the Maine-landed data in the warehouse which contains data from: MARVIN dealer data, MARVIN harvester data, SAFIS data, the federal ocean quahog data, and highly migratory species data. Figure 2 only shows Maine-landed records from MARVIN dealer data and SAFIS data.

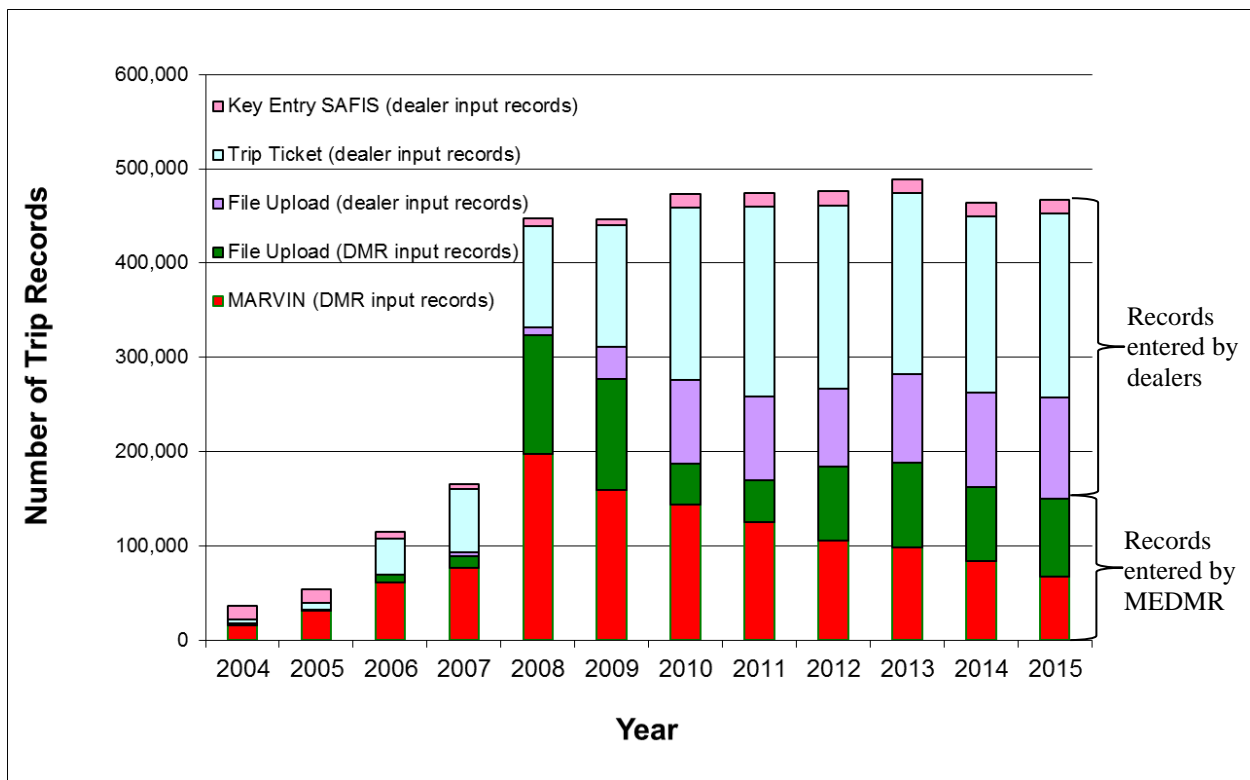


Figure 2: Number of Dealer Reported Trip Records entered in MARVIN and SAFIS

Landings data entered in MARVIN are uploaded to the ACCSP data warehouse. The significant increase in the amount of data entry and auditing is the single greatest challenge for the dealer program staff. Within the past few years, MEDMR absorbed the cost of two of the four positions previously funded by ACCSP grants, and MEDMR is also funding the position who will administer the license suspension process of the program. MEDMR is now requesting funding for two existing positions: one Specialist I who audits data, helps set up dealers with electronic reporting (trip ticket, file upload, key entry SAFIS and swipe card programs), uploads data for “state-only” dealers, trains and supports “combo” dealers to report their own data, and provides the personal outreach with industry; and one Office Associate I who key enters dealer landings submitted on paper. It is essential that this dealer reporting program continue as it is an important tool for monitoring Maine’s commercial fisheries which are large and economically important to the U.S. seafood industry. According to the NMFS commercial fisheries database (as of 5/31/2016), Maine was ranked as the highest state on the Atlantic Coast in commercial value (\$623.5 million) and fourth highest in whole pounds landed (280 million) in 2015. This comprehensive dealer reporting program is also an ASMFC (Atlantic States Marine Fisheries Commission) compliance issue for several fisheries, including for American lobster which is Maine’s largest fishery.

Summary of staffing:

MEDMR Landings Program staff involved in dealer reporting who are fully funded by MEDMR:

- Scientist IV: makes decisions on the general Landings Program direction.
- Scientist III: oversees the Landings Program, participates in ACCSP committees, transfers data to ACCSP; reporting technology development and responds to data requests.
- Scientist II: manages the day-to-day operations of the Landings Program, is responsible for database development, responds to data requests and updates the Landings Program web page. This position also audits data, and monitors licenses and compliance.
- Specialist II: provides one-on-one outreach with the seafood dealers; trains dealers how to report electronically or on paper; follows up on compliance issues; uploads data from “state-only” dealers who choose to file upload; and audits data. This position trains “combo” dealers how to file upload their own data, maintains dealer upload conversion tables, troubleshoots uploading errors, and installs Trip Ticket at dealer locations. This position not only audits data from “state-only” dealers, but also data submitted electronically by “combo” dealers. This position

frequently works with federally permitted dealers because the dealers are also submitting this information in order to fulfill MEDMR reporting requirements. See the *Approach* section below for further details on auditing. This position is also assigned tasks in the harvester-reporting project.

- Office Associate II: corresponds with industry regarding new suspension authority for failure to report on time; identifies and notifies delinquent reporters; follows protocols for suspending licenses; works with the licensing division to ensure licenses are re-issued when reports have been submitted.
- Office Associate I: opens and processes mail and enters data into MARVIN.

MEDMR Landings Program staff currently funded by ACCSP and in need of additional ACCSP funding:

- Specialist I: provides one-on-one outreach with the seafood dealers; trains dealers how to report electronically or on paper; follows up on compliance issues; uploads data from “state-only” dealers who chose to file upload; and audits data. This position trains “combo” dealers how to file upload their own data, maintains dealer upload conversion tables, troubleshoots uploading errors, and installs Trip Ticket at dealer locations. This position not only audits data from “state-only” dealers, but also data submitted electronically by “combo” dealers. This position frequently works with federally permitted dealers because the dealers are also submitting this information in order to fulfill MEDMR reporting requirements. MEDMR staff help federally permitted dealers to submit data and staff audit the data submitted to ensure the data are as accurate as possible, even though the data may have been submitted under the NMFS partner ID. See the *Approach* section below for further details on auditing.
- Office Associate I: key enters dealer reports into MARVIN, files the dealer reports submitted to MEDMR and performs other office duties as requested (assists with mailings, compliance entry, opening mail, etc.).

The FY14 through FY16 grant did not include any funding for the elver swipe card program. The MEDMR fully funded the original programming, programmatic updates and maintenance costs associated with this project. The MEDMR will continue to fund the monthly maintenance fees. The MEDMR has been absorbing positions to transition off ACCSP grant money, and the new positions/resources needed for the license suspension authority were absorbed by the MEDMR and are not included in this funding request. MEDMR will continue to try to identify alternative sources of funding for the dealer reporting project, but the State of Maine is continuing to face budget challenges and there are few options for state funding to cover the total cost at this time.

Results and Benefits:

The data collected so far have shown how valuable this information is for Maine’s fisheries. In the lobster industry, MEDMR scientists have learned more about the fleet characteristics and number of active full time and part time fishermen involved in this fishery than they have been able to with the current sampling programs. Other fishery managers are now analyzing landings data to learn more about the fishing fleet and the makeup of other fisheries. MEDMR has learned how many harvesters are active in each fishery (Figure 3 – view in color).

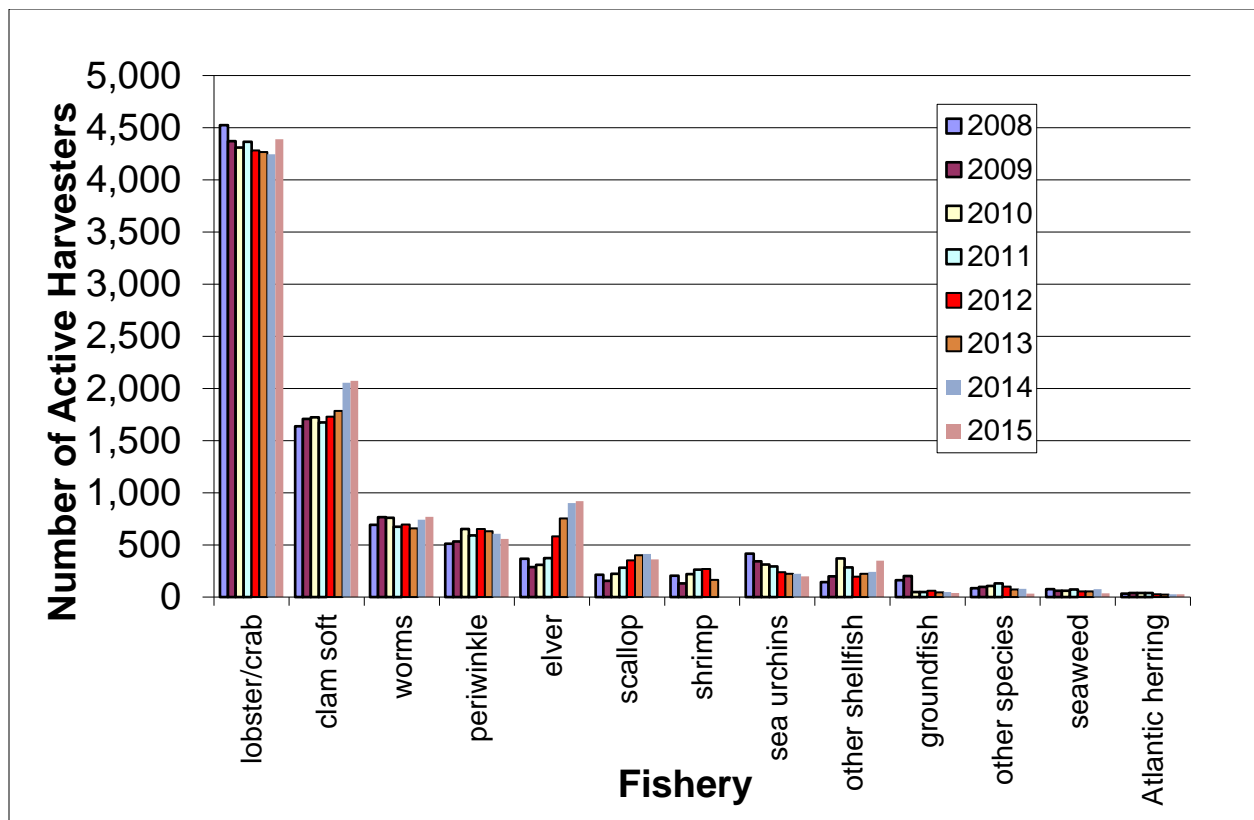


Figure 3: Number of Active Harvesters Reported in Dealer Data

This grant will allow MEDMR to complete a tenth year of mandatory trip level reporting for all dealers. More data auditing and follow up with dealers will help to ensure the data reported are as accurate as possible. MEDMR continues to encourage more dealers to move from paper reporting to electronic reporting as dealers become more comfortable with trip level reporting, and will continue to mandate electronic swipe card reporting in the elver fishery. In addition, the MEDMR is participated in a collaborative effort to create a complete swipe card program with MADMF, NOAA GARFO, ACCSP and HarborLight Software LLC that will be used for sea urchin reporting starting in September, 2016 and scallops in December, 2017. MEDMR has been in discussions with NOAA GARFO for the past two years to determine how to incorporate swipe card reporting with federal scallop dealers. It was determined by NOAA GARFO that the best avenue for these discussions was through ACCSP committees. During the April, 2016 Commercial Technical Committee meeting a subgroup was created to determine what the current issues are with swipe card reporting and how to move forward with a program that will meet the needs of all partners. Currently this group has not met and MEDMR has sent out what has been identified in the past as the issues by both MEDMR and NOAA GARFO. Meetings should be scheduled in the near future to start working on these issues. The only proposed solutions have not met the needs of MEDMR or NOAA GARFO. The MEDMR expects other fisheries will eventually be required to use the swipe card program. MEDMR is already uploading data reported to MARVIN to ACCSP every six months and intends to start uploading every three months; which benefits all partners.

Metadata for the dealer program will be updated as needed according to the Federal Geographic Data Committee (FGDC) and the Content Standard for Digital Geospatial Metadata (CSDGM) standards where appropriate. The resulting metadata will be reported to ACCSP as text and XML.

This project will help MEDMR meet the data collection standards of ACCSP. All partners will benefit, as all data will be uploaded to ACCSP and many of the species landed in Maine have a broad geographic range which includes many other agencies in their management. Partners have also benefited from the technologies built and lessons learned from the elver dealer swipe card/mobile app project that was rolled out to elver dealers in 2014 and utilized again in 2015 and 2016.

Approach:

1. Enforce compliance

MEDMR staff will enforce compliance of the trip level reporting regulation through these methods:

- Provide initial outreach and technical support needed for dealers to report trip level landings to MEDMR. Meet with dealers individually as needed to explain reporting procedures, load software, troubleshoot problems with reporting, and explain consequences for failing to report.
- Review reports submitted for completeness and log the submissions in the compliance database. If reports are incomplete, MEDMR will contact industry to correct reporting mistakes. If a dealer cannot be contacted by phone, the report will be returned for correction.
- Complete suspension notices monthly to those dealers that are delinquent enough to meet the minimum notification criteria as outlined in the suspension law (Attachment 4).
- Complete follow-up suspension notices monthly to those dealers that are delinquent enough to meet the minimum notification criteria as outlined in the suspension law (Attachment 4).
- MEDMR will suspend dealer licenses for those who fail to report in a timely manner. See Attachment 4 for the law, which dictates suspension procedures MEDMR will follow.

2. Data entry

Paper reports will be entered into MARVIN. Staff will file upload all data through the SAFIS interface for those “state-only” dealers who choose to report from their own accounting systems.

3. Encourage electronic reporting

MEDMR staff will encourage dealers reporting on paper to report using one of the three electronic reporting methods (SAFIS key entry, Trip Ticket, or file upload). MEDMR staff will train “combo” dealers who are required to report electronically according to NMFS regulation to upload their own data and will help them maintain their conversion tables so the correct fishermen, vessels, ports and species-grade-market-unit combinations are reported. MEDMR staff will install Trip Ticket at those dealer locations where file uploading is not an option. Staff will also customize the Trip Ticket program so that only the correct harvesters, vessels, species, ports and gears pertinent to the dealer can be chosen.

MEDMR believes the electronic reporting can benefit many in the industry as much as it benefits MEDMR by reducing the amount of key entry required of staff. Starting with the 2014 elver season and continuing with the 2015 and 2016 seasons, the MEDMR required all elver dealers report daily using the “Elver System”, which was created by Bluefin Data LLC. The MEDMR required the Elver System to be used to record and report all harvester to dealer transactions. In 2015 and 2016, the Elver System also tracked dealer to dealer transactions. The MEDMR paid for and supplied each dealer with an Elver System program and swipe card reader and training. There were a total of 22 buying stations that could have purchased directly from harvesters in 2016 and 27 in 2015. The use of the Elver System has eliminated the need of MEDMR staff to manually enter each transaction and provided staff with the most up to date data available. Dealers were required to report daily which allowed the MEDMR to monitor each harvester’s individual quota and the overall quota.

The “Elver System” proved to be a more accurate way to identify harvesters and the landing date. Since the past two years of electronic swipe-card reporting had been a success, MEDMR worked with MADMF, NOAA GARFO, HarborLight Software, LLC and ACCSP to create a more complete swipe card reporting software for other fisheries (starting with sea urchins, scallops and incorporating elvers), based on how data are used in management decisions, how timely the information needs to be submitted, and how much staff time MEDMR devotes to auditing/correcting inaccurate data.

4. Continue outreach with industry to promote buy-in.

MEDMR staff will continue to work with dealers to explain the purpose and benefits of this reporting system. Staff will attend the annual Maine Fishermen's Forum and present a Landings Program poster explaining the importance of accurate reporting as well as displaying preliminary data by fishery. Staff will work with established industry organizations, such as the MEDMR advisory councils, lobster zone councils, and dealer and harvester associations to reiterate the program goals and show results of mandatory reporting. Staff will also focus on explaining the new statutory authority for suspending licenses for those who fail to report on time, and how this will help gather more accurate data.

5. Audit of dealer data submitted.

Staff will audit data submitted on a monthly basis. Paper data will be audited twice per month; electronic audits sent via email from SAFIS will be corrected weekly. SAFIS audits for "state-only" dealers will be corrected via an ODBC connection to a view of the Maine data. Audits concerning "combo" dealers will also be vetted through the NMFS Northeast Region. MEDMR staff audit data submitted by "combo" dealers because these dealers submit data in order to also fulfill MEDMR reporting requirements. MEDMR performs basic audits of records to catch potential oversights from NMFS audits, audits data exempted from the federal reporting rule (e.g. softshell clams, razor clam, mussels, oysters, quahog, elver, and worm data), and performs additional audits that NMFS does not. For example, MEDMR audits all records to flag those harvesters selling without a license for that species. MEDMR also compares dealer-reported landings with harvester-reported landings and identifies dealers with discrepancies. In all of these audits, MEDMR contacts dealers when discrepancies are discovered and works to correct records or recover missing data.

6. Transmission of dealer data to ACCSP.

MEDMR will upload dealer data from MARVIN to the ACCSP data warehouse once every three months. In each data feed, the following fields are uploaded to the warehouse according to ACCSP protocols: supplier dr id, supplier dealer id, supplier trip id, supplier cf id, supplier vessel id, unload year, unload month, unload day, state code, county code, port code, primary gear, data source, data supplier, reported quantity, live pounds, dollars, disposition code, grade code, unit measure, species ITIS, market code, supplier action flag, dr seq id, fishing mode. MEDMR enters data daily and audits data weekly, so the data uploaded to the warehouse are a mix of pre- and post-audited records. MEDMR does not keep track of what percentage of the uploaded records are "reloads" due to errors, but simply reloads all the data in MARVIN to the warehouse once every three months. In addition, the data supplied by the Elver System are sent directly to SAFIS daily during elver season.

The MEDMR does not upload data from MARVIN to SAFIS because MEDMR staff continually audit data each week, so the data that are uploaded to the warehouse are a mix of pre- and post-audited records. The reloading of data from MARVIN to the Warehouse is an automated process that the MEDMR loads into a temporary table provided by the Warehouse. If we were to perform the same upload method to SAFIS we would need the ability to mass delete records from SAFIS (which we do not have the ability to do at this time) before records are reloaded to avoid creating duplicate records. In addition, quahog and Bluefin tuna data are loaded into the warehouse and not into SAFIS, so all Maine dealer data would still reside in the warehouse and not SAFIS.

7. Report metadata to ACCSP.

Metadata will be created with ESRI ArcCatalog 10 in order to conform to the FGDC (Federal Geographic Data Committee) standards and specifications. As specified by the federal standard, MEDMR metadata will include the following main sections with detailed information on: identification information, data quality information, spatial data organization information, spatial reference information, entity and attribute information, distribution information, metadata reference information, citation information, time period information and contact information. Created metadata will be available in text and XML formats.

Geographic Location: Operations will be based out of Boothbay Harbor, Maine and the project will take place throughout Maine.

Milestone Schedule:

	<u>Months</u>											
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>
1. Enforce dealer compliance	X	X	X	X	X	X	X	X	X	X	X	X
2. Data enter dealer reports	X	X	X	X	X	X	X	X	X	X	X	X
3. Encourage electronic dealer reporting	X	X	X	X	X	X	X	X	X	X	X	X
4. Industry outreach to promote dealer buy-in	X	X	X	X	X	X	X	X	X	X	X	X
5. Audit dealer data	X	X	X	X	X	X	X	X	X	X	X	X
6. Upload dealer data to ACCSP			X			X			X			X
7. Report metadata to ACCSP												X
8. Semi-annual reports							X					X
9. Annual reports												X

Project Accomplishments Measurement:

Goal	Measurement	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015*	2016*
Enforce Dealer Compliance	Number of dealer licenses rejected due to failure to report	43	155	48	56	66	81	16	35	15	115	407	-	-
Enforce Dealer Compliance	Frequency of referrals to Marine Patrol due to missing reports	-	-	-	-	-	4X per yr	4X per yr	4X per yr	4X per yr	4X per yr	4X per yr through 6/1/14	-	-
Enforce Dealer Compliance	Number of compliance calls to delinquent dealers	-	-	-	-	166	297	259	451	523	420	269	208	22
Enforce Dealer Compliance	Number of suspension letters to delinquent dealers	-	-	-	-	-	-	-	-	-	-	407	567	176
Enforce Dealer Compliance	Number of dealers suspended for failing to report timely	-	-	-	-	-	-	-	-	-	-	27	57	22
Dealer Data Entry	Number of trip records by year landed in data warehouse	15,858	27,455	121,981	163,516	448,646	447,373	477,891	477,032	480,780	490,254	467,829	468,443	30,191
Dealer Data Entry	Number of positive trip records by year landed in MARVIN	15,868	31,532	61,971	77,702	202,013	162,579	146,070	124,449	105,760	98,195	83,956	67,195	3,575
Dealer Data Entry	Number of positive trip records by year landed in SAFIS	21,045	22,632	53,456	88,597	250,093	286,456	329,358	348,461	371,055	390,945	380,354	399,908	40,949
Encourage Electronic Reporting	Number of dealers submitting positive reports in SAFIS	69	78	98	142	204	229	274	291	311	328	341	329	226
Transmit Dealer Data to Data Warehouse	Frequency of data submitted by year landed	Yearly	Yearly	Yearly	Yearly	yearly to twice per month	twice per month	twice per month	twice per month	twice per month	twice per month	bi-monthly	once every 6 months	once every 6 months
Outreach	Number of custom data requests	-	11	95	155	204	269	275	281	302	419	434	569	395

*2015 and 2016 data are incomplete at the time of proposal submission

Cost Summary: FY17 Managing Mandatory Dealer Reporting in Maine

Personnel^A	Description	Cost
1 Specialist I (Eileen Greenleaf)	full time position for 12 months	\$42,806
1 Office Associate I (Currently Vacant)	full time position for 12 months	\$31,772
	Subtotal	\$74,578
Fringe Benefits^A		
1 Specialist I (Eileen Greenleaf)	Includes health, dental, workers comp, FICA, life insurance and retirement	\$25,756
1 Office Associate I (Currently Vacant)	Includes health, dental, workers comp, FICA, life insurance and retirement	\$12,575
	Subtotal	\$38,331
	Total Personnel	\$112,909
Travel		
1 seasonal vehicle ^B	1 car * \$108.65/mo * 12 mo	\$1,304
Mileage fee	1 car * 1,000 mi per mo * \$.12/mi * 12 mo	\$1,440
Toll allowance	Estimated	\$75
5 Overnight stays ^C	5* \$100/night	\$500
Per diem (includes extended days)	(5 overnights + 5 extended days) * \$50/day	\$500
Supplies		
Filing Supplies	folders, folder labels, year labels	\$500
Contractual		
Trip Ticket 1 yr maintenance (Software support and upgrades)	\$500/mo fee * 12 mo	\$6,000
Other		
Printing and binding of dealer report forms	500 logbooks * \$2.50 per logbook	\$1,250
Postage for logbooks	Mail 500 logbooks * \$4.75 per logbook	\$2,375
Postage for info packets and letters	(.465*1200 compliance letters)+(5.75*200 certified letters to delinquent dealers)	\$1,708
Telecommunication charges ^D	4 phones * \$55/mo * 12 mo	\$2,640
	Subtotal	\$18,292
Total Direct Costs		\$131,201
Indirect Costs (25%)		\$32,800
Total Award to DMR		\$164,001

A: Cost includes salary and benefits, which are dictated by contract with State of Maine and are non-negotiable.

B: All state agencies must rent vehicles through state's Central Fleet Agency which is non-negotiable. Vehicle costs include the following services and costs: maintenance, repairs, insurance, and gasoline.

C: DMR staff meet with and train dealers how to electronically report to DMR and/or NMFS.

D: One cell phone for each of the two specialists and one each for the two scientists working on the project.

FY 2017 Partner Contribution – For ACCSP Purposes

Scientist IV (15% time)	\$16,392
Scientist III (50% time)	\$61,576
Scientist II (50% time)	\$38,861
Specialist II (75% time)	\$51,402
Office Associate I (15% time)	\$6,911
Office Associate II (100%)	\$61,438
Elver Swipe Card Program	\$11,950

Total	\$248,746
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Budget Narrative for FY2017 proposal:

Personnel and Fringe Benefits: The Specialist I named in the grant is Eileen Greenleaf and the Office Associate I is Susan Kelley. These positions are funded full time (100%) by this award and they are Department of Marine Resources' employees. Salaries and benefits for these employees are dictated by contract with the State of Maine and are non-negotiable. Benefits include retirement benefits, FICA, health insurance, dental insurance, workers compensation and life insurance. The benefits are determined by a formula the state uses which is variable dependent upon the position classification, the pay grade of the employee (e.g. the number of years the person has been employed by the State of Maine) and type of coverage the employee selects.

Travel: The Specialists are the employees who will be travelling. The travel is for visiting dealers for the purpose of installing reporting software, training dealer staff how to electronically report or troubleshooting reporting problems. Staff provides dealers with one-on-one training on these reporting systems and helps troubleshoot electronic reporting problems. Travel occurs throughout the coast of Maine, although trips to the interior are not unusual if the dealer headquarters is located inland. These dealers must be trained in the use of electronic reporting and in some cases given reporting software in order to submit their landings information.

The monthly fee for the seasonal vehicle is dictated by contract with the State of Maine Central Fleet Agency; the fee is based on the type of vehicle leased, and the mileage fee is based on how many miles the car was used the previous year. Because of this, the vehicle fees between projects may differ. This project has one Chevy Cobalt car which is a state owned vehicle that MEDMR leases from the State of Maine Central Fleet Agency.

Occasional extended day travel or overnight stays are necessary. If multiple dealer appointments to these remote areas are made for the same day, or appointments are made for consecutive days, overnight travel may be necessary.

Supplies: Filing supplies are needed each year. The MEDMR does not require paper dealers to use the supplied bound logbook. Many of our paper dealers download the electronic version of their form from our website. We do accept forms via email, fax or U.S. mail. The bound logbook includes a carbon copy that dealers use for their records, or to resend should the original gets lost in the mail. Many dealers like this carbon copy feature, which is one of the main reasons why we choose to continue to purchase these bound logbooks.

Contract: The Trip Ticket reporting software is custom-made software only available from Bluefin Data LLC and was purchased in a previous grant. This is the only vendor that can provide the software support and maintenance and this is the only outside vendor providing these services to ACCSP and NMFS as well as MEDMR. In this grant segment, this award will pay for a maintenance contract for Bluefin Data LLC to provide backup support, to be available for troubleshooting software problems and provide program upgrades as needed. This program is essential, as seafood dealers in Maine use the software to comply with MEDMR regulations. The information is used by MEDMR, National Marine Fisheries Service and other state agencies for fisheries management.

Other: Cell phones for the Specialists and the Scientists are necessary for communication and safety when on travel to dealer locations. The Scientist positions are not mentioned in the personnel costs because the positions are paid for with state money (not grant money), although staff members travel while working on this grant award. Staff often needs to call NMFS or Bluefin Data LLC when installing software or troubleshooting reporting issues at the dealer locations. The Specialist I does not have an office phone, so the cell phones also serve as the only phone through which dealers can contact them with questions.

Dealer reporting logbooks are printed every year and distributed to those who opt to report on paper. Some dealers use many logbooks per year, depending on the logbook type they choose and the number of harvesters with which they do business.

Indirect costs: The Department of Marine Resources has an indirect cost rate of 25%. See Attachment 3 for the Negotiated Indirect Cost Agreement.

Cost Summary: FY16 Managing Mandatory Dealer Reporting in Maine			
Personnel^A	Description		Cost
1 Specialist I (Eileen Greenleaf)	full time position for 12 months		\$42,806
1 Office Associate I (Rebecca Barter)	full time position for 12 months		\$32,084
		Subtotal	\$74,890
Fringe Benefits^A			
1 Specialist I (Eileen Burk)	Includes health, dental, workers comp, FICA, life insurance and retirement		\$26,285
1 Office Associate I (Rebecca Barter)	Includes health, dental, workers comp, FICA, life insurance and retirement		\$12,454
		Subtotal	\$38,739
		Total Personnel	\$113,629
Travel			
1 seasonal vehicle ^B	1 car * \$108.65/mo * 12 mo		\$1,304
Mileage fee	1 car * 1,000 mi per mo * \$.1254/mi * 12 mo		\$1,505
Toll allowance	Estimated		\$75
5 Overnight stays ^C	5* \$100/night		\$500
Per diem (includes extended days)	(5 overnights + 5 extended days) * \$50/day		\$500
Supplies			
Filing Supplies	folders, folder labels, year labels		\$500
Contractual			
Trip Ticket 1 yr maintenance (Software support and upgrades)	\$450/mo fee * 12 mo		\$5,400
Other			
Printing and binding of dealer report forms	500 logbooks * \$2.50 per logbook		\$1,250
Postage for logbooks	Mail 500 logbooks * \$4.75 per logbook		\$2,375
Postage for info packets and letters	(.49*1200 compliance letters)+(5.75*200 certified letters to delinquent dealers)		\$1,738
Telecommunication charges ^D	4 phones * \$55/mo * 12 mo		\$2,640
		Subtotal	\$17,787
Total Direct Costs			\$131,416
Indirect Costs (25%)			\$32,854
Total Award to DMR			\$164,270

A: Cost includes salary and benefits, which are dictated by contract with State of Maine and are non-negotiable.
B: All state agencies must rent vehicles through state's Central Fleet Agency which is non-negotiable. Vehicle costs include the following services and costs: maintenance, repairs, insurance, and gasoline.
C: DMR staff meet with and train dealers how to electronically report to DMR and/or NMFS.
D: One cell phone for each of the two specialists and one each for the two scientists working on the project.

FY 2016 Partner Contribution – For ACCSP Purposes

Scientist IV (15% time)	\$16,392
Scientist III (50% time)	\$51,363
Scientist II (50% time)	\$44,599
Specialist II (75% time)	\$51,402
Office Associate I (15% time)	\$6,911
Office Associate II (100%)	\$61,438

Total	\$232,105
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Budget Narrative for FY2016 proposal:

Personnel and Fringe Benefits: The Specialist I named in the grant is Eileen Burk and the Office Associate I is Rebeca Barter. These positions are funded full time (100%) by this award and they are Department of Marine Resources' employees. Salaries and benefits for these employees are dictated by contract with the State of Maine and are non-negotiable. Benefits include retirement benefits, FICA, health insurance, dental insurance, workers compensation and life insurance. The benefits are determined by a formula the state uses which is variable dependent upon the position classification, the pay grade of the employee (e.g. the number of years the person has been employed by the State of Maine) and type of coverage the employee selects.

Travel: The Specialists are the employees who will be travelling. The travel is for visiting dealers for the purpose of installing reporting software, training dealer staff how to electronically report or troubleshooting reporting problems. Staff provides dealers with one-on-one training on these reporting systems and helps troubleshoot electronic reporting problems. Travel occurs throughout the coast of Maine, although trips to the interior are not unusual if the dealer headquarters is located inland. These dealers must be trained in the use of electronic reporting and in some cases given reporting software in order to submit their landings information.

The monthly fee for the seasonal vehicle is dictated by contract with the State of Maine Central Fleet Agency; the fee is based on the type of vehicle leased, and the mileage fee is based on how many miles the car was used the previous year. Because of this, the vehicle fees between projects may differ. This project has one Chevy Cobalt car which is a state owned vehicle that MEDMR leases from the State of Maine Central Fleet Agency.

Occasional extended day travel or overnight stays are necessary. If multiple dealer appointments to these remote areas are made for the same day, or appointments are made for consecutive days, overnight travel may be necessary.

Supplies: Filing supplies are needed each year. The MEDMR does not require paper dealers to use the supplied bound logbook. Many of our paper dealers download the electronic version of their form from our website. We do accept forms via email, fax or U.S. mail. The bound logbook includes a carbon copy that dealers use for their records, or to resend should the original gets lost in the mail. Many dealers like this carbon copy feature, which is one of the main reasons why we choose to continue to purchase these bound logbooks.

Contract: The Trip Ticket reporting software is custom-made software only available from Bluefin Data LLC and was purchased in a previous grant. This is the only vendor that can provide the software support and maintenance and this is the only outside vendor providing these services to ACCSP and NMFS as well as MEDMR. In this grant segment, this award will pay for a maintenance contract for Bluefin Data LLC to provide backup support, to be available for troubleshooting software problems and provide program upgrades as needed. This program is essential, as seafood dealers in Maine use the software to comply with MEDMR regulations. The information is used by MEDMR, National Marine Fisheries Service and other state agencies for fisheries management.

Other: Cell phones for the Specialists and the Scientists are necessary for communication and safety when on travel to dealer locations. The Scientist positions are not mentioned in the personnel costs because the positions are paid for with state money (not grant money), although staff members travel while working on this grant award. Staff often needs to call NMFS or Bluefin Data LLC when installing software or troubleshooting reporting issues at the dealer locations. The Specialist I does not have an office phone, so the cell phones also serve as the only phone through which dealers can contact them with questions.

Dealer reporting logbooks are printed every year and distributed to those who opt to report on paper. Some dealers use many logbooks per year, depending on the logbook type they choose and the number of harvesters with which they do business.

Indirect costs: The Department of Marine Resources has an indirect cost rate of 25%. See Attachment 3 for the Negotiated Indirect Cost Agreement.

Cost Summary: FY15 Managing Mandatory Dealer Reporting in Maine			
Personnel^A	Calculation	Cost	
1 Specialist I (Eileen Burk)	full time position for 12 months	\$42,382	
1 Office Associate I (Currently Vacant)	full time position for 12 months	\$37,063	
		Subtotal	\$79,445
Fringe Benefits^A			
1 Specialist I (Eileen Burk)	Includes health, dental, workers comp, FICA, life insurance and retirement	\$22,928	
1 Office Associate I (Currently Vacant)	Includes health, dental, workers comp, FICA, life insurance and retirement	\$21,989	
		Subtotal	\$44,917
		Total Personnel	\$124,362
Travel			
1 seasonal vehicle ^B	1 car * \$108.65/mo * 12 mo	\$1,304	
Mileage fee	1 car * 1,000 mi per mo * \$.1525/mi * 12 mo	\$1,830	
Toll allowance	Estimated	\$75	
5 Overnight stays ^C	5* \$100/night	\$500	
Per diem (includes extended days)	(5 overnights + 5 extended days) * \$50/day	\$500	
Supplies			
Filing Supplies	folders, folder labels, year labels	\$500	
Contractual			
Trip Ticket 1 yr maintenance (Software support and upgrades)	\$350/mo fee * 12 mo	\$4,200	
Other			
Printing and binding of dealer report forms	500 logbooks * \$2.50 per logbook	\$1,250	
Postage for logbooks	Mail 500 logbooks * \$4.75 per logbook	\$2,375	
Postage for info packets and letters	(.48*680 compliance letters)+(.48*680 letters explaining compliance enforcement)+(5.75*200 certified letters to delinquent dealers)	\$1,803	
Telecommunication charges ^D	4 phones * \$50/mo * 12 mo	\$2,400	
		Subtotal	\$16,737
		Total Direct Costs	\$141,099
		Indirect Costs (25%)	\$35,275
		Total Award to DMR	\$176,373

A: Cost includes salary and benefits, which are dictated by contract with State of Maine and are non-negotiable.

B: All state agencies must rent vehicles through state's Central Fleet Agency which is non-negotiable. Vehicle costs include the following services and costs: maintenance, repairs, insurance, and gasoline.

C: DMR staff meet with and train dealers how to electronically report to DMR and/or NMFS.

D: One cell phone for each of the two specialists and one each for the two scientists working on the project.

FY 2015 Partner Contribution – For ACCSP Purposes

Scientist IV (15% time)	\$16,240
Scientist III (50% time)	\$47,597
Scientist I (50% time)	\$42,565
Specialist II (75% time)	\$48,937
Office Associate I (15% time)	\$9,240
Office Associate II (100%)	\$60,591

Total \$225,171

Budget Narrative for FY2015 proposal:

Personnel and Fringe Benefits: The Specialist I named in the grant is Eileen Burk and the Office Associate I position is currently vacant and open for recruitment. These positions are funded full time (100%) by this award and they are Department of Marine Resources' employees. Salaries and benefits for these employees are dictated by contract with the State of Maine and are non-negotiable. Benefits include retirement benefits, FICA, health insurance, dental insurance, workers compensation and life insurance. The benefits are determined by a formula the state uses which is variable dependent upon the position classification, the pay grade of the employee (e.g. the number of years the person has been employed by the State of Maine) and type of coverage the employee selects.

Travel: The Specialists are the employees who will be travelling. The travel is for visiting dealers for the purpose of installing reporting software, training dealer staff how to electronically report or troubleshooting reporting problems. Staff provides dealers with one-on-one training on these reporting systems and helps troubleshoot electronic reporting problems. Travel occurs throughout the coast of Maine, although trips to the interior are not unusual if the dealer headquarters is located inland. These dealers must be trained in the use of electronic reporting and in some cases given reporting software in order to submit their landings information.

The monthly fee for the seasonal vehicle is dictated by contract with the State of Maine Central Fleet Agency; the fee is based on the type of vehicle leased, and the mileage fee is based on how many miles the car was used the previous year. Because of this, the vehicle fees between projects may differ. This project has one Chevy Cobalt car which is a state owned vehicle that MEDMR leases from the State of Maine Central Fleet Agency.

Occasional extended day travel or overnight stays are necessary. If multiple dealer appointments to these remote areas are made for the same day, or appointments are made for consecutive days, overnight travel may be necessary.

Supplies: Filing supplies are needed each year. The MEDMR does not require paper dealers to use the supplied bound logbook. Many of our paper dealers download the electronic version of their form from our website. We do accept forms via email, fax or U.S. mail. The bound logbook includes a carbon copy that dealers use for their records, or to resend should the original gets lost in the mail. Many dealers like this carbon copy feature, which is one of the main reasons why we choose to continue to purchase these bound logbooks.

Contract: The Trip Ticket reporting software is custom-made software only available from Bluefin Data LLC and was purchased in a previous grant. This is the only vendor that can provide the software support and maintenance and this is the only outside vendor providing these services to ACCSP and NMFS as well as MEDMR. In this grant segment, this award will pay for a maintenance contract for Bluefin Data LLC to provide backup support, to be available for troubleshooting software problems and provide program upgrades as needed. This program is essential, as seafood dealers in Maine use the software to comply with MEDMR regulations. The information is used by MEDMR, National Marine Fisheries Service and other state agencies for fisheries management.

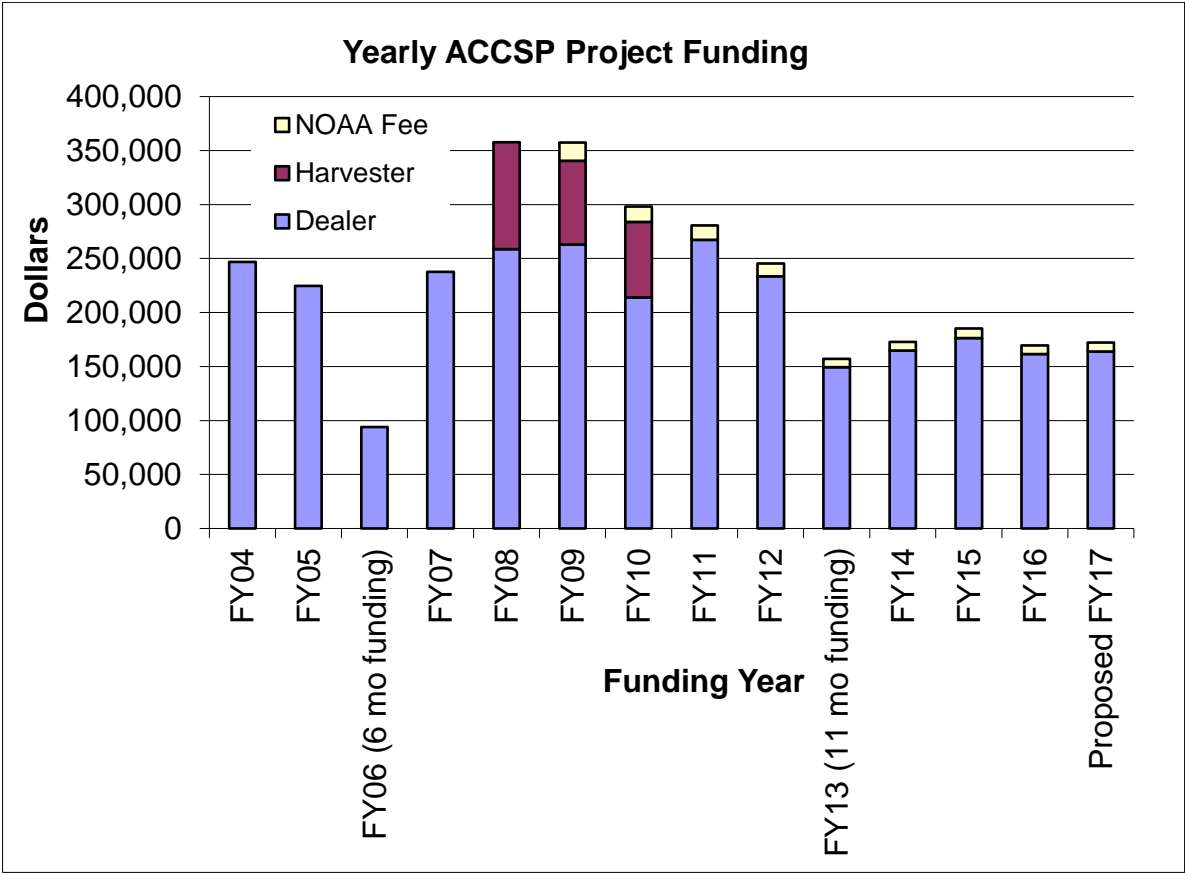
Other: Cell phones for the Specialists and the Scientists are necessary for communication and safety when on travel to dealer locations. The Scientist positions are not mentioned in the personnel costs because the positions are paid for with state money (not grant money), although staff members travel while working on this grant award. Staff often needs to call NMFS or Bluefin Data LLC when installing software or troubleshooting reporting issues at the dealer locations. The Specialists do not have office phones, so the cell phones also serve as the only phone through which dealers can contact them with questions.

Dealer reporting logbooks are printed every year and distributed to those who opt to report on paper. Some dealers use many logbooks per year, depending on the logbook type they choose and the number of harvesters with which they do business.

Attachment 1: Project History

Fund Year	Title	Cost	Extension through	Actual dates funding covered	Results
2004	Implementation of a Mandatory Dealer Reporting System for Maine Commercial Landings According to ACCSP Standards	246,965	Apr 2006	Jul 2004-Apr 2006 (extension required when Ops Committee asked MEDMR not to hire Office Associate I with this grant and salary savings when Specialist I quit)	Established Reporting Advisory Committee; drafted trip level reporting regulation; extensive outreach with industry including 10 state-wide meetings and 11 industry-specific meeting; worked with SCBI to develop and deploy "Trip Ticket" to state dealers; 1174 dealer visits; recruited dealers to report voluntarily; defeated a legislative bill to stop MEDMR's reporting program; see Completion Report for more info.
2005	Continuation of Implementation of a Mandatory Dealer Reporting System for Maine Commercial Landings According to ACCSP Standards	224,749	Jun 2007	May 2006-Jun 2007 (extension required because FY04 was extended and a Specialist I was promoted in MEDMR, leaving vacant position for a number of months)	Worked with ACCSP to make SAFIS usable for Maine state dealers; began file uploading voluntary dealer data; began collecting voluntary paper trip tickets; 380 dealer visits; 67 dealers actively reporting; worked to modify report options in "Trip Ticket" software to benefit dealers; began phasing out duplicative reporting by dealers; passed comprehensive trip level reporting regulation for all dealers in June 2007 which will give momentum to project.
2006	Interim Support for Mandatory Dealer Reporting in Maine	94,093	Dec 2007	Jun 2007-Dec 2007	Worked to get remaining 404 dealers set up with a trip level reporting method. Notified dealers to begin reporting trip level data as of Jan 1, 2008. Began uploading harvester license & vessel data weekly to SAFIS.
2007	FY07 – Mandatory Dealer Reporting for Maine Commercial Landings	237,548	Oct 08	Jan 2008 -Oct 2008	Began enforcing trip level reporting; begin audit dealer data; began monthly compliance calls to delinquent dealers; encouraged more electronic reporting; staff entering paper data from 433 dealers and uploading electronic data from 58 dealers.
2008	FY08- Managing Mandatory Dealer and Harvester Reporting in Maine	357,574	Oct 09	Nov 2008-Sept 2009	Complete 1 st year of mandatory dealer reporting regulation; enter, audit and transmit data to ACCSP; year 1 of 10% lobster and dogfish harvester reporting; begin to implement scallop harvester reporting.
2009	FY09 – Managing Mandatory Dealer and Harvester Reporting in Maine	357,415	Nov 10	Oct 2009-Sept 2010	Complete 2 nd year of mandatory dealer reporting; enter, audit and transmit data to ACCSP; year 2 of 10% lobster and dogfish harvester reporting; year 2 of scallop harvester reporting. Enter, audit and transmit data to ACCSP.
2010	FY10- Managing Mandatory Dealer and Harvester Reporting in Maine	298,129	Nov 11	Oct 2010-Oct 2011	Complete 3 rd year of mandatory dealer reporting; enter, audit and transmit data to ACCSP; year 3 of 10% lobster and dogfish harvester reporting; year 3 of scallop harvester reporting. Enter, audit and transmit data to ACCSP.
2011	FY11- Managing Mandatory Dealer Reporting in Maine	280,605	Nov 12	Aug 2011 – July 2012	Complete 4 th year of mandatory dealer reporting; enter, audit and transmit data to ACCSP. Work on more audits, including dealer data vs. harvester data submitted.
2012	FY12 – Managing Mandatory Dealer Reporting in Maine	245,303	Nov 13	Aug 2012-July 2013	Complete 5 th year of mandatory dealer reporting; enter, audit and transmit data to ACCSP. Expanding audits, including dealer data vs. harvester data submitted.
2013	FY13- Managing Mandatory Dealer Reporting in Maine	156,966	Oct 14	Aug 2013-June 2014	Complete 6 th year of mandatory dealer reporting; enter, audit and transmit data to ACCSP. Expanding audits, including dealer data vs. harvester data submitted for different fisheries.
2014	FY14- Managing Mandatory Dealer Reporting in Maine	164,663		July 2014 – Sep 2015	Complete 7 th year of mandatory dealer reporting; enter, audit and transmit data to ACCSP. Enforce timely reporting with license suspension and implement new swipe card program for elver dealers.
2015	FY15- Managing Mandatory Dealer Reporting in Maine	176,373		Oct 2015 – Sep 2016	Complete 8 th year of mandatory dealer reporting; enter, audit and transmit data to ACCSP. Enforce timely reporting with license suspension and help develop new swipe card program for multiple fisheries.
2016	FY15- Managing Mandatory Dealer Reporting in Maine	161,558		Oct 2016 – Sep 2017	Complete 9 th year of mandatory dealer reporting; enter, audit and transmit data to ACCSP. Enforce timely reporting with license suspension and implement new swipe card program for sea urchin dealers.

Attachment 2: Yearly Breakdown of ACCSP Funding



Attachment 3: Negotiated Indirect Cost Agreement

U.S. Department of Commerce
Office of Acquisition Management – Grants Management Division
1401 Constitution Ave., NW, HCHB Rm 6412
Washington, DC 20230, Attn: Indirect Cost Program

CERTIFICATE OF INDIRECT COSTS

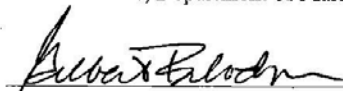
This is to certify that I have reviewed the indirect cost rate proposal prepared and maintained herewith and to the best of my knowledge and belief:

- (1) All costs included in this proposal dated December, 2015 to establish indirect cost billing rates for July 1, 2015 through June 30, 2016 are allowable in accordance with the requirements of the federal awards to which they apply and OMB Circular 87, "Cost Principles for State, Local, and Indian Tribal Governments". This proposal does not include any costs which are unallowable as identified in the applicable federal cost principles. For example, advertising contributions and donations, bad debts, entertainment costs or fines and penalties.
- (2) All costs included in this proposal are properly allocable to federal awards on the basis of a beneficial or causal relationship between the expenses incurred and the agreements to which they are allocated in accordance with applicable requirements. Further, the same costs that have been treated as indirect costs have not been claimed as direct costs. Similar types of costs have been accounted for consistently and the Federal Government will be notified of any accounting changes that could affect the rate.
- (3) The indirect cost rate calculated within the proposal is 32.17%, which was calculated using an indirect cost rate base type of Modified Total Direct Costs. The calculations were based on actual costs from fiscal year July 1, 2014 thru June 30, 2015 to obtain a federal indirect cost billing rate for fiscal year beginning July 1, 2015.

Subject to the provisions of the Program Fraud Civil Remedies Act of 1986, (31 USC 3801 et seq.), the False Claims Act (18 USC 287 and 31 USC 3729); and the False Statement Act (18 USC 1001), I declare to the best of my knowledge that the foregoing is true and correct.

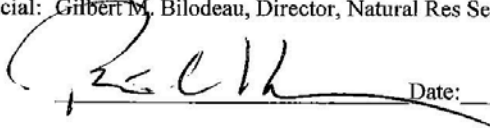
Organization Name: State of Maine, Department of Marine Resources

CFO Signature:

 Date: 12/18/15

Name/Title Authorized Official: Gilbert M. Bilodeau, Director, Natural Res Ser Ctr

Dept Head Signature:

 Date: 12/18/15

Name/Title Authorized Official: Patrick Keliher, Commissioner



Department of Marine Resources

INTEROFFICE MEMORANDUM

TO: FILE
FROM: PATRICK KELIHER, COMMISSIONER
SUBJECT: RATE USED FOR COST ALLOCATION
DATE: 5/20/2016

In accordance with OMB Circular A-87, the Department of Marine Resources has submitted to the U.S. Department of Commerce a departmental cost allocation plan for use during state fiscal year 2016 ending June 30, 2016. The indirect cost rate proposal is 32.17%. I am authorizing the use of the lesser rate of 25% to be used during this period.

ACCSP
FY17 Mandatory Dealer Reporting Pre-proposal
(FFY18 - 10/1/17 - 9/30/18)

Patrick Keliher, Commissioner

Attachment 4: Authority to Suspension Licenses for Delinquent Reporters

An Act to Improve the Quality of the Data Used in the Management of Maine's Fisheries

Be it enacted by the People of the State of Maine as follows:

Sec. 1. 12 MRSA §6301, sub-§6 is enacted to read:

6. Ownership identified. If a license issued under chapter 625 is issued to a firm, corporation or partnership, the individual who owns the highest percentage of that firm, corporation or partnership must be identified on the license application. When 2 or more individuals own in equal proportion the highest percentages of a firm, corporation or partnership, each of those owners must be identified.

Sec. 2. 12 MRSA §6412 is enacted to read:

§ 6412. Suspension of license or certificate for failure to comply with reporting requirements

1. Authority to suspend. The commissioner, in accordance with this section, may suspend a license or certificate issued under this Part if the holder of the license or certificate fails to comply with reporting requirements established by rule pursuant to section 6173. A license or certificate suspended under this section remains suspended until the suspension is rescinded by the commissioner. The commissioner shall rescind a suspension when:

A. The commissioner determines and provides notice to the holder of the suspended license or certificate that the holder has come into compliance with the reporting requirements established by rule pursuant to section 6173; and

B. The holder pays to the department a \$25 administrative fee.

When a suspension is rescinded, the license or certificate is reinstated. Until the suspension is rescinded, the holder of the suspended license or certificate is not eligible to hold, apply for or obtain that license or certificate.

2. Process for suspension for failing to comply with weekly reporting. If the commissioner determines that a person who holds a license or certificate under this Part has failed to comply with a weekly reporting requirement established by rule pursuant to section 6173, the commissioner shall notify the person at the telephone number provided on the application for the license or certificate and by e-mail if an e-mail address is provided on the application. If the license or certificate holder has not complied with the reporting requirements within 2 days after the commissioner has provided the notice, the commissioner shall mail a notice of suspension to the license or certificate holder by certified mail or the notice must be served in hand. The notice must:

A. Describe the information that the license or certificate holder is required to provide pursuant to this Part that the department has not received; and

B. State that, unless all the information described in paragraph A is provided to the department or the license or certificate holder requests a hearing, the license or certificate will be suspended in 3 business days after the license or certificate holder's receipt of the notice.

If the license or certificate holder has not complied with the reporting requirements or requested a hearing within 3 business days after receipt of the notice, the commissioner shall suspend the license or certificate.

3. Process for suspension for failing to comply with monthly reporting. If the commissioner determines that a person who holds a license or certificate under this Part has failed to comply with a monthly reporting requirement established by rule pursuant to section 6173, the commissioner shall notify the person at the telephone number provided on the application for the license or certificate and

by e-mail if an e-mail address is provided on the application. If the license or certificate holder has not complied with the reporting requirements within 45 days after the commissioner has provided the notice, the commissioner shall mail a notice of suspension to the license or certificate holder by certified mail or the notice must be served in hand. The notice must:

A. Describe the information that the license or certificate holder is required to provide pursuant to this Part that the department has not received; and

B. State that, unless all the information described in paragraph A is provided to the department or the license or certificate holder requests a hearing, the license or certificate will be suspended in 3 business days after the license or certificate holder's receipt of the notice.

If the license or certificate holder has not complied with the reporting requirements or requested a hearing within 3 business days after receipt of the notice, the commissioner shall suspend the license or certificate.

4. Hearing. A license or certificate holder receiving a written notice of suspension pursuant to this section may request a hearing on the suspension by contacting the department within 3 business days of receipt of the notice. If a hearing is requested, the suspension is stayed until a decision is issued following the hearing. The hearing must be held within 3 business days of the request, unless another time is agreed to by both the department and the license or certificate holder. The hearing must be conducted in the Augusta area. The hearing must be held in accordance with:

A. Title 5, section 9057, regarding evidence, except the issues are limited to whether the license or certificate holder has complied with reporting requirements established by rule pursuant to section 6173;

B. Title 5, section 9058, regarding notice;

C. Title 5, section 9059, regarding records;

D. Title 5, section 9061, regarding decisions, except the deadline for making a decision is one business day after completion of the hearing; and

E. Title 5, section 9062, subsections 3 and 4, regarding a presiding officer's duties and reporting requirements, except that notwithstanding Title 5, section 9062, subsection 1, the presiding officer must be the commissioner or the commissioner's designee.

Summary of Proposal for ACCSP Ranking

Proposal Type: Maintenance

Primary Program Priority and Percentage of Effort to ACCSP modules:

Catch and Effort (10 points): 100% of licensed dealers must report trip level information on 100% species they purchase from harvesters.

Metadata (2 Points): will be created with ESRI ArcCatalog 10 in order to conform to the FGDC standards and specifications. Created metadata will be submitted to ACCSP in text and XML formats.

Project Quality Factors:

Regional Impact (5 Points): all partners will benefit, as all the data collected will be uploaded to ACCSP. Regional management organizations, such as ASMFC, will benefit from the trip level information from Maine. Partners may also benefit from the technologies/procedures tested in the elver swipe card/mobile app reporting project. MEDMR contracted to have a mobile app built for dealers to use in conjunction with swipe card technology, and rolled it out to industry for use for the 2014 season. MEDMR is paying for all start-up costs associated with this project, but will share findings with ACCSP.

Funding transition plan (4 Points): through MEDMR's recent reorganization, the cost of one of the positions was absorbed by state and MEDMR is no longer asking for funding for salary and benefits. MEDMR also funds the new Office Associate II that is responsible for license suspensions for those who fail to report, and all costs associated with that additional position. MEDMR paid for the development of a "limited species" version of the Trip Ticket software and a mobile app that will be used in conjunction with harvester swipe cards for elver dealers to report with swipe card technology. MEDMR will pay for the ongoing monthly maintenance fee associated with this program. Currently, the MEDMR does not have any plans to require electronic reporting for all fisheries. Geographical restrictions prevent all dealers from having reliable high-speed internet access at this time.

In-kind Contribution (4 Points): the partner contribution is listed on page 12.

Improvement in Data Quality/Timeliness (4 Points): MEDMR is able to audit data at a more detailed level, including checking dealer reported data against harvester reported data. MEDMR encourages reporting timeliness through outreach with dealers and is working with Marine Patrol to ensure industry understands the importance of submitting accurate and timely information. The Maine State Legislature also passed a new law that authorizes license suspensions for those who fail to report on time which will improve the timeliness and quality of the data submitted. MEDMR mandated electronic reporting through a swipe card system for the elver fishery in 2014 and 2015 and will require scallop and sea urchin to report through swipe cards starting in September, 2015, which improved timeliness and data quality.

Impact on Stock Assessment (3 Points): Regional management organizations which carry out stock assessments will benefit from the detailed landings data reported from Maine. This information is used in stock assessments for many species that are managed by regional agencies.

Properly Prepared (5 Points): MEDMR followed ACCSP guidelines and pertinent documents when preparing this proposal.

Robert B. Watts II
Maine Department of Marine Resources
(207) 633-9412
rob.watts@maine.gov

June, 2016

PROFILE:

- Knowledge of Maine and federal regulations pertaining to commercial fishing and associated reporting requirements through working with the Department of Marine Resources and the National Marine Fisheries Service.
- Knowledgeable of Maine's fishing industries and how they operate.

EDUCATION:

B.S. Marine Science, Maine Maritime Academy, Castine, ME 2002

EMPLOYMENT EXPERIENCE:

May 2016 – Present **Marine Resource Scientist III**
Maine Department of Marine Resources
West Boothbay Harbor, ME

- Manages daily operations of Maine's Commercial Landings Program, which collects, compiles and distributes commercial fishery statistics for Maine's commercial fisheries.
- Supervises Landings Program personnel.
- Maintain Microsoft Access databases for licensing information, compliance and data entry.
- Communicates with industry regarding reporting requirements, monitors reporting compliance and works with the licensing division in order to ensure all mandatory reporting requirements are met and licenses are issued accordingly.
- Oversees DMR's landings suspension authority and process.
- Oversees DMR's swipe card reporting program.
- Maintains dealer and harvester auditing databases.
- Oversees Maine's Interactive Voice Response (IVR) reporting program.
- Oversees Maine's Environmental Monitoring Program.
- Serves as key contact for Maine commercial landings information.
- Promotes Maine's partnership with Atlantic Coastal Cooperative Statistical Program (ACCSP), serving on the Commercial Technical Committee, Information Systems Technical Committee and Outreach Committee; working to bring the Landings Program into compliance with ACCSP standards.

Jan 2014 – Jan 2016 **Marine Resource Scientist III (Acting Capacity)**
June 2015 – Apr 2016 **Marine Resource Scientist II**
Maine Department of Marine Resources
West Boothbay Harbor, ME

- Manages daily operations of Maine's Commercial Landings Program, which collects, compiles and distributes commercial fishery statistics for Maine's commercial fisheries.
- Supervises Landings Program personnel.
- Maintain Microsoft Access databases for licensing information, compliance and data entry.
- Communicates with industry regarding reporting requirements, monitors reporting compliance and works with the licensing division in order to ensure all mandatory reporting requirements are met and licenses are issued accordingly.

- Oversees DMR's landings suspension authority and process.
- Oversees DMR's swipe card reporting program.
- Maintains dealer and harvester auditing databases.
- Oversees Maine's Interactive Voice Response (IVR) reporting program.
- Serves as key contact for Maine commercial landings information.
- Promotes Maine's partnership with Atlantic Coastal Cooperative Statistical Program (ACCSP) through serving on the Commercial Technical Committee, Information Systems Technical Committee and Outreach Committee; working to bring the Landings Program into compliance with ACCSP standards.

**Feb 2012 – Apr 2015 Marine Resource Scientist I
Maine Department of Marine Resources**

- Manages daily operations of Maine's Commercial Landings Program, which collects, compiles and distributes commercial fishery statistics for Maine's commercial fisheries.
- Supervises five Landings Program personnel.
- Maintain Microsoft Access databases for licensing information, compliance and data entry.
- Communicates with industry regarding reporting requirements, monitors reporting compliance and works with the licensing division in order to ensure all mandatory reporting requirements are met and licenses are issued accordingly.
- Oversees outreach to industry.
- Maintains dealer and harvester auditing databases.
- Oversees Maine's Interactive Voice Response (IVR) reporting program.
- Serves as key contact for Maine commercial landings.

**Oct 2007 – Jan 2012 Marine Resource Specialist II
Maine Department of Marine Resources**

- Oversee daily operations of the harvester landings program.
- Notify new harvesters about reporting requirements.
- Maintain databases used for data audits and data entry.
- Monitor reporting compliance database and notifies harvesters if they are delinquent.
- Supervise two Landings Program personnel.
- Oversees IVR reporting.
- Prepare data requests from various sources

**Jul 2005 – Oct 2007 Marine Resource Specialist I
Maine Department of Marine Resources**

- Interviewed marine recreational anglers all over the Maine coast to help determine fish stocks. Identified, weighed, measured and recorded fish caught by anglers.
- Created publications, updated regulation handouts and updated the recreational fishing website as needed.

**May 2001 – Jun 2005 Conservation Aid
Maine Department of Marine Resources**

- Interviewed marine recreational anglers all over the Maine coast to help determine fish stocks. Identified, weighed, measured and recorded fish caught by anglers.
- Acted as a liaison between the State of Maine and the recreational anglers, answered anglers questions about fishing regulations.

Lessie White Jr.
Maine Department of Marine Resources
(207) 633-9412
lessie.l.white@maine.gov

August, 2016

PROFILE:

- Knowledge of tracking systems and applications to retrieve fishing intensity.
- Knowledge of and working relationship with many fishing industries in Maine.

EDUCATION:

M.S. Marine Biology, University of Maine/Orono Campus, Orono, ME 2000

B.S. Marine Science/Biology, Long Island University/Southampton Campus, Southampton, NY 1997

EMPLOYMENT EXPERIENCE:

Jul 2016 – Present **Marine Resource Scientist II**
Maine Department of Marine Resources
West Boothbay Harbor, ME

- Manages daily operations of Maine’s Commercial Landings Program, which collects, compiles and distributes commercial fishery statistics for Maine’s commercial fisheries.
- Supervises Landings Program personnel.
- Maintain Microsoft Access databases for licensing information, compliance and data entry.
- Communicates with industry regarding reporting requirements, monitors reporting compliance and works with the licensing division in order to ensure all mandatory reporting requirements are met and licenses are issued accordingly.
- Oversees DMR’s landings suspension authority and process.
- Oversees DMR’s swipe card reporting program.
- Maintains dealer and harvester auditing databases.
- Oversees Maine’s Interactive Voice Response (IVR) reporting program.
- Serves as key contact for Maine commercial landings information.

Jul 2000 – Jul 2016 **Marine Resource Scientist I**
Maine Department of Marine Resources
West Boothbay Harbor, ME

- Implemented the RockSeven tracker project; Tracked boats using GPS trackers to determine fishing activity; Worked with Rock Seven to develop application to show fishing intensity at different speed ranges; Managed the funds;
- Participated in Locus Traxx project; Tracked boats using GPS trackers to determine daily movement and fishing activity; Checked for daily trip reports of fishing activity; Called fishermen to confirm fishing activity; Constructed a spreadsheet to show the performance of the on board reporting system.
- Responsible for implementation of the sea urchin and shrimp port sampling programs; Coordinating sampling schedule; Supervised employee during winter months; Conduct interviews; Collect samples; Process samples in the field and in the lab; Run data quality checks; Maintaining sampling gear; Train other scientists in urchin and shrimp procedures for working up sample; Data analysis on Maine, Massachusetts and New Hampshire’s shrimp data; Participate in the stock assessment for shrimp.

- Participated in scallop, quahog and sea cucumber port sampling program; Sample catches at the docks; Interview the vessel captains for fishing and effort information; Process samples.
- Participated in a Fishing Gear Technology Working Group trying to look at all gear technology advancements for all fisheries; my primary focus was shrimp and lobsters.
- Participated in a Trawl Gear Workshop entitled “Working Together to Improve Fishing Technology”. This workshop looked at different ways to improve otter trawl selectivity through technological advances in materials and trawl designs.
- Participated in Bycatch in Northeast Fisheries: Moving Forward Workshop, where I participated at observing the roadblocks facing researchers and fishermen in trying to get new gear technology into fisheries management.
- Was responsible for shrimp logbook program; Distributing logbook forms; Developing a database to track compliance; Direct contact with fishermen to obtain correct entries; Answer any question the fishermen may have related to the logbook program.
- Participate in lobster sea sampling and ventless survey trips; Measure carapace length; Determine sex; Determine cull code; Determine V notch code; Determine egg classification code; Determine molt; Determine shell disease prevalence; Interviewing the vessel captains for fishing and effort information; Enter data into database.
- Participate in the summer shrimp trawl survey as lead shrimp biologist to assess the status of the stock; Train other scientists in shrimp identification, sex and stage identification, and procedures for working up samples; Work on a limited basis with FSCS (Fisheries Scientific Computing System).
- Implemented whiting gear research; supervised two contract positions; Observed and sorted the catch; Processed catch; analyzed data.
- Acted as DMR liaison and lead scientist on the NEC New Generation Trawl groundfish gear project. This included supervising four contract positions and two observer positions, overseeing data collection, collecting data, data entry, data checking, data analysis and writing the final report.
- Implemented the shrimp combination grate and cod end research; Sorted, identified, and measured the catches; Data analysis; Partial report writing; used underwater camera to video shrimp grate in action. Supervised one contract position.
- Participated as a member of the New England Fishery Management Council’s Plan Development Team for deep-sea red crabs; Assisting in the initial development of a Fishery Management Plan for deep-sea red crabs.
- Participated as an observer in the experimental Atlantic halibut fishery; conducted a literature search on the tagging methods in the halibut fishery.
- Implemented a green crab trapping experiment looking at catchability, retention and cost of five different traps; Looked at converting current gear with the least amount of effort and cost; Set up sampling schedule and area; obtained the equipment; ran the experiments; partial data analysis.

**Oct 1997 – Dec 2000 Graduate Student Research
University of Maine/Orono Campus
Orono, ME**

- Graduate research project on cod energetics; Ran a small closed water aquaculture system; Raised larval and juvenile cod; Raised live food for larval cod; Conducted water quality tests; Gave presentations; Analyzed data; Did minor repairs and cleaned system; Gave tours.

David Alton Libby
Maine Department of Marine Resources
(207) 633-9532
david.a.libby@maine.gov

June, 2016

EDUCATION:

Waterville Senior High School, Waterville, Me. 1967.

Ricker College, Houlton, Me. B.A., Biology, December 1971.

Benthic Ecology, University of Maine Darling Center, Walpole, Me. 1988.

Fisheries Population Dynamics, University of Maine, Orono, Me. 1984.

Employment Experience:

Nov 2006 – present **Marine Resources Scientist IV**
Maine Department of Marine Resources
West Boothbay Harbor, ME

- Directs and oversees the Biomonitoring and Assessment Division. Chief responsibilities are to oversee fishery monitoring programs for commercially important marine species; the commercial; biological studies; population assessments; and gear research.
Directs the collection and processing of Maine's Commercial Landings Program (CLP) statistics and processing.
- Program science manager for the Bureau's biological database Marine Resource and Environmental Information System (MARVIN).
- Directs and manages the laboratory's wet lab and sea water facility for holding and conducting experiments of marine organisms

Jul 2000 – Nov 2006 **Marine Resources Scientist III**
Maine Department of Marine Resources
West Boothbay Harbor, ME

- Oversees the Atlantic herring resource monitoring, assessment and advisory group.
- Directs the collection and processing of Maine's Commercial Landings Program (CLP) statistics and processing.
- Program science manager for the Bureau's biological database Marine Resource and Environmental Information System (MARVIN).
- Directs and manages the laboratory's wet lab and sea water facility for holding and conducting experiments of marine organisms
- Promotes Maine's partnership with Atlantic Coastal Cooperative Statistical Program (ACCSP) through serving on the Biological Review Panel and developing and overseeing projects to bring the state into compliance with ACCSP.

Jan 1988 – Jul 2000

**Marine Resources Scientist II
Maine Department of Marine Resources
West Boothbay Harbor, ME**

- Provides direction for the Atlantic herring landings and sampling projects. Supervises personnel as to their duties and tasks in carrying out the needs of the projects.

Scientific Publications:

Kanwit, J. K., and D. A. Libby. 2009. Seasonal movements of Atlantic herring (*Clupea harengus*): results from a four year tagging study conducted in the Gulf of Maine and Southern New England. J. Northw. Atl. Fish. Sci., 40:29-39. doi:10.2960/J.v40.ms577

Townsend, D. W., Radtke, R. L., Corwin, S. and D. A. Libby. 1992 Strontium:calcium ratios in juvenile Atlantic herring *Clupea harengus* L. otoliths as a function of water temperature. J. EXP. MAR. BIOL. ECOL. vol. 160, no. 1, pp. 131-140

Chenoweth, S. B., D. A. Libby, R. L. Stephenson and M. J. Power. 1989. Origin and dispersion of larval herring (*Clupea harengus*) in coastal waters of eastern Maine and southwestern New Brunswick. CAN. J. FISH. AQUAT. SCI. 1989. vol. 46, no. 4, pp. 624-632

Creaser, E. P. and D. A. Libby, 1987. Seasonal movements of juvenile and adult herring, *Clupea harengus* L., tagged along the Maine and New Hampshire coast in 1976-1982. J. Northwest Atl. Fish. Sci. vol. 8(1).

Creaser, E. P. and D. A. Libby. 1986. Tagging of age 1 herring (*Clupea harengus* L.) and their movements along the Maine and New Brunswick coasts. J. Northwest. Atl. Fish. Sci., Vol. 7 No. 1: 43-46.

Batty, R. S., J. H. S. Blaxter and D. A. Libby. 1986. Herring (*Clupea harengus*) filter feeding in the dark. Mar. Bio. Vol. 91: 371-375.

Libby, D. A. 1984. A comparing of scale and otolith aging methods for the alewife, *Alosa pseudoharengus*. Fish. Bull., U.S. 84(4).

Creaser, E. P., D. A. Libby and G. D. Spiers. 1984. Seasonal movements of juvenile and adult herring, (*Clupea harengus* L.), tagged along the Maine coast. J. Northwest. Atl. Fish. Sci. 5(1) pp. 71-78.

Libby, D. A. 1982. Decrease in predominant ages during a spawning migration of the alewife, *Alosa pseudoharengus*. Fish. Bull., U.S. 80(4):902-905.

Libby, D. A. 1981. Difference in sex ratios of the anadromous alewife, *Alosa pseudoharengus*, between the top and bottom of a fishway at Damariscotta Lake, Maine. Fish. Bull., U.S. 79:207-211.



STATE OF MAINE
DEPARTMENT OF
MARINE RESOURCES
MARINE RESOURCES LABORATORY
P.O. BOX 8, 194 MCKOWN POINT RD
W. BOOTHBAY HARBOR, MAINE 04575-0008

PAUL R. LEPAGE
GOVERNOR

PATRICK C. KELIHER
COMMISSIONER

August 12, 2016

Atlantic Coastal Cooperative Statistics Program
Operation and Advisory Committee
1050 N. Highland Street, Suite 200A-N
Arlington, VA 22201

We are pleased to submit the revised proposal entitled, **“Portside commercial catch sampling and comparative bycatch sampling for Atlantic herring (*Clupea harengus*), Atlantic mackerel (*Scomber scombrus*), and Atlantic Menhaden (*Brevoortia tyrannus*) fisheries”**.

This is a maintenance proposal which has not changed its scope from the previously funded project in 2016. The top priority is the biological sampling of the Atlantic herring commercial fishery because the information derived has critical value that shows the health of the east coast herring meta population.

We have addressed all of the general comments (below). Changes from the original proposal are highlighted in yellow as directed. In addition, specific comments were made (below). Our responses to these comments are also included.

Sincerely,

Dr. Matthew Cieri and David Libby

Proposal for Funding made to:
Atlantic Coastal Cooperative Statistics Program
1050 N. Highland Street, Suite 200A-N
Arlington, VA 22201

Portside commercial catch sampling and bycatch sampling for Atlantic herring (*Clupea harengus*), Atlantic mackerel (*Scomber scombrus*), and Atlantic Menhaden (*Brevoortia tyrannus*) fisheries

Total Cost: \$24,975

Submitted by:

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General Comments

- Please make certain to review the 2017 Funding Decision Document (please outline using the ranking criteria, especially if a transition plan is needed) to make certain that all guidelines have been followed.
- **Completed**
- Do not calculate the 5% overhead for NOAA (i.e., if you have included this in your proposal, remove it).
- **Not Applicable**
- Make certain to explicitly label the percentage amount the project covers for each module (e.g., *This project aims to cover the catch and effort (45%), biological (30%) and bycatch (25%) modules*). For all proposals seeking funds for the catch and effort modules, if you haven't done so 1) identify a timeline or process by which you expect to implement regulations mandating electronic reporting for all and 2) if this is not happening what is preventing those requirements? (This would be appropriate under funding transition plan.)
- **Not Applicable**
- Indicate (bold, underline, within text, etc.) where your proposal hits various ranking criteria. This is especially important for new projects to note.
- **Completed**
- Highlight all changes from initial proposals.
- **Completed**
- For all maintenance proposal submissions, it is important to be explicit for any changes in the scope of work that has changed since the most recent accepted proposal submission.
- **Completed**
- For all proposals it is imperative that you include a narrative of the budget. In particular, if it is a maintenance proposal please include the budget from the most recent accepted proposal submission following the current year's proposed budget.
- **Completed**
- For those projects that did not provide summarized ranking criteria, please be sure to do so.
- **Not Applicable**
- For new proposals, make sure there is a funding transition plan, if one is not already included.
- **Not Applicable**
- Some proposals indicated start dates in early 2017. The Principal Investigators (PIs) should be aware that funds may not be available that early in 2017.
- Keep all curriculum vitae to a 2 page maximum.
- **Completed**
- Be diligent in properly prepare your proposal (i.e., making certain there are no typographical errors, pages are numbered, and no language is simply carried over from a previously submitted proposal or an example proposal).
- **Completed**
- Spell out all acronyms the first time they are used.
- **Completed**

- For all maintenance proposals funded from 2015 we'd appreciate if your project reports have not been sent to ACCSP, please visit <http://www.accsp.org/content/project-reports> to determine if your progress reports and final reports have been uploaded. If they have not been uploaded email them to elizabeth.wyatt@accsp.org by **August 22, 2016**.
- **Not Applicable**
- For all proposal submissions that collect age structures (otoliths and/or live tissue) or other samples it must be clarified what processing techniques (how they are to be processed and by whom) are lined up for the future. ACCSP requests that you be specific as possible. It may be understood that you are requesting funds for the collection, but ACCSP is more likely to fund projects with details planned out for the future clearly outlined. In particular, for all maintenance proposals that include aging structures it is requested that a review of the status of the samples collected from the most recent accepted proposal submission be included. A statement of intent from the organization that is overseeing the processing of the samples would also be recommended for inclusion of those proposals seeking funds for aging samples.
- **Completed**

Specific Comments

- Track changes are present.
- Response: It is sometimes difficult to ensure that Track Changes are off, especial as the final document is sent to our financial department prior to filing with ACCSP. But we will remind the financial department to ensure that changes are off prior to submitting
- It was suggested in the future to make the proposal more concise as the proposal is quite lengthy.
- Response: The Authors acknowledge that the proposal is long and will work on shortening it in the future. It should be noted that most of the elements in the current proposal reflect comments by a multitude of reviewers over the years. It would be helpful if ASMFC could indicate which of those are no longer necessary to include.
- Page 5: states “These four species represent 20% of ACCSP’s FY2016 Biological Sampling Priority Matrix” It’s 20% of the top quartile, not the entire matrix.
- **Completed**
- Please be sure to review all general comments as well.
- **Completed**

Applicant Name: Maine Department of Marine Resources (MEDMR)

Principal Investigator: Matthew Cieri, Marine Resource Scientist

Project Title: Portside commercial catch sampling and bycatch sampling for Atlantic herring (*Clupea harengus*), Atlantic mackerel (*Scomber scombrus*), and Atlantic Menhaden (*Brevoortia tyrannus*) fisheries

Project Type: Maintenance Project

Requested Award Period: One year after receipt of funds

Change in Scope/Cost from Previous Year Project:

This is a maintenance proposal which has not changed its scope from the previously funded project in 2016. The overall cost is slightly higher than the FY16 final award amount and less than 25% of the FY 15 award or the FY16 initial proposed amount. This change is due to placing James Becker's compensation on State funds as outlined elsewhere.

Objectives:

To maintain and expand the biological sampling of primarily the Atlantic herring commercial fishery including Atlantic menhaden and mackerel and other incidentally retained species of interest.

A secondary objective is to continue the portside bycatch sampling for trips targeting Atlantic herring.

Need:

Each of the species involved in this study has been declared not overfished and not subject to overfishing. However, each of these principle pelagic fisheries has recently become the focus of management action because of their status as forage species and because of potential bycatch problems associated with the directed fishery. In particular, Atlantic herring and Atlantic menhaden have been the focus of the emerging trend towards ecosystem management. Additionally, the commercial catch sampling portion of this project cover four important species listed in ACCSP FY 2016 Biological Sampling Priority Matrix; River herring (*Alosa sp.*), Atlantic menhaden (*Brevoortia tyrannus*), Spiny dogfish (*Squalus acanthias*), and Shad (*Alosa sapidissima*)

Atlantic herring (*Clupea harengus*), Atlantic menhaden (*Brevoortia tyrannus*) and Atlantic mackerel (*Scomber scombrus*) are three of the most ecologically and economically important fish species in the western Atlantic. All three are high volume, low value species utilized for bait, reduction, or human consumption. The three species are oceanic plankton-feeding fish that occur in large schools, inhabiting coastal and continental shelf waters from Labrador to Florida. With an estimated complex-wide biomass of 1.8 million metric tons (mt) of herring, 1+ million mt of mackerel, and 2.5+ million mt of menhaden, these species provide a significant forage base for other fish species, marine mammals, and birds. Additionally, they support the first, second and third largest commercial fisheries on the east coast in terms of volume. Atlantic herring landings in 2014 (the last year that NMFS data was available) were reported at approximately 104,088mt with an estimated value in excess of \$31 million. In addition to the direct economic contribution of herring landings, this fishery supports a domestic value-added industry worth approximately \$60 million and the North Atlantic

lobster fishery estimated at over \$500 million. Atlantic mackerel landings in 2014 were reported at approximately 5,900 mt with an estimated value in excess of \$4.4 million. The domestic value added industry (frozen whole fish) for mackerel, based in Cape May, NJ, and Fall River, New Bedford and Gloucester, MA, is estimated at \$25 million. The Atlantic menhaden 2014 catch was 172,000 mt valued at \$32 million.

This study will continue the biological commercial catch sampling of Atlantic herring, Atlantic mackerel, and Atlantic menhaden. Additionally, other species of interest, such as dogfish, both river herring species, and shad will be sampled as they are routinely encountered in this study.

This proposal will also continue to survey bycatch during trips targeting Atlantic herring using the protocols developed over the last decade of sampling.

Approximately seventy percent (70%) of project resources are needed to carry out the first and prime objective (or module) of the concurrent sampling portion of the project while thirty percent (30%) of resources are needed for the bycatch module.

Commercial catch sampling of Atlantic herring, Atlantic mackerel and Atlantic menhaden

MEDMR has collected and processed Atlantic herring commercial catch samples since 1960. A significant focus of this proposal is a continuation of the commercial catch sampling program for Atlantic herring along the east coast. MEDMR maintains primary responsibility for fishery dependent sampling of the east coast Atlantic herring fishery. Duties include, processing biological samples, compiling catch data, and constructing the catch at age matrix for the age structured model. Currently, staffing and financial limitations prevent MEDMR from providing adequate commercial catch sampling coverage without ACCSP support. Furthermore, NMFS has reduced port agents and other staff, such that biological sampling of herring has become a lower priority. In an effort to improve the commercial catch sampling program, MEDMR has supported a dedicated northeast herring sampler.

The Atlantic herring fishery has recently undergone significant management changes as a result of federal and state action. Recent implementation of River herring and Shad bycatch quotas will dramatically change fleet behavior, which in turn may alter size and location of where fish are caught. Also, a recent update to the Atlantic herring assessment has revealed the re-immersion of a retrospective pattern. Such a pattern for Atlantic herring tends to overestimate spawning stock biomass and under estimate fishing mortality in the terminal year. While changes to selectivity and natural mortality may be the cause of this pattern, age discrepancies between fishery dependent and commercial catch sampling may also play a role. As such continued commercial catch sampling will be vital in potential resolution of this issue

Without ACCSP support, samples would not be collected or aged, resulting in no catch-at-age information for the assessment. Atlantic herring would move from an age-structured stock assessment to one developed for data-poor species, and would be categorized as a data-poor species in need of sampling. Because ACCSP has funded this project, however, Atlantic herring are currently adequately sampled and are not scored by ACCSP. Given the most recent management changes, changes in the most recent stock assessment, ongoing litigation, and the importance to both state and federal partners, Atlantic herring would have scored very high in the process had it been part of the scoring for 2015.

Although ACCSP has not identified Atlantic mackerel as a priority, commercial catch sampling should be important given recent changes to the Squid, Mackerel, and Butterfish Plan as implemented by the Mid-Atlantic Council. Like Atlantic herring, fleet behavior may change markedly, as a result of bycatch quotas recently implemented. Traditionally the commercial mackerel catch was sampled by NMFS; however, due to the closure of port offices and limited personnel, current mackerel sampling is limited. With the existing and predicted growth in the domestic mackerel harvest, additional sampling is necessary to adequately cover the fishery.

Continued commercial catch sampling has been put forth as an imperative research need in the most recent menhaden assessment. Further importance has been placed on increased commercial catch sampling in the northern portions of the stock's range and in the bait fishery in general. This is particularly important as the menhaden assessment team analyzes the possibility of a dome, rather than the existing logistic function in selectivity for the northern bait fishery.

Because the Atlantic herring, Mackerel, and Menhaden fisheries encounter bycatch, this project also samples all species encountered during either the bycatch or commercial catch sampling modules. In particular, four species River herring (*Alosa sp.*), Atlantic menhaden (*Brevoortia tyrannus*), Spiny dogfish (*Squalus acanthias*), and Shad (*Alosa sapidissima*), are routinely encountered and samples for length, weight, and otolith/scales are forwarded to other institutions for age analysis. These four species represent 20% of the top quartile of ACCSP's FY 2016 Biological Sampling Priority Matrix.

Continued bycatch sampling

During at-sea operations NMFS observers use basket sampling to document occurrence of other species during targeted Atlantic herring and mackerel trips. These non-target species are then included in the data as retained or "Kept" (http://www.nefsc.noaa.gov/fsb/manuals/2013/NEFSC_Observer_Program_Manual.pdf). Normally, ten 50 lb. basket sub-samples are taken at regular intervals during the pumping process from net to hold. These samples are then checked for bycatch and the results expanded. Because the Atlantic herring fishery is a high volume fishery much of the bycatch is retained during the pumping process, particularly for co-occurring pelagic species such as river herring.

Until the spring of 2011 this was in contrast to the methods employed during the MEDMR port sampling procedure (see the *Approach* section of this document). During portside sampling, bycatch was measured in "lots" of ~40,000 lbs. During most sampling events, data were taken as a census of all bycatch in that lot. Only on rare occasions was a sub-sampling method, similar to NMFS protocols, used.

Analysis of more than ten years (2005-2014) of both portside and at sea bycatch data and results from the DMR, DMF and NMFS databases has revealed that sampling only portions or lot sampling of herring catches is not useful when comparing the portside and at-sea programs. Recent changes in both project protocol and the herring fishery have significantly altered this project's methods. In an attempt to more closely align our data with both the at-sea observer data and DMF portside data, we (DMR) have moved away from the practice of "lot" sampling, or looking intensively at a portion of a vessel's landings. The reasoning behind this stems from variability of catch composition in vessels with multiple fish holds. Fish being partitioned into separate holds may be from the same, different, or a mixture of multiple tows or sets. While lot

sampling has provided valuable spatial and temporal insights to bycatch distribution and frequency, it is unable to resolve variability between vessel holds. Sampling entire vessel offloads allows that variability to be reflected in the data.

During an Atlantic herring PDT (Plan Development Team) meeting for the NEFMC (June 15th, 2010), an examination of 52 co-sampled trips was performed by one of the authors of this proposal (Matt Cieri) and a collaborator from MA DMF (Steve Correia). It was noted that there was no correlation in river herring magnitude for co-sampled trips between at-sea and portside projects. Further, while the at-sea observers documented higher rates of bycatch of river herring, the frequency of occurrence was significantly higher in portside observations of the same trips. Analysis on transformed data suggested no significant differences using a pair t-test, but the power of that analysis was dramatically reduced because of low numbers of co-occurring sampled trips, and high degree of variability. This led to a discussion on the basket sampling methodology employed by NMFS and the lot sampling protocols by MEDMR. It was noted that some settling and stratification could occur between pumping into the hold and sampling of by portside monitors, either by truck or at the plant. It also led to a discussion on variability associated with the NMFS at-sea sampling protocols and if ten basket samples per haul were an accurate representation of the bycatch pumped on board.

Of the 52 co-occurring trips (2005-2009) between both portside and at-sea observers, only 28 had occurrences of river herring bycatch in one program or the other and were stretch across different gear types, areas, and seasons. This resulted in limited sample sizes to conduct a full analysis. Documented species in the other 24 trips were so variable that selection of another species for analysis was impossible. As such, analysis of this issue could be greatly enhanced with a directed portside study of trips which have been observed by NMFS at-sea samplers.

In 2012 MEDMR, with ACCSP funding, implemented concurrent sampling of Atlantic herring trips portside that had also been sampled by at sea observers. After 4 years, MEDMR had the required number of trips, by gear, area season, and year, to analyze the data and statistically determine if portside and at-sea sampling give similar results. Further analysis will be provided in the FY2015 & 2016 completion reports, but preliminary analysis suggests that since institution of lot sampling by MEDMR, results between portside and at-sea sampling are statistically similar for small bodied species in high volume fisheries.

Given the encouraging, but preliminary results, MEDMR is now proposing to use this newly revamped protocol and during routine portside bycatch monitoring of the Atlantic herring fishery. DMR's efforts, coupled with ongoing work by MA DMF and the NEFOPS program will help to increase sample sizes for determining bycatch amounts in the Atlantic herring fishery. While neither MEDMR or MA DMF portside programs are used to monitor bycatch quotas for haddock or River herring, data from both programs were used to set the River herring quotas by gear type (<http://s3.amazonaws.com/nefmc.org/160301-2016-2018-Herring-Specs-Formal-Submission.pdf>)

Additionally the NEFMC and Mid-Atlantic Fishery Management Council are examining industry funded portside sampling, coupled with electronic monitoring, for bycatch quota monitoring (<http://www.mafmc.org/actions/observer-funding-omnibus>). Given this and the overall reduction

in NEFOP coverage via SBRM, the need for continued portside bycatch monitoring is imperative.

Results and Benefits:

Commercial catch sampling

This program collects all the Atlantic herring directed samples from the U.S East coast fishery and a portion of all the collected mackerel and menhaden samples use in assessments of the stocks and management of the fisheries. Regarding the need for the work as stated above, if this project was not funded there are currently no other resources that would or could be shifted to collect samples for Atlantic herring or to perform the Atlantic herring and mackerel bycatch study. Menhaden is strictly an ASFMC managed species. The catch at age analysis would lack coverage for the full range of the fishery without this project.

Annually collected samples of Atlantic herring from the commercial fishery provide the cohort catch at age data for the SARC's periodic assessment of the herring population and are used to predict and define the ASMFC's (Atlantic States Marine Fisheries Commission) rolling spawning area closures and give evidence of overall health of the Coastal Stock Complex. All Atlantic herring sample data is uploaded to the ACCSP data warehouse. Commercial catch sampling can also provide insight into the biological and management processes that drive the stock and fishery. Recently an analysis was performed to examine changes in length at spawning for Atlantic herring. Results were presented to the ASMFC Atlantic Herring Section that is in the process of finalizing spawning relationship changes to account for a decrease in herring length at full maturation.

Maine DMR processes all commercial catch herring samples for the east coast fishery. DMR maintains a lab facility with the equipment and staffing necessary for processing more than 200 commercial herring samples a year. In addition, DMR provides staff oversight of the field sampling program and scientific analysis of the data generated from the program which is then fed directly into the assessment. Without the ACCSP funded program, samples would not be collected or aged, resulting in no catch-at-age information to inform the assessment. As such, Atlantic herring would move from an age-structured stock assessment to one developed for data-poor species, and would be categorized as a data-poor species in need of sampling. Because ACCSP has funded this project, however, Atlantic herring are current adequately sampled and are not scored by ACCSP.

In addition to sampling Atlantic herring and mackerel for the purposes of developing catch-at-age matrices, this program has provided biological samples for multiple research projects. Herring have been collected for the Gulf of Maine Research Institute acoustics project, the NEFSC's (North East Fishery Science Center) morphometrics study, genetics studies, and most recently stomach and fat content samples have been provided to various organizations to examine the role of climate change in nutritional content of herring. The commercial catch samples also provide the basis for determining the start date for the three Atlantic States Marine Fisheries Commission herring spawning closure areas (two along the Maine coast and one along the NH/MA coast).

Atlantic menhaden were added as a sample species in 2010. Menhaden can be collected as bycatch during herring operations as well as from a growing purse seine directed fishery for lobster bait in the Northeast. While the bulk of this fishery occurs in the Mid-Atlantic, there is a growing interest in

menhaden as a result of recent management changes in the Atlantic herring fishery. Bait landings of menhaden in Southern New England and the Mid-Atlantic have tripled in the past two years. Because menhaden stratify in latitude by age, a more complete sampling of the menhaden catch in the northern parts of its range may improve our understanding of the population dynamics of this important forage species.

The commercial catch sampling program funded historically by ACCSP has proven extremely successful and has provided important information to the fishery managers. The biological information on size, age, and maturation of herring feeds directly into the stock assessments for Atlantic herring, Atlantic mackerel, and Atlantic menhaden. ASMFC has routinely used the data collected from this project to implement management changes to herring spawning regulations, as well as to make other decisions with regards to allocation of quota among management areas.

Bycatch sampling

The data collected through the bycatch survey supplements the federal at-sea observer coverage program, as well as the MA DMF River Herring Avoidance Program, has vastly increases the amount of information available on bycatch in the herring fishery. This project will maintain and expand an effective and scalable method for the long-term monitoring of bycatch in the Atlantic herring fishery. A portside bycatch sampling methodology has been developed and tested, and has demonstrated the ability to observe high volumes of landed herring catch. Portside efforts will complement but not replace the NMFS at-sea observer coverage. This proposed bycatch survey represents a unique opportunity to collect data in an inexpensive but efficient and accurate way.

Beyond the immediate benefit to the NMFS, MA DMF, and MEDMR bycatch sampling in this fishery, the proposed project may provide guidance to other bycatch sampling programs in other fisheries. More importantly DMR's proposed portside sampling will augment the MA DMF and NEFOP efforts allowing for better estimation of River herring, haddock, and potentially other species caught as bycatch in the directed Atlantic herring fishery

Review of Previous Results:

This proposal is a continuation of an ACCSP funded herring sampling and combined portside bycatch survey. The project has evolved over the past several years in order to maximize the use of funds. Project history is shown in Attachment 2 and explains the evolution of the project, including the transition to an emphasis on portside bycatch sampling in conjunction to biological sampling along with a review of project costs. The Project for FY 15 has just ended so full analysis has yet to be completed, but the most recent semi-annual report is in Attachment 3.

Approach:

Commercial catch sampling of Atlantic herring, Atlantic mackerel and Atlantic menhaden

Commercial catch sampling will be conducted at herring and mackerel pumping and processing sites along the east coast. As a general rule commercial catch sampling occurs such that there is at least one sample per statistical area, per week, per gear type and generally meets NMFS protocols of one sample per 500 mt.

It should be noted that sampling is made regardless of permit category as long as the vessel called in as an Atlantic herring vessel for the day (as per NMFS protocols). In addition, and where practical,

bottom trawl vessels are also sampled. However, priority will be given to directed herring vessels (primarily purse seines and mid-water trawls) as they land the bulk of the quota.

The samplers will follow the existing protocol developed for commercial catch sampling of Atlantic herring (Attachment 4). This protocol complies with the guidelines laid out by ACCSP. Sample will be processed and aged by in-house staff, primarily Lisa Pinkham. Samples are processed for length; weight, maturity, and aged according to NMFS protocols (please see www.nefsc.noaa.gov/publications/crd/crd0406/crd0406.pdf Page 22). This information is uploaded to the ACCSP warehouse and is used for the assessment of Atlantic herring.

The same vessels that harvest Atlantic herring primarily pursue Atlantic mackerel on the east coast. Traditionally, when markets are available the pelagic fishing fleet transfers some of their effort from herring to mackerel in the winter and early spring. The samplers funded by this grant can easily collect mackerel by keeping in touch with the herring vessels that enter the mackerel fishery. Most of the ports where significant mackerel landings occur overlap with major herring ports; this is largely due to the fact that herring processing facilities are also capable of freezing mackerel. Sampling will follow the existing NMFS protocol for mackerel and the guidelines established by ACCSP (Attachment 4).

Atlantic menhaden sampling

Support for port sampling for Atlantic menhaden (*Brevoortia tyrannus*) is also requested. Currently, there have been increased menhaden catches in the New England Area when compared to previous years, and this trend is expected to continue. National Marine Fisheries Service in Beaufort, North Carolina has requested commercial samples from the northern extent of this stock's range (north of Cape Cod). Such sampling of the "snapper rig bait fishery" (Northeast purse seine) is also listed as a priority research initiative in the most recent menhaden assessment. Such samples are critical to the assessment process for Atlantic menhaden and in accurately estimating the catch at age. During our normal sampling of the Atlantic herring bait fishery, we will collect Atlantic menhaden samples primarily from purse seines using the protocols outlined by NMFS, Beaufort (Attachment 4) and forward scales and measurements for use in the next assessment. Sampling targets for menhaden could not be derived because of the exploratory nature of this sampling and the uncertainty in the effort placed on this stock north of Cape Cod; where our sampling effort will be directed.

Bycatch sampling

The herring industry has changed tremendously in the last five years resulting in a much more centralized distribution structure. Generally, the herring used for bait goes through a wholesale dealer to smaller dealers and lobster wharfs along the coast. The wholesale dealers have facilities where they sort, barrel, freeze and store bait for redistribution. It is at these sites where effective bycatch surveys can also be done, thereby including the bait sector in this study. Herring is also landed at larger centralized processing plants which may process for a food grade market for export or for direct sale into the regional bait market.

The sampling takes place at centralized processing plants and bait dealers. A goal of observing 2 trips per month January through May and one or two trip per week during the June-Oct time period (when the fishery is most active) is proposed. Trip selection will be hap hazard, with an overall goal of

sampling multiple gears and management areas each month and to scale bycatch sampled trips with the activity of the fishery.

The samplers will quantify bycatch from individual off-loadings that enter the processing and bait plants according to a NMFS specified protocol. The total weight of any observed bycatch will be recorded along with species identification, total species weight, individual lengths and weights of all fish or a representative sub-sample. The total estimated bycatch weight by species will then be compared to census sampling by MA DMF and/or at sea basket sampling conducted by NEFOP as appropriate.

Using existing MEDMR protocols (Attachment 5) and in close concert with NMFS observers and MA DMF portside samplers, staff will directly target trips that have been observed by either of those two programs. Where possible, and as practicable, staff will also conduct a full census of landed bycatch from full offloading events (trips) which have also been sampled at-sea; thereby allowing a direct analysis and validation of current at-sea bycatch monitoring methods. Particular emphasis will be placed on sampling those trips, using current MEDMR methods that had both NMFS and MA DMF bycatch sampling.

Once the data are collected, they will be housed and archived in a MEDMR relational database. Data requests and queries will be performed to assist in monitoring quotas, should the need arise, as well as to provide bycatch information to the NEFMC Plan Development Team, NMFS, and other interested parties.

Geographic Location and Temporal Distribution of Effort:

Sampling will occur in ports from Prospect Harbor, ME to Cape May, NJ, and reflect landings and effort from NC, through ME. Efforts will be coordinated with the NMFS NEFMC in Woods Hole, NMFS, Beaufort, NC, MA, MA DMF, NH F&G, and RI, DEM, and other state agencies throughout the range of the herring and mackerel fisheries. Staff will be based out of the MEDMR Boothbay Harbor lab facility. Because of herring and mackerel availability to the fishery, market conditions, and other factors, it is difficult to pinpoint where the fleet maybe landing at any given time. Sampling will thus occur after direct contact with vessel captains and plant managers to identify where sampling should take place.

In general herring biological and bycatch sampling is primarily conducted spring, summer, and fall, with some effort during winter months. Mackerel sampling occurs primarily in the winter months; and it's anticipated that menhaden sampling will occur in the late summer to early fall. Bycatch sampling and commercial sampling become more infrequent in the winter months, while travel to get to the landing sites increases. Report writing and data analysis occur between regular commercial and bycatch sampling.

Data Management:

Data collected through this study are regularly entered into the MARVIN biological database housed at MEDMR. Data are first entered into MARVIN and run through Quality Assurance/ Quality Control (QA/QC) routines to insure accurate reporting.

Metadata will be created with ArcCatalog in order to conform to the (Federal Geographic Data Committee (FGDC) standards and specifications. Created metadata will be available in text and XML formats.

Milestone Schedule:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Catch Sampling-HERR	x	x	x	x	x	x	x	x	x	x	x	x
Catch Sampling-MACK	x	x	x	x	x							x
Bycatch Sampling-co-occurring NMFS	x	x	x	x	x	x	x	x	x	x	x	x
Analysis	x	x	x	x	x	x	x	x	x	x	x	x

* - Upon request, MEDMR will provide bycatch sampling data on a state by state basis three times a year.

Project Accomplishment Measurement

Commercial Catch Sampling

Atlantic herring At Least 10% sampled trips by gear type and month

Atlantic mackerel At Least 10% sampled trips by gear type and month

Bycatch Sampling

Atlantic herring At least 40 trips sampled by area, gear type and quarter

FY 2017 Budget & Narrative

Cost Summary: Portside bycatch sampling

Personnel Services	Description	ACCSP
All Other		
Field Equipment		
	PROJECT VEHICLE 12 months	295/mo \$ 3,600
	Mileage fee	31000 @ \$.21/mi \$ 6,510
Travel Expenses		
	Toll allowance	\$ 150
	35 Overnight stays	\$102/night \$ 3,570
	Per diem (includes extended days)	\$50/day \$ 2,750
Office Supplies & Minor Equipment^A		
	2 Cell Phones	2 \$50/month \$ 1,200
	1 air card	1 \$75/month \$ 900
	Sampling Gear	\$ 800
	Lab Supplies	\$ 500
	Subtotal	\$ 19,980
	Total Direct Costs	\$ 19,980
	Indirect Costs (25%)	\$ 4,995
	Award to DMR	\$ 24,975

A: The state specifies that its employees have all IT expenses and support managed by the Office of Information Technology. Fees are non-negotiable.

Partner Contribution – For ACCSP Purposes

Scientist IV (20% time)	\$20,000
Scientist III (25% time)	\$15,000
Specialist II 100% time)	\$84,000
<u>Specialist I (25%)</u>	<u>\$12,000</u>
Total	\$131,000

Future Project Needs:

This project is designed to benefit all states from Maine to New Jersey, ASMFC and federal management agencies including the NEFMC and NMFS. While accessory funding is available for FY 17 to cover all personnel costs, MEDMR continues to pursue long-term and permanent funding for this project through a commitment made by the participating states and the federal government. Additionally, the New England Fishery Management Council is examining industry funded at-sea

observer monitoring in herring and other fisheries. Part of the discussion has included the possibility of industry funding port-side monitoring. MEDMR is engaged in these discussions.

Budget Narrative:

Personnel and Fringe Benefits: Because of state funding resources, we are not requesting to fund either the Specialist II (James Becker) or the Specialist I (Lisa Pinkham) as we have in past years. This represents shift in the project from mostly ACCSP funded, to mostly State funded.

Travel and vehicles

Travel is requested for 35 trips overnight. The exact number of trips will depend of fleet activity and port of landing. A small utility 4x4 truck is proposed for safety reasons during winter sampling in remote locations, as well as to haul equipment from time to time. Central fleet for the State of Maine stipulates rates, and private rentals are prohibited by state policies. Current request reflects a recent policy change by Central Fleet to charging less per month, but increasing the mileage rate for trucks.

Office Supplies & Minor Equipment

Two cell phones and an “Air card” are requested. One cell phone is for the sampler to contact vessels and to coordinate with NEFOP and MA DMF personnel. A second phone is request for the supervisor to provide direction if needed and to allow for communication in case of an emergency. An air card is also requested which allows the user to connect to the State network from any location with cell phone coverage. Air cards allow for the efficient entry of data while waiting for vessels to land, along with allowing access to the VMS system to better pin point landing events.

Other Lab and Sampling supplies include baskets for sampling, scale calibration, rain gear, water proof paper, sample boxes, safety equipment, and other items

Indirect costs: The Department of Marine Resources has an indirect cost rate of 25%. See Attachment 6 for the Negotiated Indirect Cost Agreement.

Attachment 1: FY 2016 Budget & Narrative

As proposed

Cost Summary: FY15 Portside commercial catch sampling and comparative bycatch sampling

Personnel^A	Discription	Cost
1 Specialist II (Becker)	full time position for 12 months	\$43,197
1 Specialist I (Pinkham)	full time position for 4 months	\$12,221
	Subtotal	\$55,418
Fringe Benefits^A		
	Includes health, dental, workers comp, FICA, life insurance and retirement	
1 Specialist II (Becker)		\$26,593
	Includes health, dental, workers comp, FICA, life insurance and retirement	
1 Specialist I (Pinkham)		\$7,974
	Subtotal	\$34,567
	Total Personnel	\$89,985
Travel		
1 seasonal vehicle ^B	1 pickup * \$295/mo * 12 mo	\$3,540
Mileage fee	1 pickup * 30,000 mi * \$.21/mi	\$6,300
Toll allowance	Estimated	\$150
35 Overnight stays ^C	35* \$102/night	\$3,570
Per diem (includes extended days)	20 * \$50/day	\$1,000
Other		
Sampling Gear	Electronic scales, baskets, etc.	\$1,200
Lab Supplies	Lab supplies	\$1,200
Telecommunication charges ^D	2 phones * \$50/mo * 12 mo	\$1,200
1 Air Card	\$75 * 12 mo	\$900
	Subtotal	\$19,060
Total Direct Costs		\$109,045
Indirect Costs (25%)		\$27,261
Total Award to DMR		\$136,306

A: Cost includes salary and benefits, which are dictated by contract with State of Maine and are non-negotiable.

B: All state agencies must rent vehicles through state's Central Fleet Agency which is non-negotiable. Vehicle costs include the following services and costs: maintenance, repairs, insurance, and gasoline.

C: DMR staff travel as far as New Jersey.

D: One cell phone for the Specialists II and one each for the project leader.

Partner Contribution – For ACCSP Purposes

Scientist IV (20% time)	\$20,000
Scientist III (25% time)	\$15,000
<u>Specialist I (25%)</u>	<u>\$12,000</u>
Total	\$47,000

REVISED 5/3/2016

Budget 7/1/16 - 6/30/17			
Cost Summary: Portside bycatch sampling			
All Other:			
Travel Expenses			
PROJECT VEHICLE 12 months	295/mo	\$	3,540
Mileage fee	31000 @ \$.21/mi	\$	6,510
Toll allowance		\$	150
35 Overnight stays	\$102/night	\$	3,570
Per diem (includes extended days)	\$50/day	\$	1,750
		\$	<u>15,520</u>
Office Supplies & Minor Equipment^A			
2 Cell Phones	2 @ \$50/month	\$	1,200
1 air card	1 @ \$75/month	\$	900
Sampling Gear		\$	800
Lab Supplies		\$	465
		\$	<u>3,365</u>
Total Direct Costs		\$	18,885
Indirect Costs (25%)		\$	4,721
Award to DMR		\$	23,606
A: The state specifies that its employees have all IT expenses and support managed by the Office of Information Technology. Fees are non-negotiable.			

Budget Narrative: 2016 (as proposed)

Personnel and Fringe Benefits: One full time Specialist II (James Becker) funded at 100% and one part-time Specialist I (Lisa Pinkham) funded at 33%. These positions are Department of Marine Resources' employees (not contract workers). Salaries and benefits for these employees are dictated by contract with the State of Maine and are non-negotiable. Benefits include retirement benefits, FICA, health insurance, dental insurance, workers' compensation and life insurance. The benefits are determined by a formula the state uses which is variable dependent upon the position classification, the pay grade of the employee (e.g. the number of years the person has been employed by the State of Maine) and type of coverage the employee selects. Currently, the State of Maine has re-constituted merit increases for FY15. As such these costs are reflected in this budget.

From approximately July until October the fleet generally land s in Maine as well as NH/MA simultaneously. As such two people are required to adequately sample and perform bycatch duties during this time.

Travel and vehicles

Travel is requested for 35 trips overnight. The exact number of trips will depend of fleet activity and port of landing. A small utility 4x4 truck is proposed for safety reasons during winter sampling in remote locations, as well as to haul equipment from time to time. Central fleet for the State of Maine stipulates rates, and private rentals are prohibited by state policies. Current request reflects a recent policy change by Central Fleet to charging less per month, but increasing the mileage rate for trucks.

Office Supplies & Minor Equipment

Two cell phones and an “Air card” are requested. One cell phone is for the sampler to contact vessels and to coordinate with NEFOP personnel. A second phone is request for the supervisor to provide direction if needed and to allow for communication in case of an emergency. An air card is also requested which allows the user to connect to the State network from any location with cell phone coverage. Air cards allow for the efficient entry of data while waiting for vessels to land, along with allowing access to the VMS system to better pin point landing events.

Other Lab and Sampling supplies include baskets for sampling, scale calibration, rain gear, water proof paper, sample boxes, safety equipment, and other items

Indirect costs: The Department of Marine Resources has an indirect cost rate of 25%. See Attachment 6 for the Negotiated Indirect Cost Agreement.

Attachment 2: Project history

YEAR	TITLE	COST	Rational/Emphasis	RESULTS
2001	Commercial catch sampling of Atlantic herring	\$52,299	catch sampling, herring	expanded sampling of herring
2002	Commercial catch sampling of Atlantic herring	\$67,168	catch sampling, herring	herring and mackerel sampling
2003	Commercial catch sampling of Atlantic herring and other northeast fisheries	\$67,168	catch sampling, herring	herring, mackerel and halibut
2004	Commercial catch sampling and bycatch survey of the northeast Atlantic herring fishery	\$70,441	catch sampling, herring and mackerel	herring, halibut, mackerel and pilot portside bycatch sampling
2005	Commercial catch sampling and bycatch survey of two pelagic fisheries	\$69,949	catch sampling, herring and mackerel	herring, halibut, mackerel and pilot portside bycatch sampling
2006	Portside bycatch sampling and commercial catch sampling of the Atlantic herring and Atlantic mackerel fisheries	\$104,633	portside bycatch survey herring and mackerel catch sampling	herring and mackerel portside bycatch at 5% level and catch sampling
2007	Portside bycatch sampling and commercial catch sampling of the Atlantic herring and Atlantic mackerel fisheries	\$108,891	portside bycatch survey herring and mackerel catch sampling	herring and mackerel portside bycatch at 5% level
2008	Portside bycatch sampling and commercial catch sampling of the Atlantic herring and Atlantic mackerel fisheries	\$116,300	portside bycatch survey herring and mackerel catch sampling	herring and mackerel portside bycatch at 5% level
2009	Portside bycatch sampling and commercial catch sampling of the Atlantic herring, Atlantic mackerel, and Atlantic menhaden fisheries	\$105,985	portside bycatch survey herring and mackerel catch sampling	herring and mackerel portside bycatch and commercial catch sampling and bycatch at 5% level

2010	Portside bycatch sampling and commercial catch sampling of the Atlantic herring, Atlantic mackerel, and Atlantic menhaden fisheries	\$84,451	portside bycatch survey herring and mackerel catch sampling	herring and mackerel portside bycatch and commercial catch sampling and bycatch at 5% level
2011	Portside bycatch sampling and commercial catch sampling of the Atlantic herring, Atlantic mackerel, and Atlantic menhaden fisheries	\$174,778	portside bycatch survey herring and mackerel catch sampling	herring and mackerel portside bycatch and commercial catch sampling and bycatch at 5% level
2012	Portside commercial catch sampling and comparative bycatch sampling for Atlantic herring (<i>Clupea harengus</i>), Atlantic mackerel (<i>Scomber scombrus</i>), and Atlantic Menhaden (<i>Brevoortia tyrannus</i>) fisheries	\$0	portside bycatch survey herring and mackerel catch sampling	Funds were not requested because of previous cost saving measures; allowing for the continuation of the previous work with no added costs.
2013	Portside commercial catch sampling and comparative bycatch sampling for Atlantic herring (<i>Clupea harengus</i>), Atlantic mackerel (<i>Scomber scombrus</i>), and Atlantic Menhaden (<i>Brevoortia tyrannus</i>) fisheries	\$113,774	portside bycatch survey herring and mackerel catch sampling	herring and mackerel portside bycatch and commercial catch sampling and bycatch at 5% level
2014	Portside commercial catch sampling and comparative bycatch sampling for Atlantic herring (<i>Clupea harengus</i>), Atlantic mackerel (<i>Scomber scombrus</i>), and Atlantic Menhaden (<i>Brevoortia tyrannus</i>) fisheries	\$130,599	portside bycatch survey herring and mackerel catch sampling	herring and mackerel portside bycatch and commercial catch sampling and bycatch at 5% level
2015	Portside commercial catch sampling and comparative bycatch sampling for Atlantic herring (<i>Clupea harengus</i>), Atlantic mackerel (<i>Scomber scombrus</i>), and Atlantic Menhaden (<i>Brevoortia tyrannus</i>) fisheries	\$136,306	portside bycatch survey herring and mackerel catch sampling	herring and mackerel portside bycatch and commercial catch sampling and bycatch at 5% level. Final analysis Ongoing
2016	Portside commercial catch sampling and comparative bycatch sampling for Atlantic herring (<i>Clupea harengus</i>), Atlantic mackerel (<i>Scomber scombrus</i>), and Atlantic Menhaden (<i>Brevoortia tyrannus</i>) fisheries	\$23,606	portside bycatch survey herring and mackerel catch sampling	Ongoing:

Proposed ACCSP Ranking

Proposal Type: Maintenance

Primary Program Priority and Percentage of Effort to ACCSP modules:

Biological Sampling (8 Points): Although Atlantic herring is missing from the top quartile of the Biological Matrix a correct scoring would certainly adjust it to that level. The score would rise to the top of the matrix with the elimination of biological sampling.

Bycatch/Species Interaction (6 Points): Mid-Water trawl gear targeting Atlantic herring and mackerel is currently the most scrutinized for bycatch of river herring and groundfish. Amendment 5 of the Atlantic herring FMP is calling for added increase in bycatch monitoring.

Metadata (2 Points): will be created with ESRI ArcCatalog 10 in order to conform to the FGDC standards and specifications. Created metadata will be submitted to ACCSP in text and XML formats.

Project Quality Factors:

Regional Impact (5 Points): all partners will benefit, as the all data collected will be uploaded to ACCSP. Regional management organizations, such as ASMFC, will benefit from the biological and bycatch information from the proposed project.

Funding transition plan (4 Points): MEDMR will continue to seek alternative sources of funding in order to further transition from ACCSP grant money.

In-kind Contribution (2 Points): the partner contribution is listed below the budget.

Improvement in Data Quality/Timeliness (4 Points): Data collected through this study are regularly entered into the MARVIN biological database housed at MEDMR. Data are first entered into MARVIN and run through QA/QC routines to insure accurate reporting. The biological sampling data is uploaded to the ACCSP data warehouse on a regular basis.

Potential secondary model (4 Points) Data collected through this proposed project is used in assessment and management of river herring, Atlantic herring, Mackerel, and menhaden as outlined to the expected benefits section

Impact on Stock Assessment (3 Points): Regional management organizations which carry out stock assessments would benefit from the detailed biological sampling and bycatch data. This information could be used in stock assessments for many species that are managed by regional agencies.

Properly Prepared (5 Points): MEDMR followed ACCSP guidelines and pertinent documents when preparing this proposal.

Attachment 3: FY2015 semi Report

**Maine Department of Marine Resources
Bureau of Resource Management
West Boothbay Harbor, Maine**

**Atlantic Coastal Cooperative Statistics Program
Grant No. NA14NMF4740360
(DMR#4077)**

**Portside Bycatch Sampling and Comparative Sampling
for Atlantic Herring (*Clupea harengus*), Atlantic
Atlantic Mackerel (*Scomber scombrus*),
and Atlantic Menhaden (*Brevoortia tyrannus*) fisheries**

Semi-annual Report

July 1, 2015 – December 31, 2015

Submitted by:

**James Becker
Maine Department of Marine Resources
P.O. Box 8, 194 McKown Point Road
West Boothbay Harbor, ME 04575
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(207)-633-9545**

January 12, 2016

Project Background

The Atlantic herring (*Clupea harengus*) (Linnaeus, 1758) is one of the most biologically and economically important species in the Northwest Atlantic. They play a pivotal role in the food web, and are a primary forage species for economically important sport and commercial fisheries, including groundfish, tuna, striped bass, bluefish, and are a primary component of the diets of marine mammals and birds (Power and Iles, 2001).

Herring are a migratory species, which aggregate in large schools, feed on plankton, and are found between Labrador and Cape Hatteras along coastal and continental shelf waters (Colette and Klein-MacPhee, 2002). Migration patterns are seasonally based with adults (≥ 3 years) moving south during the autumn from the Gulf of Maine (GOM) spawning grounds to spend the winter off southern New England and the Mid-Atlantic states. During the spring, adult herring return to the GOM, where they spend the summer months (Kanwit and Libby, 2009).

Since the 17th century juvenile herring have been part of a significant commercial fishery from New Brunswick to Massachusetts. During the 1980s the emergence of a large-scale fishery occurred on Georges Bank (GB), in the GoM, southern New England and Mid-Atlantic waters (Overholtz, 2002). Commercial landings are currently around 150 million pounds annually with 90 percent supporting the lobster (*Homarus americanus*) bait market. Herring is the primary bait of the approximately \$500 million per year New England lobster industry (National Marine Fisheries Service, 2015).

The Maine Department of Marine Resources (DMR) has collected and processed Atlantic herring commercial catch samples since 1960. Sampling was historically carried out with the cooperation of processors (canneries) and the National Marine Fisheries Service (NMFS). This system of sampling the commercial catch resulted in incomplete coverage of the fishery and insufficient collection of population data. DMR secured funding to hire a dedicated sampler in an effort to improve the commercial catch sampling program.

After the completion of a successful pilot study in late 2003, the DMR initiated an exploratory portside bycatch survey of the Atlantic herring fishery in 2004. This project was created in response to the lack of bycatch data available for the directed herring fishery. Interestingly, in 2004, NMFS received funding to expand their at-sea observer coverage of the herring fishery. In 2008 following in suit, Massachusetts Department of Marine Fisheries (MADMF) began their own portside bycatch program. Still, in a large volume fishery statistically significant sampling levels are hard to achieve. The Maine DMR portside bycatch program now complements both the MADMF portside program and the NMFS at-sea observer program by providing expanded coverage of the herring fishery and validation of the at-sea observer data.

Upon accruing and analyzing more than ten years of both portside and at-sea bycatch data, results have revealed that sampling only portions or lot sampling of herring catches is not significantly

different ($P < 0.05$) when comparing the three independent programs (Dean, 2011). In the spring of 2011 changes to both project protocol and the herring fishery drastically altered this project from its initial focus.

In an attempt to more closely align our data with MADMF's portside bycatch program and NMFS at-sea observer data, we moved away from the practice of "lot" sampling, or looking intensively at a portion of a vessel's landings. The reasoning behind this stems from variability of catch composition in vessels with multiple fish holds. Fish being partitioned into separate holds may be from the same, different, or a mixture of multiple tows or sets. While lot sampling has provided valuable spatial and temporal insights to bycatch distribution and frequency, it is unable to resolve variability between vessel holds. Sampling entire vessel offloads eliminates that variability.

In accordance with these changes, our sampling efforts have shifted to sampling direct vessel offloads, targeting sites with suitable infrastructure and accessible dewatering boxes or offload pipes (used to distribute fish into a processing facility). This was problematic at first, as few sites offered adequate working space, and concerns over safety eliminated some options. We currently have 11 sampling sites. In September of 2011 the completion of a safe and accessible sampling platform was attached to a dewatering tower in Portland and has allowed for increased sampling coverage to our domain. Successful offload sites in Maine where whole boatloads can be sampled are currently: Jonesport, Prospect Harbor, Stonington, Rockland, Phippsburg, and Portland. More suitable sites for sampling entire offloads for the winter herring fishery (Southern New England to Cape May, NJ) have been compiled and assessed for feasibility. In November of 2011 the fabrication and installation of an additional sampling platform was completed and attached to a dewatering box in New Bedford, MA.

In addition to our already modified dewatering tower in Point Judith, RI, which has been part of the portside bycatch sampling rotation since 2009, a second accessible tower was completed in Point Judith in December of 2012, bringing our total sampling sites to eleven. Lund's, LLC, in Cape May, NJ has had a suitable facility for one person to sample entire herring and mackerel offloads since 2005 and will continue be part of our winter sampling rotation.

Coordination and execution of the portside bycatch survey started in 2004. Fifteen sites from Maine to Cape May, NJ were originally identified and then visited to assess suitability. Since the recent shift in protocol in the spring of 2011, a total of 11 sites are currently part of the bycatch survey (Figure 1). At each site the survey method details were explained to industry members, including what data are collected and how the data are processed and released.

Because of changes in protocols and because of a reduction in the number of possible sampling sites from 15 to 11, our original goal of covering 5% of the landings has been a challenge. Focusing sampling efforts on entire boat loads has limited our sampling locations. To add to this challenge, in 2011 we began focusing more sampling effort on the small mesh bottom trawl (SMBT) fleet out of Point Judith, RI. These particular vessels hold a fraction of the volume the off shore mid-water trawlers can hold, therefore focusing sampling on SMBT limits the amount of tonnage sampled. For example, if an off shore mid-water trawler lands 500,000lbs of herring on the same day a SMBT is sampled that lands only 50,000, then the sample volume is a significantly smaller.

NOAA conducted a series of workshops to gather more information on the status of alewife and blueback herring, collectively known as river herring, in the Northeast. NOAA has been working closely with the Atlantic States Marine Fisheries Commission (ASMFC) to use information contained in their river herring stock assessment (May, 2012) and the best available information to help make a determination as to whether these species should be listed under the Endangered Species Act. Several areas where additional information was needed included stock structure, extinction risk, and the impact of climate change on these species. NOAA held three workshops in June and July of 2013 to gather more information on each of these areas (NOAA Fisheries Northeast Regional Office: Protected Resource Division, Aug 2013).

Due to the potential listing of river herring as an endangered species and the inevitable mandate of river herring bycatch quotas within the Atlantic herring fishery, an analysis and comparison between overlapping trips from at-sea and portside observed trips was added to this project in 2012, looking exclusively for significance of the presence of river herring. This test and comparison was also useful to examine methodological differences between the two programs and addressing which methods could be aligned to better document bycatch of many species.

Objectives

1. Continuation of the portside bycatch survey
 - a. Expand the coverage of landed herring, and mackerel monitored for bycatch.
 - b. Increase the number of co-occurring sampling trips between MEDMR's portside bycatch sampling and the NMFS at sea observer sampling program.
2. Continuation of commercial catch sampling and species upon request

Methods

All bycatch sampling events were arranged with the participating sites along with a request of their processing schedule. A sampling event started when the fish were delivered either by boat or on occasion truck to the dewatering tower and or facility. As the fish were sorted, the bycatch was removed and set aside. Each boat load was processed separately with the catch amount, gear type, NMFS Statistical Area and date of capture recorded and the VTR number was collected as suitable.

After the bycatch was sorted, all species were identified and separated. Each species was then weighed and a random sub-sample (n=50) was taken if necessary. All individuals (of the entire sample or sub-sample) were measured and recorded on a length frequency log.

It is important to note that for the purpose of this progress report all non-targeted species (i.e. anything but Atlantic herring) are referred to as bycatch. This includes species such as shad, alewives and blueback herring (river herring), Atlantic mackerel, and squid that are classified as incidental catch in the herring fishery.

For the analysis and comparison of the co-occurring trips (Objective 1b) three methods to date were conducted to find the most statistically sound approach, each with multiple criteria that were used to determine the significance between the trips.

Method 1 used Welch's two tailed t-test assuming unequal variance, with a hypothesized difference of zero between the percent composition of the common bycatch species found between the two programs ($P < 0.05$). Regardless of how many hauls were made at-sea for each trip, all the baskets were summed together, without treating each haul separately, into a single trip. For example, if 10 baskets were collected on haul one and 10 on haul two, all 20 total baskets were treated as the entire catch and compared to the total amount of baskets collected portside for the same herring trip within one t-test.

Method 2 used a bootstrap replacement technique (1000 iterations for both programs), and compared the overlap of the 95% confidence intervals (2.5% and 97.5%) of each program of the bycatch species percent compositions, along with combining all the baskets from each haul from the at-sea trip, as was done in Method 1.

Method 3, designed by Micah Dean (Dean Method) of MADMF, involved calculation of composition and variance of bycatch species per haul, per at-sea trip, combining the individual variances into a single array representing the entire catch, and then conducting a modified t-test for significance between both programs ($P < 0.05$). Since this particular method needed a customized significance test to compensate for the individual tow compositions at-sea per trip, the sample means and variances were replaced with the total estimated bycatch per trip (w), and the variance of those estimates ($V(w)$) written as:

$$t = \frac{w_1 - w_2}{\sqrt{V(w_1) + V(w_2)}}$$

Among all three methods listed above, three universal criteria were shared. The first criteria was used if a specific bycatch species was absent in the sample baskets between both programs for the same trip (see 2013 proposal for details of basket sampling). For example, if a certain trip lacked alewife in the sample baskets for portside data and the at-sea data, then the results would state there was no significant difference between the two trips, noted as (-,-). The second was if a bycatch species was found only in one of the programs, noted as (+,-) for presence at-sea only, and (-,+) for portside only, deeming that specific trip significantly different. Lastly, on occasion a scenario arose where the at-sea program was unable to identify what type of river herring species was landed (either an Alewife or Blueback herring), therefore nullifying the possibility of a comparison, noted as (NK,+) NK standing for "not known".

Atlantic herring commercial catch samples that were collected during either portside bycatch surveys or directly from the fishing vessel's hold were transported to DMR where they were processed for length, weight, age (using otoliths), sex, gonad stage/maturity, and stomach contents/weight. Data are then entered into a database and are available for statistical analysis as part of an ongoing NOAA interstate fisheries grant.

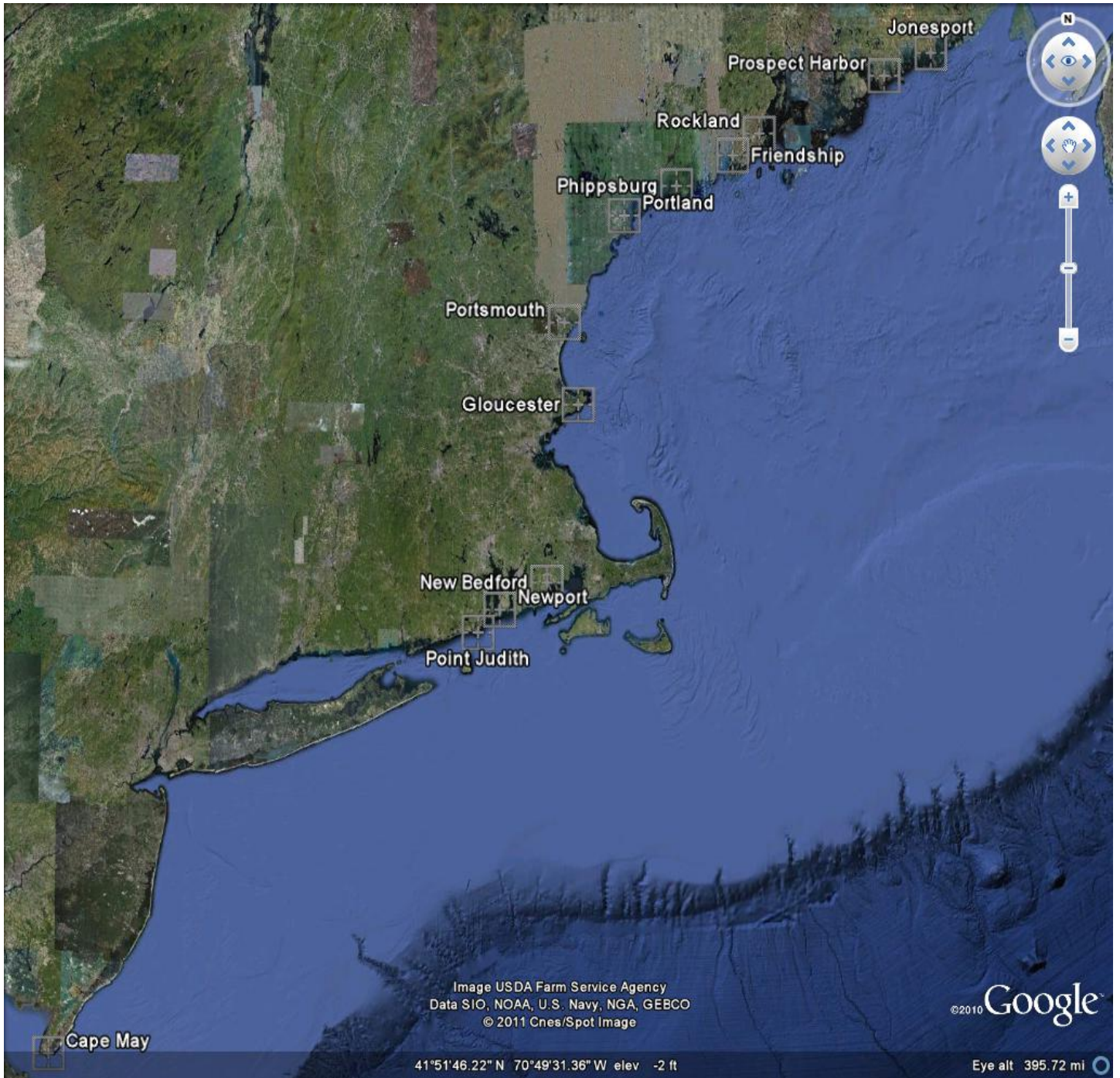


Figure 1: Range and locations of herring catch samples and bycatch studies.

Results

Objective 1a: Portside Bycatch sampling of Atlantic Herring and Mackerel

Atlantic herring

Twelve herring bycatch studies were completed from July 1, 2015–December 31, 2015. Over the course of this time period four gear types were sampled; purse seine (PS), pair mid-water trawl (PMWT), single mid-water trawl (SMWT), and small mesh bottom trawl (SMBT). Six bycatch studies were conducted on PS, 3 on SMWT, 2 on SMBT, and 1 on a PMWT (Figure 2).

For this specific time period the US Atlantic herring fishery landings were approximately 33,934 t (NOAA Quota Monitoring Website 2015) and a total of 1,073 t of herring was sampled for bycatch (Table 1a). The total weight of documented bycatch (including all incidental catches) was 36.11 t. The total percent of documented bycatch was 0.34%. The overall mean percentage of bycatch per individual study was 1.13%, with a standard deviation of 1.94%, a minimum of 0.00% and a maximum 5.23% (Table 1b). Eight species of bycatch were documented (Table 2).

Three NMFS Statistical Areas were sampled for Atlantic herring bycatch for this particular timeframe (Figures 3 and 6). Area 539 off southern New England contained the largest amount of bycatch, approximately 72.71% of the total documented bycatch. Area 512 off mid-coast Maine contained the least, about 2.55%.

Atlantic mackerel (*Scomber scombrus*), the most abundantly encountered bycatch species, made up about 68.74% of the bycatch, and 0.24% of the total Atlantic herring sampled (Table 2 and Figure 3). The bulk of the mackerel was landed in Area 539 off southern New England, with most of the remaining landed in the GoM in Area 513.

Squids, a combination of two cephalopods; northern short-fin squid (*Illex illecebrosus*) and long-fin squid (*Doryteuthis pealeii*) accounted for approximately 15.06% of the documented bycatch and about 0.05% of the total weight sampled. Squid were documented mostly in Area 539, with a small portion documented in the GoM in Area 513 (Table 2 and Figure 3).

River herring (RH), a category of anadromous fish containing both Alewife (*Alosa pseudoharengus*) and Blueback herring (*A. aestivalis*) made up about 8.88% of the bycatch and 0.03% of the total sampled Atlantic herring (Table 2 and Figure 3). All of the RH was caught in Area 539 near Block Island Sound.

Silver hake (*Merluccius bilinearis*) accounted for approximately 3.99% of the total documented bycatch, and about 0.01% of all the Atlantic herring sampled (Table 2 and Figure 3). The bulk of this species was documented in the GoM in Area 512 and 513.

Windowpane flounder (*Scophthalmus aquosus*) made up roughly 2.25% of the bycatch and approximately 0.01% of the sampled herring (Table 2 and Figure 3). Windowpane flounder were found only in Area 539.

Butterfish (*Peprilus triacanthus*) comprised about 0.84% of the total bycatch, and less than 0.01% of the total herring sampled (Table 2 and Figure 3).

Lastly, American shad (*Alosa sapidissima*) accounted for approximately 0.23% of the total bycatch, and less than 0.01% of the herring sampled. All shad were landed in Area 539 (Table 2 and Figure 3).

Note that all length frequencies for all species other than squids will be provided in the next annual report.

The species encountered as bycatch varied spatially by NMFS Statistical Area, however conclusions drawn from this regarding the spatial nature of the bycatch encountered should be interpreted cautiously due to the small sample size (Figure 3). It is important to remember that bycatch in the herring fishery can be episodic, and can be isolated to one fishing event in one specific spatial location.

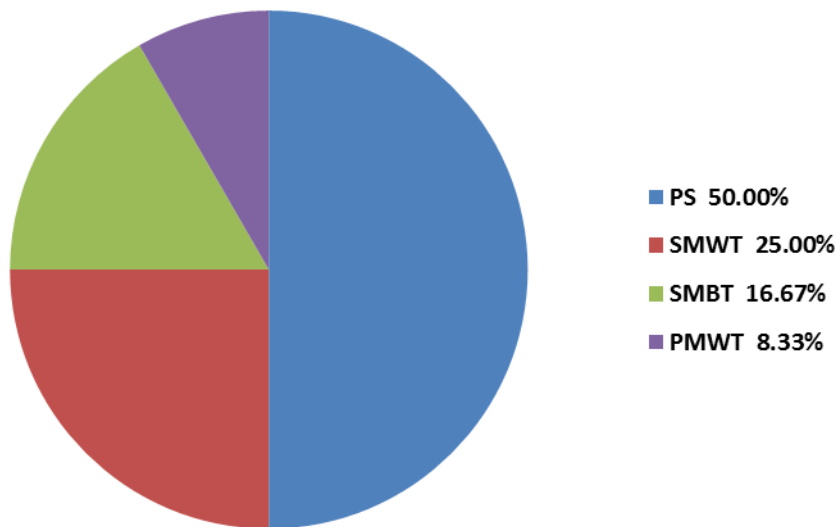


Figure 2. Percentage of herring bycatch studies by gear type, July 1, 2015–December 31, 2015

Table 1. Atlantic herring bycatch data July 1, 2015–December 31, 2015

a. Bycatch Data by Total Landings and Total Sampled	
Total Landings (t)	33,934
Total Sampled (t)	1,072.52
% of Total Landings Studied	3.16
Total Bycatch (t)	3.67
% Bycatch in Total Sample	0.34
b. Bycatch Data per Sampling Event	
Mean % Bycatch	1.13
Maximum % Bycatch	5.23
Minimum % Bycatch	0.00
Standard Deviation	1.94

Table 2. Documented bycatch including incidental species, July 1, 2015–December 31, 2015

Species	Total Weight (kg)	% Total Bycatch	% Bycatch in Herring
Atlantic mackerel	2,524.82	68.74	0.235
Squids	553.02	15.06	0.052
River herring*	326.17	8.88	0.030
Silver hake	146.63	3.99	0.014
Windowpane flounder	82.68	2.25	0.008
Butterfish	30.84	0.84	0.003
American shad	8.6051	0.23	0.001
Total	3672.7522	100.00	0.342

*A category of anadromous fish containing both Alewife (*Alosa pseudoharengus*) and Blueback herring (*A. aestivalis*)

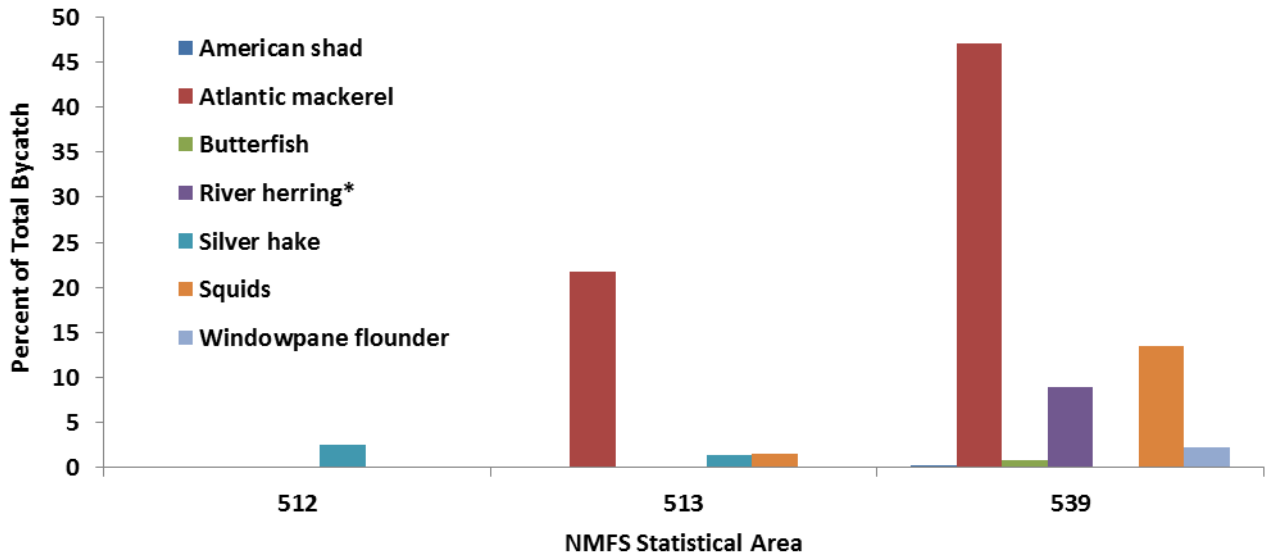


Figure 3. Documented bycatch species percentages by NMFS Statistical Area, July 1, 2015–December 31, 2015

Atlantic mackerel

It is important to note that over the past ten years Atlantic mackerel landings have been relatively low. The Atlantic mackerel season is a winter fishery that usually starts in late December and ends in the late spring. Due to very low mackerel landing activity, for not only this time frame, but in general, zero portside bycatch studies were conducted (Figure 4).

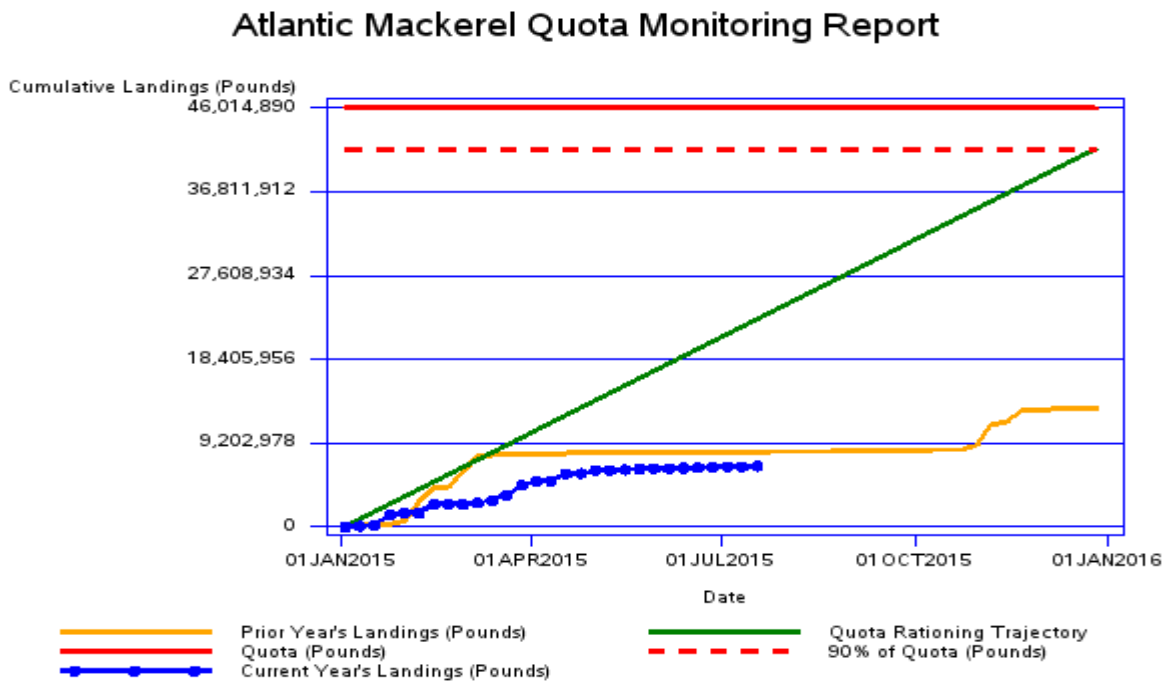


Figure 4. Atlantic mackerel landings for the 2015 fishery

Objective 1b: Co-occurring trips

Please note that the results for the time frame for the co-occurring trip analysis span from 2010-2014. Only preliminary at-sea bycatch data for 2015 is currently available and will be analyzed once all the necessary data is released by the North East Fishery Observer Program (NEFOP).

From 2010 through 2014, twenty three co-occurring herring trips (entire boat loads only) were sampled and analyzed for significance and presence/absence of specific bycatch species. These preliminary results discuss the analysis of three bycatch species; haddock, alewife, and blueback herring (all are species with individual bycatch quotas within the Atlantic herring fishery). Interestingly, all the trips analyzed using Methods 1 and 2 revealed the same significance status for all three species (Table 3 and 4).

Final results for the co-occurring analysis will be complete for the next annual report

Year	Gear	Stat Area	Species	At_Sea_Real_Mean	Prtscde_Real_Mean	T-Test Significance	T-Test, p-value	If not T-Test
2014	121	512	None					(-,)
2014	121	513	None					(-,)
2013	370	522	Haddock	2.847	7.065	Yes	0.050	
2013	121	513	None					(-,)
2013	50	539	Alewife	1.430	0.388	Yes	0.013	
2013	370	522	Haddock	6.766	4.923	No	0.192	
2013	50	539	River Herring	6.734	7.808	No	0.604	
2013	50	539	Alewife	5.395	6.184	No	0.405	
2013	50	539	Blueback herring	1.340	1.624	No	0.531	
2012	170	521	None					(-,)
2012	170	522	Haddock					(-,+)
2012	170	522	Haddock					(-,)
2012	121	513	Alewife					(+,-)
2012	121	513	Alewife					(+,-)
2012	170	522	Haddock	0.305	0.594	No	0.293	
2012	170	522	Alewife					(-,+)
2012	170	539	Alewife	0.428	0.254	No	0.176	
2012	170	539	River Herring	0.428	0.371	No	0.674	
2012	170	539	Blueback herring	NA	NA			(NK,+)
2011	121	511	None					(-,)
2011	170	522	Haddock					(-,)
2011	121	513	None					(-,)
2010	170	515	None					(-,)

Table 3. Method 1, Welch’s two tailed t-test assuming unequal variance, 2010-2014

Year	Gear	Stat Area	Species	At_Sea_Real_Mean	At_Sea_Btstrp_Mean	Prtside_Real_Mean	Prtside_Btstrp_Mean	At-Sea_Btstrp_95%_Ck	Prtside_Btstrp_95%_Ck	Btstrp "Significance"	Ifnot Btstrp
2014	121	512	None								(-,-)
2014	121	513	None								(-,-)
2013	370	522	Haddock	2.847	2.866	7.065	7.051	1.073 5.177	3.963 10.252	Yes	
2013	121	513	None								(-,-)
2013	50	539	Alewife	1.430	1.426	0.388	0.386	0.792 2.153	0.222 0.512	Yes	
2013	370	522	Haddock	6.766	6.795	4.923	4.905	4.530 9.268	3.811 6.091	No	
2013	50	539	River Herring	6.734	6.825	7.808	7.799	3.387 10.012	6.212 9.714	No	
2013	50	539	Alewife	5.395	5.406	6.184	6.162	2.867 7.931	4.827 7.239	No	
2013	50	539	Blueback herring	1.340	1.343	1.624	1.618	0.504 2.514	0.838 2.655	No	
2012	170	521	None								(-,-)
2012	170	522	Haddock								(+,-)
2012	170	522	Haddock								(-,-)
2012	121	513	Alewife								(+,-)
2012	121	513	Alewife								(+,-)
2012	170	522	Haddock	0.305	0.306	0.594	0.599	0.335 0.856	0.3429189 0.8768624	No	
2012	170	522	Alewife								(+,-)
2012	170	539	Alewife	0.428	0.427	0.254	0.252	0.249 0.618	0.126 0.377	Yes	
2012	170	539	River Herring	0.428	0.430	0.371	0.363	0.252 0.626	0.215 0.557	No	
2012	170	539	Blueback herring	NA	NA	NA	NA	NA	NA		(NK,+)
2011	121	511	None								(-,-)
2011	170	522	Haddock								(-,-)
2011	121	513	None								(-,-)
2010	170	515	None								(-,-)

Table 4. Method 2, bootstrap replacement, 2010-2014

Objective 2: Commercial catch sampling of herring and mackerel

Atlantic Herring Sampling (Commercial Catch Samples)

Sixty six samples were collected from July 1, 2015–December 31, 2015 from catches in the GoM, offshore on GB, and off southern New England. Approximately 71% of the herring samples were acquired from Maine ports: twenty two were collected from Portland; 19 from Rockland, 3 from South Portland, 2 from Stonington, and 1 from Friendship (Figure 5). The remaining samples were collected from Portsmouth and Seabrook, NH, Gloucester and New Bedford, MA, and Point Judith, RI. These samples were transported to DMR where they were processed for length, weight, age (using otoliths), sex, gonad stage/maturity, and stomach fullness.

Note that length, weight, and age distributions will be provided in the next annual report.

Sampling for the Atlantic herring fishery occurs routinely during the course of bycatch sampling at many of the same locations, in addition to sites specific for the collection of commercial catch samples only. Data are then entered into a database and are available for statistical analysis as part of an ongoing NOAA interstate fisheries grant.

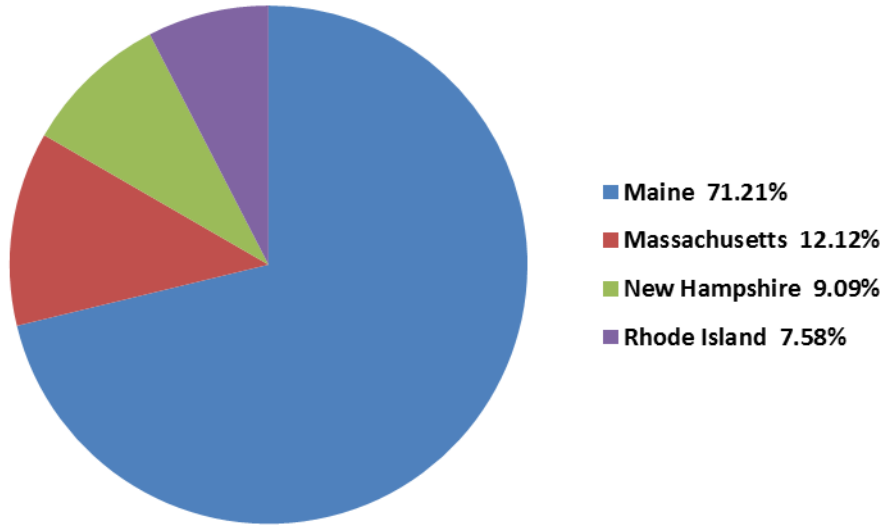


Figure 5. Percentage of herring samples collected by state, July 1, 2015–December 31, 2015.

Atlantic Mackerel Sampling

The DMR has sampled mackerel for the last ten years for the NMFS Northeast Fisheries Science Center (NEFSC) because the most recent stock assessment uncovered a severe lack of large mackerel in their biological samples. This expansion of mackerel sampling will continue as requested by the NEFSC to provide broader coverage of this resource in time and space.

Three Atlantic mackerel commercial catch samples were collected and delivered to NMFS in Woods Hole, MA for analysis and incorporation into the catch-at-age matrix. Samples were landed by mid-water trawlers; 1 in New Bedford, 1 in Portland, and 1 in Pt Judith (This gear type is not yet confirmed).

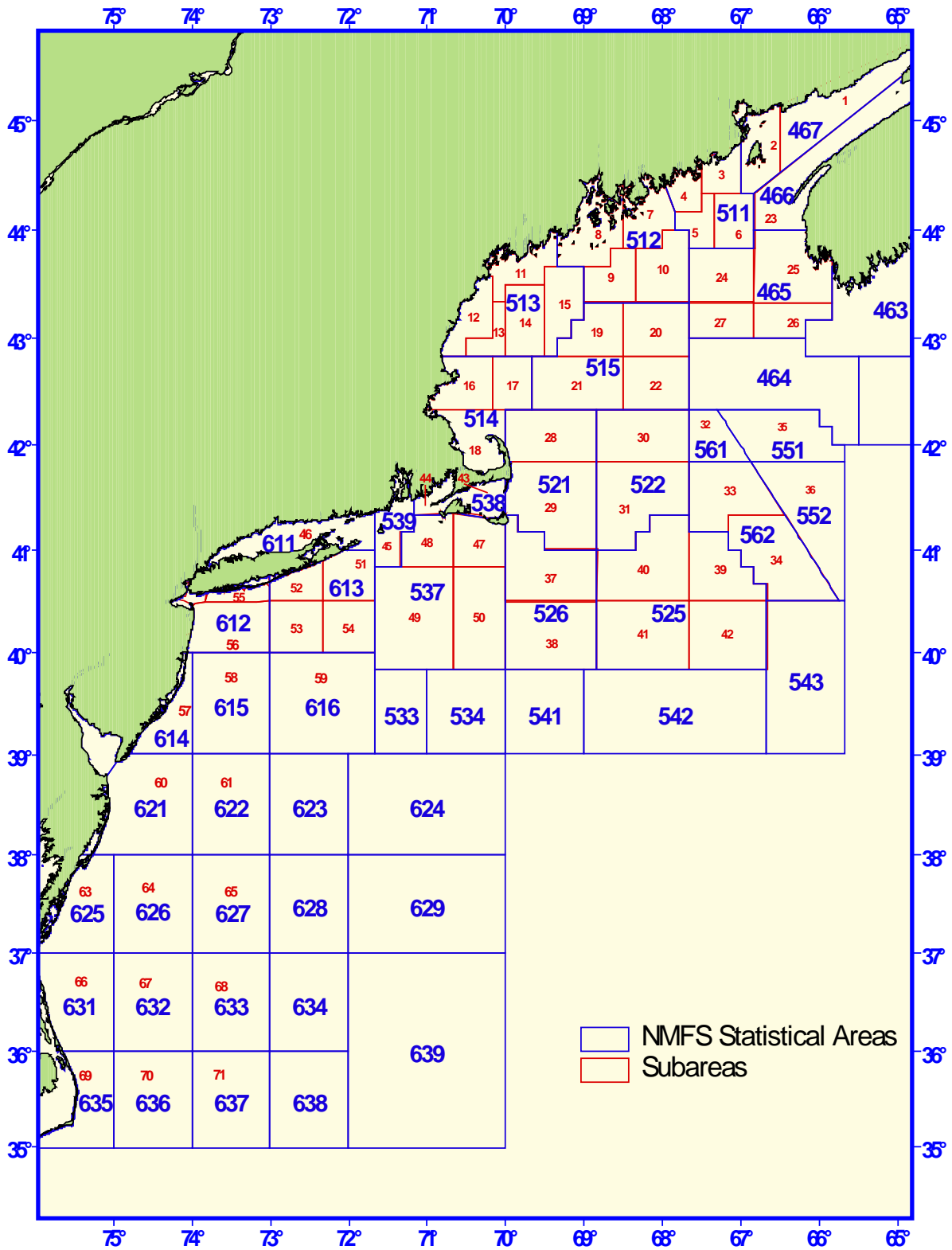


Figure 6. NMFS Statistical Areas.

Conclusions

The portside bycatch survey has continued to prove very successful since its inception in August of 2003. The results of this survey have revealed extremely small levels of bycatch in the directed herring fishery, minor levels of bycatch in the Atlantic mackerel fishery, and no bycatch in the Atlantic menhaden fishery for all gear types sampled. The results of this project are useful in quantifying and understanding the extent of retained bycatch in the Atlantic herring fishery and should prove as useful in the Atlantic mackerel and menhaden fishery.

Atlantic herring, mackerel, and menhaden are harvested as large volume fisheries, which results in mass handling techniques like pumping the catch from the nets into the vessel holds and again into the processing facilities. Because of the nature of these fisheries there are limited opportunities to observe and/or sample bycatch at-sea. However, vessels can discard some or all of the catch at-sea and there are some methods of sorting out large bycatch i.e. mammals before or during the pumping process. For these reasons the portside component is not designed to quantify all bycatch in the herring, mackerel, and menhaden fisheries, but only retained and landed bycatch.

Since the spring of 2011 the portside bycatch sampling protocol shifted towards analyzing entire boat loads only and eliminating partial boat or lot sampling. This new approach has made aligning portside data between Maine DMR, Massachusetts DMF and the NMFS at-sea data more statistically useful for comparing bycatch percentages and to increase the coverage of landed herring, and mackerel, trips across both fisheries. These efforts will complement but not replace the NMFS at-sea observer coverage. This bycatch survey represents a unique opportunity to collect data in an inexpensive but efficient and accurate way.

The data collected from both the Portside Bycatch Program and Commercial Catch Sampling Program were useful for the Atlantic herring stock assessment in June of 2011 and the most recent update during 2015. In particular the Atlantic herring samples used for the catch-at-age matrix helped to determine spawning stock biomass and the 2014 and 2015 area fishing quotas. In addition, portside bycatch data from this project was used in conjunction with the at-sea data to calculate the river herring and haddock bycatch quotas for the 2015/2016 Atlantic herring fishery. As of Sept 2015, data from both MA DMF and MEDMR portside bycatch sampling were used in the ongoing specifications for Atlantic herring for 2016-2018.

References

Collette, B. B., and Klein-Macphree, G. 2002. Bigelow and Schroeder's Fishes of the Gulf of Maine. Third Edition. Smithsonian Institution Press, Washington, DC, 748 p.

Dean, M., 2011. A Comparison of Portside and At-Sea Sampling Methods of Estimating Bycatch in the Atlantic herring fishery. MADMF, **unpublished**.

Kanwit, J. K., and Libby, D. A. 2009. Seasonal Movements of Atlantic Herring (*Clupea harengus*) Results from a Four Year Tagging Study Conducted in the Gulf of Maine and Southern New England. Fisheries. Science, 40: 29–39

Overholtz, W.J., and Friedland, K.D. 2002. Recovery of the Gulf of Maine-Georges Bank Atlantic herring (*Clupea harengus*) complex: perspectives based on bottom trawl survey data. Fishery Bulletin, 100: 593-608

Power, M.J., and Iles, T.D. 2001. Biological Characteristics of Atlantic Herring as Described by a Long-Term Sampling Program. Herring Expectations for a New Millennium, 135-154

Attachment 4

Protocol for the Atlantic Herring Commercial Catch Sampling

Project description:

The sampler collects herring (n=50/vessel) in ports throughout the north and mid-Atlantic coasts, encompassing an area from Maine to New Jersey. At each port, random herring samples are collected directly off the incoming vessels and brought back to the lab at MEDMR in Boothbay Harbor, Maine. Fish are processed in the lab and data are collected on gonad development, age (determined from otoliths), length, and weight.

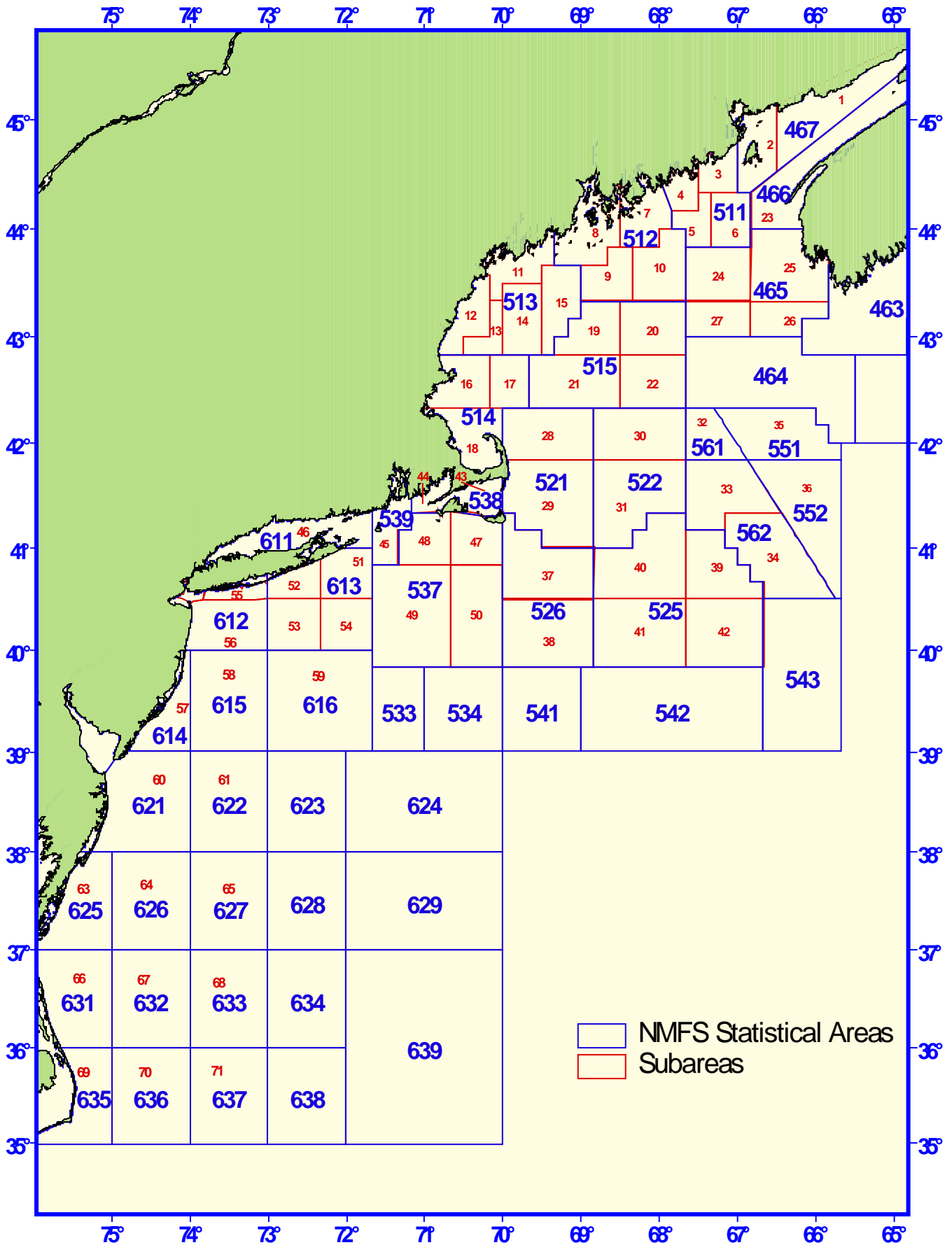
During the beginning of the year (January-March), the majority of the herring sampling is done in Gloucester and New Bedford, MA; Point Judith, RI and Cape May, NJ. These ports experience the largest landings from the winter fishery due to their proximity to the fishing grounds and accessibility to markets. As the herring migrate north along the coast, the sampling rotation includes ports along the Maine and New Hampshire coasts. During the “peak” season (June-October), the sampler will collect fish from fixed gear, seiners and Mid-water trawlers in up to 15 ports.

The ports the sampler will collect in **Maine** are: Lubec, Prospect Harbor, Stonington, Rockland, Sebasco, Bath, and Portland. **New Hampshire:** Newington and Portsmouth. **Massachusetts:** Gloucester, Fall River and New Bedford. **Connecticut:** Stonington and New Haven. **Rhode Island:** Point Judith and North Kingston. **New Jersey:** Cape May.

Parameters for sample collection:

1. Herring must have been caught in U.S. waters.
2. Two samples per week from each statistical area where the fish were caught (see chart).
3. One sample per week from each type of fishing gear where possible (mid-water trawl, pair trawl, purse seine, stop seine, weir).
4. 50 herring are to be randomly selected from the load (plus a couple to allow for damaged or otherwise useless fish). The fish are placed in MEDMR herring sample boxes.
5. The sample boxes are then stored in a freezer until time allows them to be brought to MEDMR headquarters in W. Boothbay Harbor. Samples should be delivered to MEDMR headquarters at a minimum of once per week.
6. The following information should be recorded on the sample boxes:
 - a. Amount of herring landed (lbs or metric tons)
 - b. Date of Catch
 - c. Catch location: NMFS Statistical Area #, and Sub-Area #
 - d. Port landed
 - e. Fishing vessel

- f. Location of where sample was collected (sometimes different than where fish were landed)
- g. Name of collector
- h. Under remarks note gear type (purse seine, midwater/pair trawl, stop seine, gillnet or weir)



Protocol for the Atlantic Mackerel Commercial Catch Sampling

Project description:

Commercial catch samples of mackerel are collected by randomly selecting 100 fish from each fishing vessel. These fish are measured and weighed and then a subsample (n=25/vessel) is frozen and transported to the Northeast Regional Science Center, where they are aged and logged onto a database.

Currently the mackerel sample locations in **Maine** are: Bath, and Portland. **Massachusetts:** Gloucester, Fall River and New Bedford. **Rhode Island:** Point Judith and North Kingston. **New Jersey:** Cape May. As proposed new plants become operational the number of sampling ports will increase.

Parameters for sample collection:

1.) A length sample of mackerel will consist of **100** randomly selected fish from which a minimum of **25** fish should be taken for aging. Stratification for selecting fish for aging is as follows:

<u>Centimeter interval</u>	<u>Number of fish</u>
≤ 35	1 or more
> 35	2 or more

2.) Atlantic mackerel must have been caught in US waters.

3.) The following data should accompany each sample:

- a. Amount of mackerel landed (lbs, metric tons)
- b. Date of catch
- c. Catch location: NMFS Statistical Area #, and Sub-area
- d. Port landed
- e. Fishing vessel
- f. Location of where sample was collected (sometimes different than where fish where landed)

Instructions for Sampling Atlantic Menhaden from the Maine Bait Fisheries

Acquiring the 'Sample'

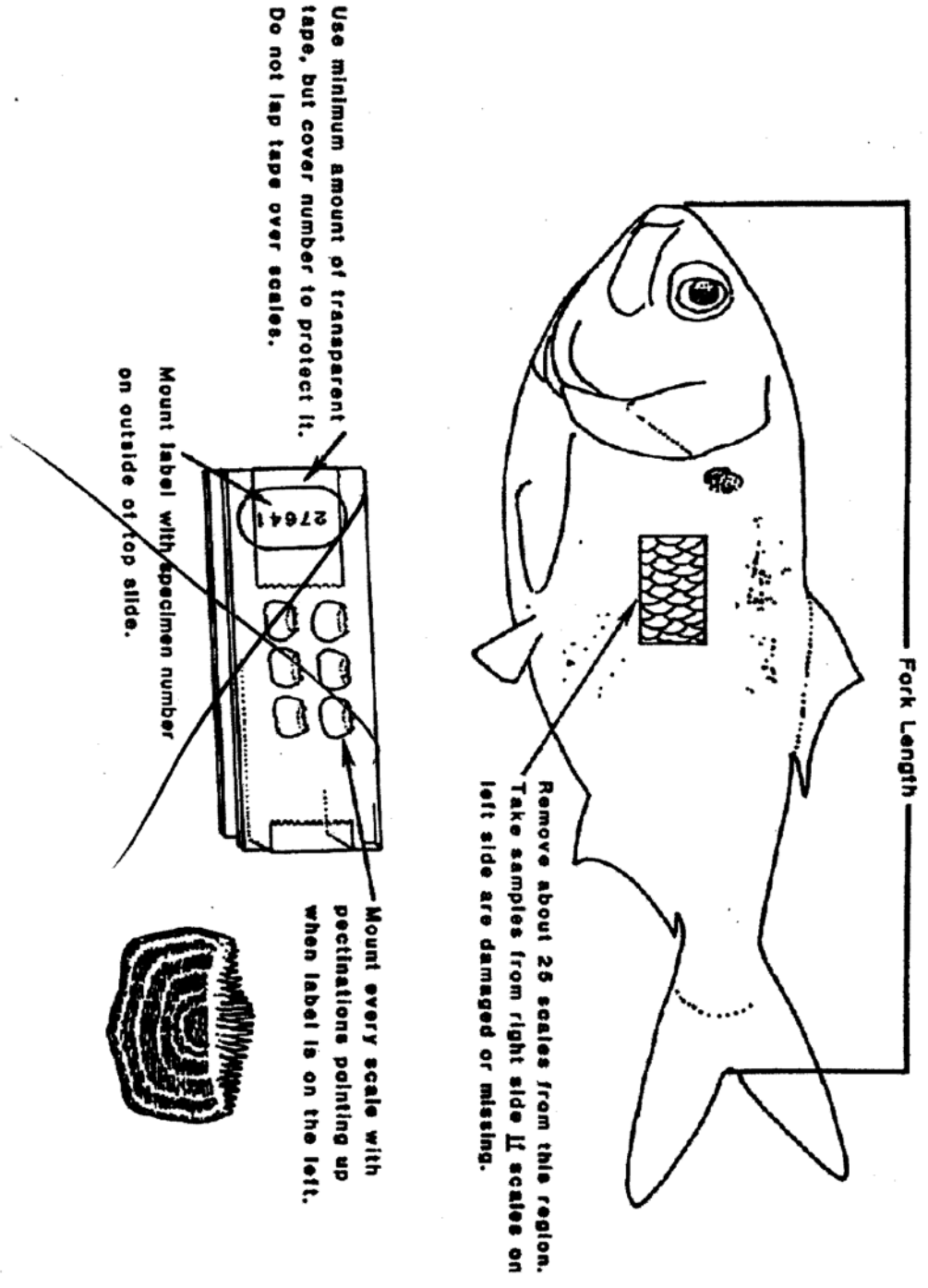
- Ideally, scoop a bucket of menhaden at random from the top of the fish hold.
- If the menhaden have already been packed out in flats or fish boxes, take 15-20 fish at random from the container.
- If available, record date of capture, location of capture, and vessel name. Usually we write this info on a waterproof tag and toss it in with the bagged menhaden sample.

Processing the 'Sample'

- Select a data sheet from the top of the pile. Write-in pertinent sample info on left half of data sheet:
 - Year Caught - last two digits
 - Vessel Name - just a name; we'll assign a vessel number at Beaufort
 - Location Caught - write location above the boxes; we'll assign a location code at Beaufort
 - Month and Day
 - LEAVE BLANK - Species and Scale Reader
 - Initial the data sheet (bottom right), and write any miscellaneous comments in the 'Remarks' box of the data sheet, eg, gear type, port of landing.
- Before you begin to handle the fish for lengths and weights, lay out ten coin envelopes on the counter-top and label each on the back with the unique 5-digit 'Specimen Number' found on the right side of the data sheet.
- From the plastic bag, bucket, etc. holding the menhaden sample, randomly draw out 10 fish. Process each of these 10 fish for fork length (in mm), weight (to the nearest whole gram), and remove a scale patch. Write fork lengths and weights for each of the 10 sample fish in the appropriate boxes on the right side of the data sheet.
- Scale patches are removed from mid-body, just below the start of the dorsal fin. See illustration in sampling manual.
 - Place scale patches in the appropriately labeled coin envelope, ie, scale patch from the first fish in the sample goes in the coin envelope labeled with the specimen number ending in '1'; scales from second fish go in coin envelope ending with specimen number ending in '2', etc.
- Re-bind ten coin envelopes with a rubber band. Paper-clip the coin envelopes to the top of the data sheet.
- Mail data sheets and coin envelopes to Beaufort via Dr. Matt Cieri.

Questions?? - Call Joseph W. Smith, NMFS Beaufort, 252-728-8765

FIGURE 2



Attachment 5

**COMMERCIAL
PORTSIDE BYCATCH
SURVEY PROTOCOL**



EXPLANATION:

The bycatch survey represents a unique opportunity to collect data in an inexpensive but efficient and accurate way. The program takes advantage of normal processing plant operations by quantifying bycatch that enters the facilities. Processing plants have to manually remove other species from the production line before the fish are sorted and cut or frozen. In normal operations, bycatch removed from the product is segregated into xactix bins or totes and removed from the processing floor at the end of each lot. Plants process one lot (fish caught by one vessel on a particular trip, delivered by truck or boat) at a time and then reset the plant in preparation for the next lot. Therefore, the bycatch removed from each lot can be documented and assigned to a catch location, gear type, date and a total lot amount. Additionally, the plants generally buy herring from vessels throughout the fishery and therefore cover multiple gear types, vessel sizes and individual fishing practices.

The bait industry has changed tremendously in the last five years resulting in a much more centralized distribution structure. Generally the herring used for bait goes through a large wholesale dealer to smaller dealers and lobster wharfs along the coast. The wholesale dealers generally have facilities where they sort, barrel, freeze and store bait for redistribution. It is at these sites where effective bycatch surveys can also be done, thereby including the bait sector in this study.

The sampling takes place at processing plants and bait dealers in Maine, New Hampshire, Massachusetts, Rhode Island and New Jersey. Sampling sites are selected by targeting Tier 1 locations first and then relying on Tier 2 locations to meet weekly goals. A sampling level of five percent of the entire herring fishery is targeted (Table 1). The mackerel fishery will be sampled if the target levels for the herring fishery are being reached or when herring samples are not available. This scenario is most likely to occur in the winter months when many of the herring vessels switch to the mackerel fishery. The samplers quantify bycatch from individual lots that enter the processing and bait plants according to a NMFS specified protocol. The total weight of any observed bycatch are recorded along with species identification, total species weight, individual lengths and weights of all fish or a representative sub-sample.

From 2004 thru 2008 the average annual herring landings were 91,803 metric tons. Over this five year period, April averaged the lowest landings of 2,033 metric tons, yielding about 2% of the annual landings (Figure 1). August averaged the highest landings of 13,438 metric tons, and yielded about 15% of the annual landings.

Table 1: Target sampling levels for herring

Month	5% Herring landings
January	319.82
February	270.91
March	144.92
April	101.63
May	346.8
June	355.3
July	544.18
August	671.9
September	502.18
October	646.28
November	386.65
December	299.61
Totals MT	4590.18

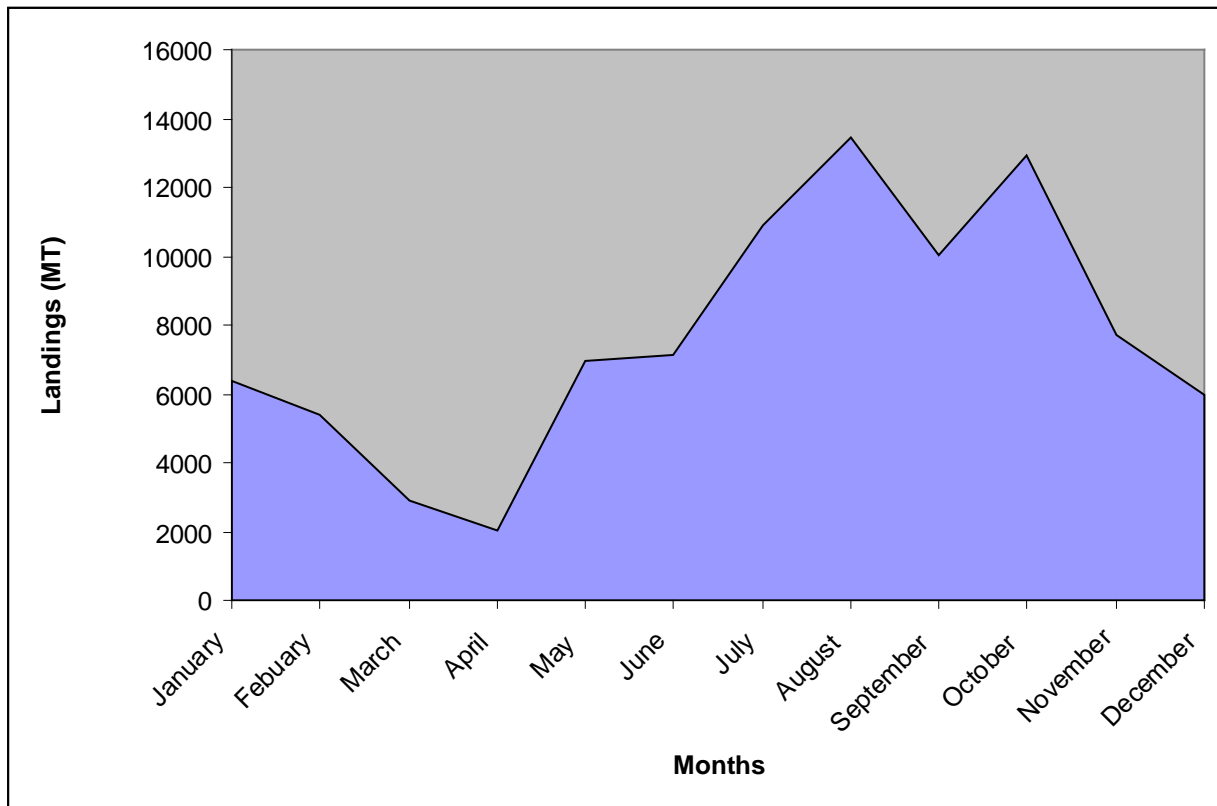


Figure 1: Five year average (2004-2008) of monthly herring landings

COMPLETE SAMPLING PROTOCOL:

The samplers collect and quantify all bycatch from individual lots of fish (transported by trucks or vessels) that enter the processing facilities. Samplers position themselves at the point of entry into the facility along an assembly line or at the base of the hoppers where the fish are unloaded. Sampling is conducted before grading or sorting of the catch occurs. All bycatch is removed from the assembly line or hopper and placed in bushel baskets or buckets specific to each species. Species identification is accomplished by examination and the use of identification keys when appropriate as outlined in NMFS and NEFOP protocols. The total weight of any observed bycatch is recorded along with species identification, total species weight, individual lengths and weights of all fish according to a NMFS and ACCSP specified protocol. If there is a large amount of one species, the total weight is recorded and then length frequencies and weight are gathered from a sub sample of n=50. The information collected for each bycatch study is recorded on the data sheets (see "Data Sheets" section of packet) and entered into the MEDMR biological database.

SUB-SAMPLING PROTOCOL:

A sub-sampling protocol is utilized when sampling a large volume of catch, determined as greater than 80,000 lbs (~40 mt). Instances where this is likely to occur include sampling sites where vessels land an entire catch (as much as one million pounds) to a single facility. Sub-sampling is also appropriate in instances when there is an overwhelming amount of bycatch and/or non targeted species mixed in with the lot of fish. In these cases it can be impossible to use the complete sampling protocol regardless of the amount inspected (< 80,000 lbs.). These situations are likely to occur when vessels are fishing mixed groups of herring and mackerel, some of which have a 50-50 composition.

Sub-samples are to be collected using bushel baskets at timed intervals during the pumping or unloading process following the NMFS at-sea observer sampling protocol. To accomplish this type of sub-sampling one needs to know the total lot weight and the duration of time it will take to unload the catch. After sampling the bushel basket of fish should be sorted by species, and total weight of each species and length frequencies should be recorded (sub sample n=50, for length frequencies if more than fifty of any species occurs).

Example:

Lot size = 120,000 lbs (3 Trucks)

Pumping or unloading time = 3 hours (180 minutes)

If a sample basket is to be collected for every 10,000 lbs of fish, then **12 sample baskets** need to be collected over the entire pumping or unloading process.

$$120,000 \text{ lbs} / 10,000 \text{ lbs} = 12$$

If the entire pumping or unloading process takes an estimated 180 minutes, then **a basket sample needs to be taken every 15 mins.**

If the catch composition from the bushel baskets is 99% Atlantic herring, then one can extrapolate that out of the 120,000 lbs unloaded, then 118,800lbs is Atlantic herring.

$$99\% \text{ Atlantic herring} = 120,000 \text{ lbs} \times 0.99 = 118,800 \text{ lbs of Atlantic herring}$$

If the remaining 1% of the catch composition is Atlantic mackerel, then one can extrapolate that out of the 120,000 lbs unloaded, 1,200lbs is Atlantic mackerel

$$1\% \text{ Atlantic mackerel} = 120,000 \text{ lbs} \times 0.01 = 1,200 \text{ lbs of Atlantic mackerel}$$

Attachment 6: Negotiated Indirect Cost Agreement



UNITED STATES DEPARTMENT OF COMMERCE
Chief Financial Officer
Assistant Secretary for Administration
Washington, D.C. 20230

April 20, 2012

Mr. Gilbert Bilodeau
Deputy Director
State of Maine, Department of Marine Resources
155 State House Station
Augusta, Maine 04333-0155

Referenced: Indirect Cost Rate Proposals for State and Local Government Entities

Dear Mr. Bilodeau:

This letter is to confirm that no further action is required under Department of Commerce Financial Assistance Standard Term & Condition A.05, *Indirect Costs*. Pursuant to OMB Circular A-87, Cost Principles for State, Local, and Federally-recognized Tribal Governments, your organization is not required to submit an indirect cost allocation proposal or plan narrative to its cognizant agency. These plans are to be prepared and retained at the local government level. OMB Circular A-87, Attachment E, section D(1)(a) states, in part:

All department or agencies of the governmental unit desiring to claim indirect costs under Federal awards must prepare an indirect cost rate proposal and related documentation to support the costs. The proposal and related documentation must be retained for audit in accordance with the records retention requirements contained in the Common Rule.

When actual costs are known at the end of your fiscal year, you are required to account for differences between estimated and actual indirect costs by means of either: a) making an adjustment to the next year's indirect cost rate calculation to account for carry-forward (the difference between the estimated costs used to establish the rate and the actual costs of the fiscal year covered by the rate); or b) making adjustments to the costs charged to the various programs based on the actual charges calculated. Since OMB Circular A-133, Audits of States, Local Governments and Non-Profit Organizations, requires the independent auditor to determine the allowability of both direct and indirect costs, the organization's indirect cost charges will be subject to audit.

It is important to note that your organization is still required to submit to the U.S. Department of Commerce (DOC) an annual Certificate of Indirect Costs. The DOC acknowledges receipt of your most recent certificates pertaining to your rate for Fiscal Year 2012. The submission of this form is due to our office within six (6) months after the close of your fiscal year. Therefore, your next certification will be due on December 31, 2012.

A copy of this letter will be retained in your official award file. If you have any questions, please email Greg Coss of my staff at gcoss1@doc.gov or call him at (202) 482-3134.

Sincerely,

A handwritten signature in cursive script, appearing to read "Gary W. Johnson".

Gary W. Johnson
Senior Grants/Cooperative Agreement Specialist
Office of Acquisition Management

David Alton Libby
Maine Department of Marine Resources
(207) 633-9532
david.a.libby@maine.gov

July, 2012

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Fisheries Population Dynamics, University of Maine, Orono, Me. 1984.

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West Boothbay Harbor, Me. 04575
Bureau of Resource Management

- Directs and oversees the Biomonitoring and Assessment Division. Chief responsibilities are to oversee fishery monitoring programs for commercially important marine species; the ACCSP commercial landings program; biological studies; population assessments; and gear research.
- Directs the collection and processing of Maine's Commercial Landings Program (CLP) statistics and processing.
- Program science manager for the Bureau's biological database Marine Resource and Environmental Information System (MARVIN).
- Directs and manages the laboratory's wet lab and sea water facility for holding and conducting experiments of marine organisms

July 2000 – November 2006

Marine Resources Scientist III

Maine Department of Marine Resources,
Fisheries Research Station, P.O. Box 8
West Boothbay Harbor, Me. 04575
Bureau of Resource Management
Biomonitoring & Assessment Division

- Oversees the Atlantic herring resource monitoring, assessment and advisory group.
- Directs the collection and processing of Maine's Commercial Landings Program (CLP) statistics and processing.
- Program science manager for the Bureau's biological database Marine Resource and Environmental Information System (MARVIN).

- Directs and manages the laboratory's wet lab and sea water facility for holding and conducting experiments of marine organisms
- Promotes Maine's partnership with Atlantic Coastal Cooperative Statistical Program (ACCSP) through serving on the Biological Review Panel and developing and overseeing projects to bring the state into compliance with ACCSP.

January 1988 – July 2000 Marine Resources Scientist II,
 Assessment and Statistics Division
 Interjurisdictional Resource Monitoring and Assessment Project

- Provides direction for the Atlantic herring landings and sampling projects. Supervises personnel as to their duties and tasks in carrying out the needs of the projects.

July 1982- January 1988 Marine Resources Scientist I

- Herring tagging and migration study conducted in the Gulf of Maine. Performed the field tagging and planned and evaluated statistical analysis of the returned tag data.
- Sabbatical in Scotland, UK at the Dunstaffnage Marine Biological Laboratory, Oban. Reared herring and investigated juvenile herring feeding and swimming behavior
- Designed and assembled a hatching and rearing facility for herring used in various studies.
- Participated in herring larvae and britt surveys conducted in the Gulf of Maine for the Transboundary Herring Project.

November 1976-July 1982 Marine Resources Specialist.

- Anadromous alewife (*Alosa pseudoharengus*) project. Investigated the dynamics of adult immigration and juvenile emigration of alewife populations.
- Planned, analyzed, evaluated an alewife otolith and scale study pertaining to ageing.

December 1974-November 1976 Marine Resources Technician.

- Lobster (*Homarus americanus*) tagging project. Performed the tagging, release and recovery of commercial lobsters. Compiled and analyzed tag return data.
- Lobster trap vent escapement study. Planned, administered trap vent experiments and analyzed compiled data.

MATTHEW D. CIERI
Maine Department of Marine Resources
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(207) 380-5016 (cell)
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EDUCATIONAL EXPERIENCE

B.S.	Marine Science, Stockton College of New Jersey	1993
M.S.	Biology (Marine Ecology), Rutgers University	1995
Ph.D.	Oceanography, University of Maine	1999

PROFESSIONAL EXPERIENCE

Marine Resource Scientist , Maine Department of Marine Resources	2/01-present
Post-Doctoral Scientist , The Ecosystem Center, Marine Biological Laboratory	9/99-2/01
Graduate Research Assistant , School of Marine Science, University of Maine	5/95-9/99
Research Technician , Cranberry/Blueberry Research Laboratory, Rutgers /USDA	5/95-9/95
Graduate Teaching Assistant , Department of Biology, Rutgers University	9/93-9/95
Graduate Research Assistant , Institute of Marine Sciences, Rutgers University	10/93-4/94
Animal Laboratory Technician , Department of Natural Sciences, Stockton College	10/92-9/93

CURRENT DUTIES

Atlantic Herring: New England Fishery Management Council (NEFMC) and Atlantic States Marine Fisheries Commission (ASMFC)

- Oversee catch and landings reporting. Use of VTR (Vessel Trip Reports), Dealer Reports, & IVR (Interactive Voice Reports) to analyze and report landings and catch data to NMFS (National Marine Fisheries Service) regional office, NEFMC, and ASMFC
- Monitor IVR system: Query IVR database and report landing weekly to interested parties. Design and execution of a catch and effort model to predict appropriate “Days Out” needed to extend the fishery in some areas
- Commercial and Bycatch Sampling: Oversee the collection, inventorying, processing, and ageing of herring samples, also verify data entry. Make data available to interested parties. Supervise two full-time and one part-time technician. Produce compliance reports for ASMFC
- Monitor Herring spawning condition: Analyze biological sample data to determine spawning activity status. Indicate when areas should be closed to fishing to protect spawning herring
- Herring PDT (Plan Development Team) & Stock Assessment Subcommittee member (NEFMC & ASMFC): Participate in Stock assessments and analysis of catch and landings statistics for the Herring SAFE report. Develop the catch at age matrix for use in Virtual Population Analysis (VPA) and Age Structure Assessment Program (ASAP) models. Provide technical advice to management; Current Technical Committee Chair (ASMFC)

Whiting and Small mesh Multispecies (NEFMC):

- PDT & Stock Assessment Subcommittee member (NEFMC): Participated in stock assessment activities; Revision of overfishing and biomass reference points; Analysis of catch and landings statistics; Provide technical advice to management.

Spiny Dogfish (ASMFC):

- Participated in stock assessment activities and management analysis; Revision of overfishing and biomass reference points; Analysis of catch and landings statistics; Provide technical advice to management.

Assessment Science Committee (ASMFC):

- Provide stock assessment and technical advice to ASMFC Policy board including; Sampling targets for fishery independent and dependent sampling; Workload and scheduling for ASMFC stock assessment and participating scientists; coordinate Advanced Stock assessment training workshops

Multispecies Technical Committee Chair (ASMFC):

- Provide stock assessment and technical advice to ASMFC Policy on predator/prey relationships; Update and Expand MS-VPA (Multispecies Virtual Population Analysis) model as appropriate; Assist in incorporating Predator/prey and natural mortality estimates in the Atlantic Menhaden Assessment. Current Chair

Atlantic Menhaden (ASMFC)

- **Stock Assessment Subcommittee:** Provide estimates of natural mortality and participate in general assessment activities.

Biological Review Panel (ACCSP):

- Provide recommendations of priority and scope of fishery dependent and independent sampling for East Coast Fisheries

PREVIOUS DUTIES**Monkfish**

- **PDT & Stock Assessment Subcommittee member (NEFMC):** Participated in stock assessment activities; Revision of overfishing and biomass reference points; Analysis of catch and landings statistics; Provide technical advice to management.

Atlantic Menhaden (ASMFC)

- **Technical Committee Chair:** Writing consensus documentation from technical meetings; Provide analysis of catch and landings data; Analyze current assessment methods; Present findings to the Menhaden Management Board. Produced compliance reports for the state of Maine
- **Multispecies Subcommittee Chair:** Provide technical guidance on conceptualization and implementation of the Menhaden Multispecies ecosystem model; Report progress to the Menhaden Management Board.

American Eel (ASMFC)

- **Stock Assessment Subcommittee Chair:** Organized and lead meetings with both scientific and stakeholder participants. Writing consensus documentation from technical meetings. Provided analysis of catch and landings data. Analyzed assessment methods for use in the stock assessment. Presented results during ASMFC external peer review and Eel Management Board.

**Proposal for funding made to the
Coordinating Council and the Operations Committee
Atlantic Coastal Cooperative Statistics Program
1050 N. Highland St., Ste. 200A-N
Arlington, VA 22201**

**FY17: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from
the State of Rhode Island**

Submitted By:
Nichole Ares
Rhode Island Department of Environmental Management
Division of Fish and Wildlife
Marine Fisheries
3 Fort Wetherill Rd
Jamestown, RI 02835
nichole.ares@dem.ri.gov

Applicant Name: Rhode Island Department of Environmental Management,
Division of Fish and Wildlife, Marine Fisheries

Project Title: **FY17: Maintenance and Coordination of Fisheries
Dependent Data Feeds to ACCSP from the State of Rhode
Island**

Project Type: Maintenance

Requested Award Amount: \$78,420

Requested Award Period: FY 2017 (August 1, 2017 to July 31, 2018)

Primary Program Priority: Commercial and Recreational Catch and Effort Module

Date Submitted:

Project Supervisor: Scott Olszewski, Supervising Biologist, scott.olszewski@dem.ri.gov

Principal Investigator: Nichole Ares, Principal Biologist, nichole.ares@dem.ri.gov

Project Staff: John Lake, Principal Biologist, john.lake@dem.ri.gov
Nicole Lengyel, Principal Biologist, nicole.lengyel@dem.ri.gov
Seasonal Interns

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**Atlantic Coastal Cooperative Statistics Program (ACCSP) Proposal
for the State of Rhode Island 2017**

Objectives:

- Continue to provide new and existing Rhode Island (RI) seafood dealers with technical support to maintain and improve dealer electronic reporting to the Standard Atlantic Fisheries Information System (SAFIS) pursuant to RI Marine Fisheries Statutes and Regulations.
- Provide technical and analytical support to the RI Marine Fisheries Quota Monitoring Program as well as maintain dealer compliance monitoring protocols for both quota and non-quota managed species by utilizing commercial landings data from SAFIS.
- Continue to collect and enhance trip-level catch and effort data through the RI Marine Fisheries Commercial Harvester Catch and Effort Logbook Program and the RI Electronic Recreational Logbook (eLOGBOOK) Program, and continue to transition commercial fishermen's primary reporting method to electronic trip reports (eTRIPS) including the use of the eTRIPS-Mobile Application.
- Maintain and improve the existing data feed of RI supplemental fisheries data to the ACCSP data warehouse.

Need:

Beginning in 2006, the Rhode Island Division of Fish and Wildlife, Marine Fisheries Section (RIDFW) implemented the marine fisheries commercial data collection program. This program collects trip level landings data from all 133 dealers licensed in RI through direct dealer entry into the eDR (electronic dealer report) SAFIS application. Catch and effort data are currently collected from 100% of the fishermen in the state for the finfish, squid, whelk, and crustacean sectors. **RI meets the ACCSP standard by maintaining a one-ticket system for the shellfish fishery sector and a two-ticket system for the crustacean, squid, finfish, and whelk fishery sectors.** Fishermen outside of the shellfish sector with a federal Vessel Trip Report (VTR) requirement are required to declare with RIDFW which federal vessel they are fishing on so staff can track compliance using the federal database. Fishermen who do not have a VTR requirement must report all catch and effort information **to RIDFW** either directly to eTRIPS or via paper logbooks that are uploaded to the eTRIPS SAFIS application by RIDFW staff. RIDFW has been attempting to decrease the costs surrounding data entry, therefore, beginning in 2012, RIDFW began an outreach program to transition fishermen to using eTRIPS as their primary reporting method and to date; approximately 48% of fishermen with a reporting requirement are actively using eTRIPS, this is up from 26% in 2014. In addition, crustacean dockside sales are collected through a supplementary paper logbook which captures daily data of all sales. Data are transferred to the ACCSP data warehouse in the proper format annually.

Maintenance and coordination of the SAFIS data entry is critical for successful fisheries management in RI. The collection of this data has been essential for the determination of commercial catch and effort statistics, establishing an efficient quota monitoring process, as well as tracking active versus latent license holders. Quota monitoring is one of the most important uses of SAFIS data, as RI ACCSP staff analyze trip level commercial landings data for quota managed species in RI on a daily basis. RI ACCSP staff then use these analyses to make decisions regarding seasonal closures and possession limit changes.

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2

In addition to providing and maintaining the ACCSP commercial catch and effort (eTRIPS) and landings data feeds (eDR), the RI ACCSP staff is responsible for outreach and support of the voluntary eLOGBOOK program in RI. This SAFIS application is used to enter and house recreational catch and effort data and is used by RI fisheries managers to determine possession limits and minimum sizes of important recreational species. Furthermore, RI ACCSP staff continues to provide data feeds for lobster at-sea and port sampling data via the Atlantic States Marine Fisheries Commission (ASMFC) Lobster Database and supplemental horseshoe crab, aquaculture, and dockside data for the Fisheries of the United States via ACCSP. Data feeds for finfish sampling to the ACCSP warehouse will continue to be developed and RI ACCSP staff will need to maintain this data feed once it is active.

With these programs established and planned enhancements scheduled for 2017, the goal of this project is to maintain these data feeds to the ACCSP while continuing to improve data quality as well as maintaining outreach to dealers and fishermen. The plan detailed below is similar to the scope of work proposed for the past several years.

Results and Benefits:

Collecting high quality, comprehensive fisheries data is essential to successful fisheries assessment and management. This project allows the current level of oversight and coordination of the ACCSP to continue in RI by providing funding for the staff necessary to maintain the project. **The state relies on comprehensive SAFIS eDR and eTRIPS/RI Commercial Harvester Logbook data for fisheries management programs including quota monitoring, resource assessment, license tracking, and resource allocation. The state also relies on eLOGBOOK data as it enhances and adds to the existing MRIP dataset with regard to landings and discards, and most notably it increases our understanding of the length frequency distribution of recreational harvest.** This comprehensive and timely data allows RIDFW to establish higher latitude in management programs which is encouraged by the fishing industry. **Additionally, once in the ACCSP data warehouse, the catch and effort and biological sampling data provided by RI can be utilized by other partners and stock assessment scientists for regional scientific assessment of important fish populations.** Although the work outlined in this proposal is specific to RI, **the presence of RI ACCSP staff provides many benefits to regional partners. These benefits include increased coordination between state and federal program partners, increased technical assistance, as well as the sharing of data collection methodology and troubleshooting techniques.**

Approach:

Currently all 133 licensed seafood dealers in RI are electronically entering trip level data into SAFIS at least twice weekly (Monday and Thursday) (RIMF, 2016). Dealers that hold federal and/or state dealer permits are provided support and initial SAFIS training regarding the SAFIS eDR system. Technical support is provided to dealers who call or walk-in on a daily basis for questions regarding licensing, quotas and possession limits, vessel and license searches, SAFIS enhancements, “favorites” improvements, file upload assistance, and other computer issues. Site visits are conducted if further support and training are necessary.

In order to ensure data quality and proper SAFIS reporting, the RIDFW strictly monitors dealer compliance. In cases where dealers are found to be non-compliant, administrative action is taken and can result in a fine to the dealer, a license suspension, and in extreme cases an inability to obtain a RI Dealers License in the future. The Rhode Island Department of Environmental Management (RIDEM) Division of Law Enforcement becomes involved when a dealer has repeatedly violated compliance regulations. This model has been very successful in bringing problematic dealers into compliance and needs to continue in order to collect the highest quality data in a timely manner consistent with Marine Fisheries Regulations. **To summarize a dealer’s compliance performance, dealer “report cards” assigning qualitative grades are mailed quarterly to all dealers. These report cards detail the reporting history of each dealer from the previous quarter and help RIDFW track improvements in data quality.** It contains information such as:

- # of reports made within the period
- # and percentage of tardy reports broken into 3 categories (1-5, 6-10, and 10+ days late)
- # of phone calls/contact events by RIDFW to the dealer regarding late and incorrect reporting.

Landings entered by dealers require quality control and assurance measures, which are carried out via SAFIS audit protocols daily. These as well as additional manual audits, run weekly, highlight issues in data quality. These audits look for mistakes in fishermen information (name and license number), missing vessel information, incorrect species identification, missing or incorrect price information, duplicate report entry, illegal landings due to either fishermen license or season possession limits, and other issues. These issues are routinely addressed with dealers and corrected via National Marine Fisheries Service (NMFS) JIRA or through eDR directly. Licensing and commercial vessel data generated from RIDEM must be kept up to date in SAFIS tables, and these updates occur via the SAFIS Management System (SMS) as needed and during scheduled weekly updates. These audits and updates are of great importance and are necessary to maintain high standards of data quality.

RIDFW is looking to improve the process of data entry for RI dealers. Currently, there is an application being piloted/implemented by Massachusetts and Maine to allow data to be collected using a swipe card/barcoded fishing license. **In 2016, funding was granted through ACCSP for RI to pilot a barcode licensing system.** Data such as the fishermen name, license number, and vessel are coded into the barcode and those fields populate automatically in the data entry form when the license was scanned by the dealer. **This would increase the data quality though a drastic decrease in the amount of data entered with “unknown fisher” or “unknown vessel”. It would also improve the timeliness of the data as data could be collected in real time at the point of sale.**

Quota monitoring relies solely on accurate and up to date SAFIS data. Data are downloaded from SAFIS on a daily basis and until the end of 2015, appended to an in-house Microsoft Access database. **At the end of 2015, a software program was developed in the statistical package R (R core team 2016) and used for the quota monitoring process. This decreased the time needed to evaluate the quota monitoring data by 15 to 20 minutes each**

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day, and resulted in a less labor intensive program while maintaining the same quality of data analysis. Once state landings data are in the software program, the data are sorted and filtered to detail daily landings of fluke, scup, black sea bass, striped bass, tautog, menhaden, and bluefish. **This data is then used to make fisheries management decisions, possession limit changes, and early seasonal closure decisions. Non-confidential, graphical updates of cumulative RI landings are then posted weekly to the RIDFW webpage as public information. The staff’s role in maintaining a high level of accuracy and timeliness for quota managed species data is essential for successful management.**

The RI ACCSP staff also closely monitors the Research-Set-Aside (RSA) program and landings to accurately track state landings of quota monitored species. Although the RSA program for quota monitored species is not active in 2016 staff needs to be familiar with how RSA affects quota monitoring in the event that it is reinstated in the future. Due to the fact that RSA landings do not count against state quotas, being able to identify RSA and non-RSA landings is crucial for quota monitoring. In 2014, RI ACCSP staff requested the addition of RSA tracking directly in SAFIS. As a result, a new **field** named “Catch Source” was added to SAFIS that designates the type of landing that is being reported as Standard, Carred, RSA, or Aquaculture. This field was introduced to dealers and fishermen alike as it affects both eDR and eTRIPS, and further training was made available if needed. This successful implementation allows RSA landings to be captured at the SAFIS level and eliminates the need to rely on adjustments made to landings data from biweekly reports from the NMFS IVR phone system. Landings records are now more accurate, timely, and the quota management process is more streamlined particularly in the peak summer season.

Data requests from fishermen, academics, the RIDEM Licensing Division, and other stakeholders are also completed on a daily basis by RI ACCSP staff. These requests support fisheries science and management decisions and are necessary to maintain the level of support required by the RIDEM and other regional fisheries managers. **Both in-house and external data requests of SAFIS-generated data have been increasing as the data quality and quantity improves. The data obtained becomes available to support state and regional stock assessments, economic analyses, and research.** All requests include only non-confidential data unless confidential access is granted through ACCSP channels. RI ACCSP staff are needed both to complete these data requests and handle confidential data access requests originating from ACCSP. RIDFW expects that increasingly rigorous management schemes in development will result in further heavy usage of the data.

In addition to monitoring SAFIS landings data, metadata and socio-economic data are also collected by RI ACCSP staff. Examples of such data include but are not limited to water temperature from inshore and offshore data buoys, wind data, number of participants in specific fisheries by week or day, average price per week of quota monitored species, number of participants in different fisheries by gear type, and possession limits. This data continues to be used in generalized linear models to project landings of quota managed species. Another source of metadata is generated from weekly “Team Quota” meetings. “Team Quota” was established by the RIDFW in 2011 to track fisheries openings, closures, and possession limit adjustments. Meeting minutes also include landings data from SAFIS, opinions from RIDFW staff on quota management decisions, and dates for regulation filings. Additionally, economic data entered by

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5

the dealers are used in monthly summaries for RI's two largest ports, Point Judith and Newport. The data are used to justify funding for port improvements and maintaining shoreside operations that enhance commercial fisheries. Data are also used to highlight seafood availability and provide the basis for public outreach promoting local seafood consumption and improving the state's economy through support of the fishing industry.

Catch and effort data for all fisheries are essential for the RIDFW to provide efficient and effective management. **Harvesters in all commercial fisheries are required by RI law to submit catch and effort data to the RIDFW. Currently, all finfish, crustacean, squid, and whelk commercial fishermen are required to submit catch and effort information to the RIDFW. Shellfish fishermen are not required to submit catch and effort logbooks because the data is captured via a one-ticket system.** Once the barcode license system is ready for state-wide deployment, the 1-ticket system for shellfish will see major improvements, including increases in data quality and more catch and effort information collected, with other fisheries following suit.

There are approximately 1600 commercially licensed fishermen in RI. **Previously, RIDFW mailed each fishermen with a reporting requirement paper logbooks. This was a labor and fiscally intensive program, and needed an overhaul to determine the best method for RIDFW to obtain all the catch and effort information in the most efficient and cost effective manner.** Fishermen with a reporting requirement fall into two main categories: fishermen with a federal VTR requirement, and fishermen without a federal VTR requirement. Additionally, fishermen without a VTR requirement can elect to report either via the state paper logbook, or electronically utilizing the SAFIS eTRIPS application. This is where the RIDFW began in determining how to overhaul the logbook system.

As stated, there are 3 different ways for RIDFW to receive harvester catch and effort information from RI fishermen: VTRs, paper logbooks, and eTRIPS. Multiple methods resulted in confusion to fishermen as to how they needed to report their data, and if there was a cost associated with their preferred method. Due to this, **in 2015 RIDEM began requiring fishermen to declare a reporting method at the time of license renewal or purchase: federal VTR, state paper logbook, or eTRIPS. Fishermen who selected paper logbook are also required to purchase the paper logbook endorsement to help contribute to the printing, mailing, data entry, and administrative costs of the paper logbook program.** This results in a concrete number of paper logbooks needed each year, and RIDFW is no longer sending logbooks to individuals who do not use them. In fact, the number of logbooks RIDFW is mailing each year has decreased since the introduction of the paper logbook endorsement and availability of eTRIPS.

Until 2016, fishermen with a VTR requirement were required to submit all state copies of their VTRs to RIDFW and were exempt from the state catch and effort logbook program. In 2016, VTR fishermen continue to be exempt from the state logbook program, however in attempt to further streamline fishermen reporting, RIDFW no longer requires VTR fishermen to submit their blue state copies. Instead, all fishermen who declared VTR as their reporting method are mailed a "VTR Declaration Form." This form asks the fishermen to supply RIDFW with their vessel information (name, hull number, and federal permit number)

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6

and commercial fishing license number. **This information is then used to track compliance for the fishermen using the electronic NMFS database. Any vessel considered compliant by NMFS will now be considered compliant by RIDFW. This system for VTR compliance eases the burden on both the fishermen and RIDFW staff.** Fishermen are now only reporting their catch and effort information to a single source (NMFS), decreasing confusion and mailing costs. This also decreases staff time used to track VTR compliance as individual VTRs do not need to be checked, just whether the vessel is compliant per federal standards.

Fishermen without a VTR requirement must submit catch and effort information directly to RIDFW. **All fishermen who declare the logbook as their reporting method needs to submit quarterly catch and effort paper logbooks using the postage-paid envelopes provided by RIDFW to ensure timely return of completed logbooks. Harvester license number, dealer, and sale date are used to match records with dealer reports for quality control and assurance of the landings data.** The data collected by this program was key entered into eTRIPS by staff until 2013 when the upload feature was utilized. **The upload feature greatly reduced the staff time needed to enter all the logbook information into eTRIPS,** but was still less than ideal.

In 2012, RIDFW began allowing fishermen to directly enter their catch and effort information into eTRIPS. Currently there are 530 active eTRIPS accounts in RI issued to fishermen who declared eTRIPS as their reporting method. The division expects that number to reach approximately 675; **this is equivalent to 48% of all fishermen with a reporting requirement, a large increase as only 26% of fishermen were utilizing eTRIPS in 2014.** To help continue the trend to electronic reporting, RIDFW staff offers support to fishermen who want to learn and use the program. **Training sessions are held regularly for eTRIPS to ensure fishermen are entering data correctly; outside of training sessions staff answer phone calls and walk-in questions about eTRIPS.** In the future, RIDFW intends to continue outreach for eTRIPS, and hopes to continue to increase the number of fishermen using this method to report catch and effort information. Details regarding the change in reporting method, and drastic increase in fishermen reporting electronically can be seen in Figure 2: Reporting Method Breakdown.

In addition to eTRIPS, **RIDFW also began outreach and training for eTRIPS - Mobile Application in 2016 and plans to continue this in the future.** This application was developed by ACCSP in conjunction with RI Party and Charter Industry and is a tablet/smart phone application that allows real time data entry of catch and effort information. The data can only be uploaded into the SAFIS database with an active internet connection. Therefore, the data might not be uploaded in real time, but the data can be entered and stored within the application, then uploaded at a later time when an internet connection is available. Currently, the application is up and running for both party and charter trips and commercial fishing trips. Also, within the past year, NMFS Greater Atlantic Regional Fisheries Office (GARFO) accepted the eTRIPS Mobile application in lieu of federal VTRs. **Utilizing the mobile application and offering training on the program will allow fishermen to enter data in real time, resulting in more accurate and time sensitive entries.** Offering multiple platforms for electronic data entry can increase the number of individuals electing to report electronically. More platforms makes electronic reporting more accessible, and more attractive to the fishermen.

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Data quality is checked for each logbook submitted and any missing or inaccurate information is corrected through contacting the fishermen. Any logbook not completed in full is returned to the fishermen for correction. **All reports entered by the fishermen through eTRIPS are audited; in the event an error is found, the fisherman is contacted and sent a report with any corrections that need to be made.** In addition to audit reports, a quarterly email is sent to all RI eTRIPS users detailing some of the common errors seen during the auditing process. This email attempts to highlight the errors most seen and serve as a reminder to all eTRIPS users to watch for these errors and work on improving data quality. RI commercial licensees may not renew their licenses unless they have correctly completed their catch and effort logbooks or eTRIPS reports for the entire year.

In addition to the harvester catch and effort logbook, fishermen who hold a RIDEM crustacean dockside sales endorsement must fill out a dockside sales logbook which details the quantity, market, grade, disposition, and price of all crustaceans sold at the dock and submit it to RIDFW quarterly. This dockside sales logbook is mailed to the 267 dockside endorsement holders and must be completed regardless of federal permit status. **The dockside sales data captures RI's important economic data such as price on all dockside transactions, this data is transmitted to the ACCSP as supplementary data for the Fisheries of the US data feed.** RI ACCSP staff is needed to oversee data entry, perform quality control checks, and transfer the dockside sale data to ACCSP in the proper format.

In 2017, RI will continue to utilize and promote the voluntary eLOGBOOK program. This program enables recreational fishermen to enter complete trip level catch and effort data online. This data can be used for recreational effort estimates as well as for important management decisions in RI. Currently there are approximately 350 registered users and 10,417 reports entered in the RI eLOGBOOK application with many users entering catch data regularly. Based on the number of saltwater recreational fishing licenses issued in since 2011, and the number currently purchased so far in 2016, RIDFW estimates ~50,000 licenses will be purchased in 2017. **In July of 2010, the RIDEM adopted Marine Fisheries regulation 7.9.1-2 that made the use of eLOGBOOK mandatory by all Rhode Island party and charter vessels participating in the tautog fishery.** Due to the development of the eTRIPS Mobile Application, RI Party and Charter vessels are also allowed to enter their information using the application. **This allows Party and Charter captains to enter their trip information contemporaneously resulting in more accurate and timelier data submission.** While data is still being collected, it is now being housed in eTRIPS, not eLOGBOOK. This will in turn result in less eLOGBOOK entries, but the data will still be available to those who need or request it. Compliance will continue to be monitored for party and charter fishermen in the tautog fishery in 2017. Comparing the 2010 eLOGBOOK entries for party and charter harvested tautog in RI with MRFSS estimated figures produced a noticeable discrepancy in the number of fish harvested. As the eLOGBOOK is considered a census for the party and charter tautog fishery, logically the data can be considered more robust than MRIP (formally MRFSS) estimates. The eLOGBOOK data also contains lengths of both fish harvested and released. This data proved very useful for fisheries managers in RI, specifically when it was utilized in a model to liberalize recreational size limits for the fluke fishery. Additionally, the data was useful in the most recent bluefish stock assessment. **Bluefish discard data from eLOGBOOK was used in the 2015**

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benchmark assessment, which affects multiple partners as bluefish is a regionally managed species. With the use of this data in the benchmark assessment, it is vital the RI ACCSP staff continue the outreach on eLOGBOOK to ensure the same quality of data will be available for use in future stock assessments.

RIDFW has both port and at-sea sampling programs for selected commercial fisheries within the state. The port sampling program focuses on collecting biological samples required by ASMFC fishery management plans. These species include striped bass, scup, weakfish, black sea bass, tautog, bluefish, menhaden, summer flounder, and lobster. RIDFW's at-sea lobster sampling program focuses on ASMFC management needs as well as state specific data needs. **RIDFW provides the data feed of lobster port and at-sea sampling data to ACCSP via the ASMFC Lobster Assessment Database. This feed is sent annually via a flat file.** Finfish port sampling data is scheduled to be fed into the ACCSP biological module once it has been fully implemented. Neither the lobster sampling programs nor the finfish sampling programs receive funding from ACCSP. ACCSP Staff is needed to organize this data and maintain the data feed to the ACCSP.

RIDFW staff also sit on ACCSP committees including: Operations Committee, Biological Review Panel, Bycatch Prioritization Committee, Commercial Technical Committee, Information Systems Committee, Standard Codes Committee, and Recreational Technical Committee. RIDFW staff serve as the chair of the Biological Review Panel, and Bycatch Prioritization Committee, and the vice chair of the Commercial Technical Committee. RIDFW staff are in constant communication with ACCSP staff members to ensure all issues regarding SAFIS are addressed in a timely manner and assist in resolving issues on a regular basis. **RIDFW staff are heavily involved in all aspects of ACCSP and contribute in full to all partners' interest.**

From 2002 through 2012, RI had a full-time state coordinator to manage and implement the ACCSP data collection program. The state coordinator's duties were to develop, monitor, and update ongoing and long-term programs relative to implementing the standards of the ACCSP in RI. In 2014 and 2015 a FTE administrative officer was the ACCSP coordinator role at a 33% funding level through ACCSP. A Fisheries Specialist was hired in 2014 to assist the administrative officer, and eventually transition into the ACCSP Coordinator role. The transition occurred in 2015 and the Fisheries Specialist continued in the role of ACCSP Coordinator in 2016. In February 2016 the Fisheries Specialist was hired by RIDFW as a full time employee, and continues the ACCSP Coordinator duties in the FTE position. Project staff will continue to provide support with processing and data entry of harvester logbooks, aiding with compliance monitoring and data auditing, quota monitoring and compliance issues relevant to SAFIS, SAFIS technical support and outreach, ACCSP committees, eTRIPS and eLOGBOOK outreach, grant management, and long term program development.

This proposal represents a recurring project funded by ACCSP for the past sixteen years. Figure 1 provides a graphical representation of the total budget of \$206,485, with 62% of the total cost being an in kind contribution from RIDFW. Table 1 provides a brief project history of ACCSP Implementation in RI. ACCSP has funded the majority of RIDFW's data collection to

date. Cost details for fiscal year 2017 are outlined in the requested budget while last year's requested funding is presented in Appendix A.

In a RIDFW white paper, Gibson and Lazar (2006) documented the deficiencies of the Rhode Island Marine Fisheries program and argued that significant infusion of funding and staff is needed. The RIDFW Marine Fisheries section has undergone a peer reviewed evaluation and need assessment, which concluded that RIDFW Marine Fisheries requires more staff to effectively maintain its services (Boreman et al., 2006). However, like many other states on the Atlantic Coast, the state of RI is experiencing fiscal shortfalls. **RIDFW is starting to actively assume some of the costs of ACCSP programs by devoting more staff time to the project and continues to seek alternate funding sources for the project. In 2010 the state of RI implemented the Rhode Island Recreational Saltwater License. Funds from license receipts are dedicated to the salary of a recreational biologist as well as improving data quality. The recreational biologist sits on the ACCSP recreational technical committee and does outreach for eLOGBOOK, thus these funds now help support the ACCSP program. Additionally, encouraging commercial fishermen to transition from paper logbooks to the eTRIPS reporting method through incentives, training programs and regulations has already decreased and ultimately will eliminate some of the costs surrounding the distribution and data entry required for paper logbooks. This will reduce the RIDFW's dependence upon ACCSP funds for maintaining timely and accurate data feeds and will be completed as funding and staff time allows. Furthermore, the transition the ACCSP coordinator from a fisheries specialist ASMFC employee to an RIDEM FTE (Principal Biologist) shows RIDFW's dedication to covering the costs of the ACCSP program in the future, but asks for funding assistance during this transitional time.**

RIDFW also recognizes the recent changes made to maintenance proposals regarding funding opportunities. These changes would not allow RI to ask for full maintenance funds for this project 2 years following this proposal. While RI does not have a concrete plan in place to take over the funding, we are looking at different options including: the continued move to electronic reporting, licensing solutions, and other means to fund the program. However, nothing is confirmed at this point, so the final years of available funding is important to RI and its ACCSP program.

Geographic Location:

The project will be administered out of the Rhode Island Division of Fish and Wildlife office in Jamestown, RI. The scope of the project covers all of RI and adjacent state and federal waters fished by RI license holders.

Program Accomplishment Measurement Metrics:

The success of the project will be measured by the following metrics:

- Dealer landings from SAFIS effectively used to monitor quota species, track fishing license activity, and support management programs.
- Catch and Effort and Dockside Sales Logbook program maintained through the eTRIPS program.
- Quality controlled data feeds to ACCSP to be delivered on time.
- Improved quality in data submitted to the ACCSP.

Bold text indicates sections that help with the ranking process
Highlighted text indicates changes from the first submission

10

Table 1. Project History.

Year	Title	Cost	Results
2000	Implementation of the ACCSP Program in Rhode Island	230,938	Planning and development of ACCSP commercial module implementation
2001	Implementation of ACCSP Continuation	20,000	Implementation of trip level reporting for all RI lobster harvesters, Commercial fishing license reconstruction
2002	Implementation of Phase 2 of ACCSP in the State of Rhode Island	133,084	ACCSP coordinator hired, planning and development of electronic dealer reporting system (RIFIS)
2003	Implementation of Phase 3 of ACCSP in the State of Rhode Island	131,760	Phased Implementation of RIFIS with focus on high volume dealers
2004	Continued Implementation of the ACCSP Program in the State of Rhode Island	159,716	Transition of RIFIS to SAFIS, implementation of federally permitted dealers
2005	Continued Implementation of the ACCSP Program in the State of Rhode Island	95,365	Quota monitoring system developed using SAFIS data, regulation created requiring all RI dealers to report landings via SAFIS
2006	Continuation of SAFIS and Finfish Logbooks in Rhode Island	150,365	Implementation of SAFIS completed, Development of harvester logbook for finfish and crustacean fishery sectors
2007	Coordination and Development of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	145,697	Implementation of harvester logbook for finfish and crustacean fishery sectors
2008	Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	128,647	Implementation of Dockside Sales Logbook, work begun on feeding data to ACCSP, maintenance of Data collection programs
2009	Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	142,075	Data feeds of Logbook data and lobster biological sampling developed.
2010	Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	100,983	eREC developed and eTrips pilot program started , data feeds continued, Fluke sector monitoring database developed, dealer report card system developed
2011	Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	85,584	Automatic data feed for catch and effort data established via eTRIPS, eREC maintained and developed, data feeds continued
2012	Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	99,379	Maintenance of automatic data feed for catch and effort data via eTRIPS on a real time basis, maintenance of eLOGBOOK, data feeds continued
2013	FY13: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	91,416	RSA tracking improved, maintenance of automatic data feed for catch and effort data via eTRIPS upload, maintenance of eLOGBOOK, data feeds continued
2014	FY14: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	85,408	RSA tracking improved, maintenance of automatic data feed for catch and effort data via eTRIPS upload, maintenance of eLOGBOOK, data feeds continued
2015	FY15: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	79,719	Maintenance of automatic data feed for catch and effort data via eTRIPS on a real time basis, maintenance of eLOGBOOK, data feeds continued. Improvements to party and charter industry tracking. eTRIPS user outreach and training
2016	FY16: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	79,736	Maintenance of automatic data feeds for catch and effort data via eTRIPS, maintenance of eLOGBOOK data feeds continued. Outreach of eTRIPS Mobile application. Continue eTRIPS user training and outreach.

Bold text indicates sections that help with the ranking process
Highlighted text indicates changes from the first submission

Table 2. Milestone Schedule

Activity	Month														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
SAFIS Support to RI Dealers	X	X	X	X	X	X	X	X	X	X	X	X			
Quota Monitoring	X	X	X	X	X	X	X	X	X	X	X	X			
ETrips support to industry	X	X	X	X	X	X	X	X	X	X	X	X			
ETrips logbook Data Entry	X	X	X	X	X	X	X	X	X	X	X	X			
Data Feeds to ACCSP	X	X	X	X	X	X	X	X	X	X	X	X			
Semi and Annual Report Writing							X					X	X	X	X

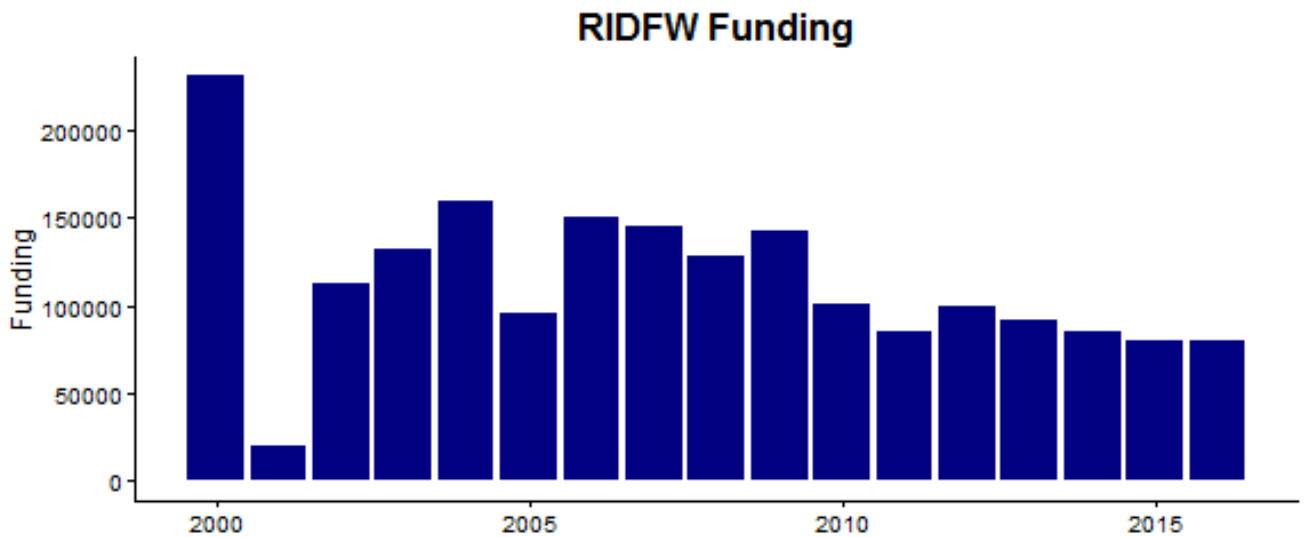


Figure 1. RIDFW past funding from ACCSP.

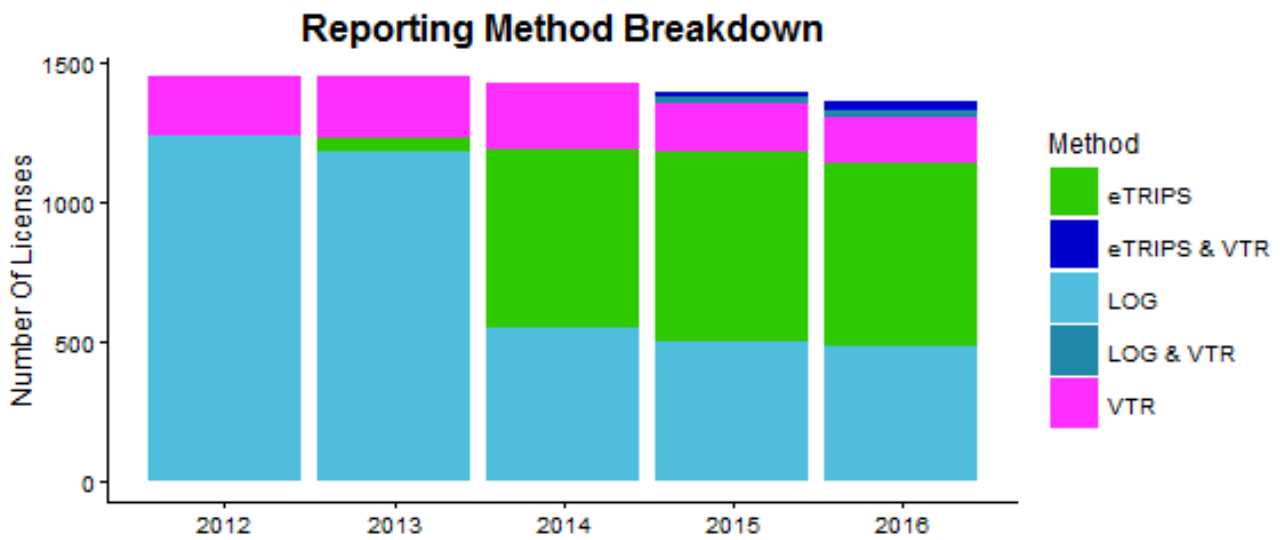


Figure 2: Reporting Method Breakdown

Bold text indicates sections that help with the ranking process
Highlighted text indicates changes from the first submission

References:

Boreman, J., Diodati, P., O'Shea, and E. Smith. 2006. Assessment of the Rhode Island Department of Environmental Management's Marine Fisheries Section. RIDEM Internal Document, October 2006.

Gibson M. and N. Lazar. 2006. Rhode Island Division of Fish and Wildlife, Marine Fisheries Section 2006: Current Activities, Funding, and an Appraisal of Future Needs. RIDEM Internal Document, August 2006.

Rhode Island Marine Fisheries Regulations (RIMFR), Part 7- Dealer Regulations, 2016

R Core Team (2016). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL <https://www.R-project.org/>.

Requested Budget FY 2017 (August 1, 2017 to July 31, 2018)

PERSONNEL COSTS:

Item	ACCSP Share	Direct State Share	Total
Supervising Biologist (FTE 10%)	\$0	\$12,312	\$12,312
Principal Biologist (FTE 60.5%)	\$0	\$50,159	\$50,159
Principal Biologist (FTE 49.5%)	\$41,039	0	\$41,039
Assistant Admin Officer (Contractual 40%/50%)	\$16,912	\$21,139	\$38,051
Seasonal Interns - 2 (RIDEM 50%)	\$10,692	\$10,692	\$21,384
Indirect Charges (RIDEM FTE 16%)	\$8,277	\$11,706	\$19,983
Total Personnel	\$76,920	\$106,008	\$182,928

EQUIPMENT & SUPPLY:

Item	ACCSP Share	Direct State Share	Total
Logbook Printing @ \$5.91 per logbook	\$0	\$3,546	\$3,546
Logbook Mailing @ \$4.75 per logbook	\$0	\$2,850	\$2,850
Dockside Printing @ \$4.96 per logbook	\$0	\$1,488	\$1,488
Dockside Mailing @ \$5.91 per logbook	\$0	\$1,773	\$1,773
Business reply envelope printing	\$0	\$2,500	\$2,500
Business reply account	\$0	\$1,500	\$1,500
Website development and updating	\$0	\$2,400	\$2,400
Outreach mailing	\$0	\$3,000	\$3,000
Office supplies	\$0	\$1,000	\$1,000
Telephone & Fax Usage	\$0	\$500	\$500
Vehicle Usage and Travel	\$1,500	\$1,500	\$3,000
Total Supply	\$1,500	\$22,057	\$23,557

TOTAL:

Item	ACCSP Share	Direct State Share	Total
Total Direct Charges	\$78,420	\$128,065	\$206,485
Percentage	38%	62%	

Bold text indicates sections that help with the ranking process
Highlighted text indicates changes from the first submission

COST DETAILS:

Description of Budget categories and expenses for this project.

a. Salary

Each person spends a fraction of their time working on this grant in a team effort. The annual salaries for personnel and the percentage of their time spent on this project are as follows:

From ACCSP:

- i. **Principal Biologist/ ACCSP Coordinator:** 49.5% ACCSP funded position to act as support to the ACCSP Coordinator; 49.5% of salary for one year (\$58,011) = \$28,715.
- ii. **Seasonal Interns:** Support for 2 Seasonal Interns to assist with data entry 50% of annual salary (\$10,692) X 2 = \$10,692.

From RIDEM as match:

- i. **Supervising Biologist: Scott Olszewski.**
Approximately 10% of annual salary (\$75,150) equals \$7,515.
- ii. **Principal Biologist: Nichole Ares.**
Approximately 40.334% of annual salary (\$58,011) equals \$23,398.
- iii. **Principal Biologist Nicole Lengyel**
Approximately 20.167% of annual salary (\$58,011) \$11,699.
- iv. **Seasonal Interns:**
Support for 2 Seasonal Interns to assist with data entry.
Approximately 50% of annual salary (\$10,692) X 2 = \$10,692.

b. Fringe benefits

Annual fringe benefits rates for all employees include the following:

Retirement 24%
Deferred Compensation 0.4%
FICA 6.2%
Medicare 1.45%
Health care \$21,937/year
Dental \$ 1,132/year
Vision Mercer - \$165/year
Assessed Fringe 4,25%
Retiree Health 6.75%

Total annual fringe benefits for Mr. Olszewski are \$47,965. Fringe benefits for 10% of his time equals \$4,797.

Total annual fringe benefits for Ms. Ares are \$24,897. Fringe benefits are divided 49.5% Federal / 40.334% match. Which equals \$12,324 Federal and \$10,041 match.

Total annual fringe benefits for Ms. Lengyel are \$24,897. Fringe benefits for her time at 20.167% equals \$5,021.

c. Travel

\$1,500 used for mileage, tolls for site visits and meetings, and to subsidize vehicle usage by ACCSP staff as well as any incurred travel expenses for dealer visits; RIDEM will assume half of the costs. These costs are based on historical used under the current award.

d. Equipment

No equipment will be purchased on this grant.

e. Supplies

From ACCSP:

- i. **Logbook Printing:** RIDEM will assume all costs of the printing.
- ii. **Travel:**

From RIDEM:

- iii. **Logbook Printing:** 600 logbooks @ \$5.91/logbook – \$3,546.
- iv. **Logbook Mailing:** 600 logbooks @ \$4.75/book = \$2,850
- v. **Dockside Printing:** 300 logbooks @ \$4.96/logbook - \$1,488
- vi. **Dockside Mailing:** 300 logbooks @ \$5.91/logbook - \$1,773
- vii. **Business Reply Envelope Printing:** 20,000 Envelopes @ \$0.125/envelope = \$2,500.
- viii. **Business Reply Account:** \$100/month Mar-Nov; \$200/month Dec-Feb = \$1,500.
- ix. **Website Development and Updating:** Costs associated with maintaining current website and creating a website section dedicated to online reporting, including the creation of Online Training Videos and PowerPoint Tutorials. Estimated at \$2,400.
- x. **Telephone and Fax usage** - \$500
- xi. **Office Supplies \$1,000**
- xii. **Miscellaneous and outreach mailing:**
 - 1. **Compliance mailing:** 1,600*\$0.50 = \$800
 - 2. **License renewal mailing to notify license holders of renewal regulations and changes:** 3,000*\$0.50 = \$1,500
 - 3. **Dealer Report Cards:** 140*4*\$0.50 = \$280
 - 4. **Returned Logs:** ~2% per month of 1,600 = 32*12 = 384*\$0.50 = \$192
 - 5. **Miscellaneous/Outreach mailings:** ~\$228

f. Contractual

Contractual will include the time spent for a contractual employee: Assistant Administrative Officer. Contractual annual salary and administrative charges total \$42,279. The employee will be spending 40% of their time on this grant, and 50% will be supported by RIDEM and used as match. 40% equals \$16,912 and 50% is \$21,139.

Bold text indicates sections that help with the ranking process
Highlighted text indicates changes from the first submission

g. Construction

There will be no construction as part of this grant.

h. Other

There is nothing in this category

i. Total Direct Charges

This is the sum of all direct charges to the grant, listed above.

j. Indirect charges.

Indirect charges are only calculated using RIDEM personnel charges. The negotiated Indirect Rate for fiscal year 2016 is 16%.

Summary of Proposal for Ranking

Proposal Type: Maintenance

Primary Program Priority: Catch and Effort (100%)

- 100% of dealers report trip level landings data for all species.
- 100% of commercial fishermen report trip level catch and effort data, which is entered into SAFIS (except federal permit holders that report on VTRs to NMFS) or via a 1-ticket system for shellfish entered at trip level by the dealer in the eDR.
- Metadata that is detailed on pages 6 and 9 are also collected to enhance and describe data sets that are important to RI's commercial fisheries.

Project Quality Factors:

Partners

- **Multi-Partner/Regional impact including broad applications** – This proposal outlines plans to collect and manage catch and effort, landings, and recreational data in RI. However data on many regionally managed species, such as American lobster, striped bass, black sea bass, bluefish, tautog, weakfish, scup and others is collected. As these species are regionally managed, the data collected are used in coastwide and regional stock assessments, therefore other partners benefit from having access to this data.

Funding

- **Contains funding transition plan** – This proposal contains a transition to funding plan on page 11. Changes in maintenance proposal funding has been addressed by RIDFW and the ACCSP Coordinator role has been transitioned to a Principal Biologist FTE. While RIDFW continues to ask for funds during this transitional period, it is understood there is a definite end date to the funds available to RI for this project.
- **In-kind contribution-** 62% of this project is funded by the RIDFW.

Data

- **Improvement in data quality/quantity/timeliness** – This proposal highlights many ways that RI provides timely catch and effort data and landings data to the ACCSP. This is done by fully utilizing all ACCSP data entry products (eTRIPS, eDR, eLOGBOOK, and SAFIS eTRIPS Mobile) as well as having standards backed up by Marine Fisheries regulations that require reporting that meets ACCSP standards. RI has successfully begun to push fishermen to using eTRIPS for direct data entry resulting in timelier data entry and is embracing eTRIPS Mobile for entry of data utilizing mobile devices. Additionally, RI is piloting a barcode licensing system in the upcoming year with hopes for full implementation to further improve data quality and timeliness.
- **Potential secondary module as a by-product** – Social and economic data that is described on pages 6 and 9 is collected regularly and used in fisheries models to characterize and understand RI fisheries. This data has also been made available to regional partners upon request and has been used in groundfish disaster relief funding to determine how the money is to be distributed.
- **Impact on stock assessment-** Data that is collected in this program is regularly used for many “in-house” stock assessments done on local species such as whelk, quahog, and soft shell clam. This data also includes information on regionally or jointly managed species, and is used for their science and management programs as well. Partners, like surrounding states, the ASMFC, and the NOAA Fisheries can and do use this information for various stock assessments.

Bold text indicates sections that help with the ranking process

Highlighted text indicates changes from the first submission

18

Appendix A: FY 2016 (May 1, 2016 to July 31, 2017)

Item	ACCSP Share	Direct State Share	Total
Supervising Biologist (FTE 10%)	\$0	\$12,729	\$12,729
Principal Biologist (FTE 30%)	\$0	\$28,481	\$28,481
Assistant Admin Officer (FTE 23%)	\$18,147	\$60,757	\$78,904
Fisheries Specialist (Contract 90%)	\$53,145	\$0	\$53,145
Indirect Charges (RIDEM FTE 16%)	\$2,903	\$0	\$2,903
Seasonal Interns - 2 (RIDEM 50%)	\$4,041	\$4,041	\$8,082
Total Personnel	\$78,236	\$106,008	\$184,244
EQUIPMENT & SUPPLY:			
Item	ACCSP Share	Direct State Share	Total
Logbook Printing @ \$5.91 per logbook	\$0	\$3,546	\$3,546
Logbook Mailing @ \$4.75 per logbook	\$0	\$2,850	\$2,850
Dockside Printing @ \$4.96 per logbook	\$0	\$1,488	\$1,488
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Website development and updating	\$0	\$2,400	\$2,400
Outreach mailing	\$0	\$3,000	\$3,000
Office supplies	\$0	\$1,000	\$1,000
Telephone & Fax Usage	\$0	\$500	\$500
Vehicle Usage and Travel	\$1,500	\$1,500	\$3,000
Total Supply	\$1,500	\$22,057	\$23,557
TOTAL:			
Item	ACCSP Share	Direct State Share	Total
Total Direct Charges	\$79,736	\$128,065	\$207,801
Percentage	38%	62%	

Bold text indicates sections that help with the ranking process
Highlighted text indicates changes from the first submission

Appendix B: Curriculum Vitae for Principal Investigator

Nichole L. Ares

Nichole.Ares@gmail.com

(978) 833- 4017

93A Mountview Rd, Narragansett RI 02882

Education

Roger Williams University

Bristol, RI

Bachelor of Science in Marine Biology

Dec. 2010

Minor in Mathematics

GPA: 3.212/4.0

Atlantic States Marine Fisheries Commission

October 2015

Introduction to Stock Assessment

Work Experience

Rhode Island Department of Environmental Management

February 2016-Present

Principal Biologist

- Coordinate and improve the Atlantic Coastal Cooperative Statistics Program (ACCSP) in Rhode Island.
- Monitor commercial fishing quotas, lead quota management meetings and determination of seasonal closures and possession limit changes.
- Reporting compliance for ~1500 RI commercially licensed fishermen. Including tracking compliance, training and support to fishermen on report submissions and utilization of the electronic reporting system. Supervise and train staff on data entry of collected catch and effort data. Audit data quality of submitted reports.
- Data accuracy and quality of dealer reported landings data for the ~140 RI commercial licensed seafood dealers. Correction of inaccuracies in data, training new seafood dealers, and retraining dealers with data entry issues.
- Serve on ACCSP committees, including Commercial Technical Committee, Information Systems Committee and Standard Codes Committee.
 - Serve as vice chair of the Commercial Technical Committee
- Manage and operate the Narragansett Bay Juvenile Finfish Seine Survey.
- Assist in other field work as necessary including but not limited to otter trawl, ventless lobster pot, and ventless fish pot surveys.
- Write and submit project plans, compliance reports, and grant proposals.

Atlantic States Marine Fisheries Commission

May 2014- February 2016

Fisheries Specialist 1- ACCSP Coordinator

- Coordinate and improve the Atlantic Coastal Cooperative Statistics Program (ACCSP) in Rhode Island under the supervision of Rhode Island Division of Fish and Wildlife Marine Fisheries Section.
- Monitor commercial fishing quotas, lead quota management meetings and determination of seasonal closures and possession limit changes.
- Track reporting compliance for ~1500 RI commercially licensed fishermen. Train fishermen and seasonal staff on report submissions. Audit data quality of submitted reports.
- Audit and correct data of dealer reported landings data for the ~140 RI commercial licensed seafood dealers. Train new seafood dealers and retraining dealers with data entry issues.

Bold text indicates sections that help with the ranking process

20

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- Write and submit project plans, compliance reports, and grant proposals.
- Member of various ACCSP committees, including Commercial Technical Committee and Information Systems Committee.
 - Serve as vice chair of the Commercial Technical Committee
- Assist in field work as needed, including beach seine, lobster ventless pot, and otter trawl surveys.

East West Technical Services LLC Feb. 2012- May 2014
 At-Sea Monitor and Scallop Observer

- Organize fishing trips with federal commercial fishermen of the North Eastern United States.
- Collect catch and discard data on groundfish (trawl, gillnet, and longline) and scallop dredge fishing vessels. Identify all species brought on board and take biological measurements and samples including; length, weight, scales, vertebrae, and otoliths.

Rhode Island Department of Environmental Management June. 2011-Dec.
 2011

Division of Fish and Wildlife- Marine Fisheries Student Researcher April 2013-Oct. 2013

- Data and logbook entry using Microsoft Access, Microsoft Excel, SAFIS, and Telnet.
- Contact fishermen when questions arise with logbook submissions.
- Assist in field work sampling in beach seine, otter trawl, clam suction, clam dredge, lobster pots, fish pots, and finfish port sampling.
- Fish aging structure removal (operculum, scales, and otoliths) and preparation.

Research Experience

Roger Williams University June 2009- June 2011

- Project goals are to examine mercury bioaccumulation in fish tissues, examine selenium concentrations in tissues, and examine selenium mercury relationships.
- Includes sampling methods of rod & reel and otter trawl surveys, the extraction of muscle, liver, brain tissues, and otoliths. Preparing tissues samples for atomic absorption spectroscopy and inductively coupled plasma mass spectroscopy. Use of Microsoft Excel and SAS to analyze the data, PowerPoint to present data at conferences. Organize the laboratory and help keep scientific equipment running correctly.
- Mentor: Dr. David L. Taylor, Assistant Professor

Technology, Skills, and Certifications

- Proficient in Microsoft Word, PowerPoint, Excel, Access, and Picture Manager, SAFIS info systems, Telnet, HTML, Oracle Databases (SAFIS Interface and Business Objects), and R Studio
- Familiar with SQL.
- Large dataset management
- Certified PADI Open Water Scuba Diver
- RIDEM Certificate of Boating Safety Education
- U.S Coastguard Auxiliary Boating Safety Course
- Fisheries sampling techniques including fish and invertebrate identification, trawl, beach seine, lobster and fish pots, gillnets, and dissections.

Bold text indicates sections that help with the ranking process

Highlighted text indicates changes from the first submission



State of New Jersey

MAIL CODE 501-03

DEPARTMENT OF ENVIRONMENTAL PROTECTION

NATURAL & HISTORIC RESOURCES

DIVISION OF FISH & WILDLIFE

P.O. Box 420

Trenton, NJ 08625-0420

TEL. (609) 292-2965 FAX. (609) 984-1414

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CHRIS CHRISTIE

Governor

BOB MARTIN

Commissioner

KIM GUADAGNO

Lt. Governor

Atlantic Coastal Cooperative Statistics Program
Operation and Advisory Committee
1050 N. Highland Street., Suite 200 A-N
Arlington, VA 22201

August 15, 2016

I am pleased to submit the revised proposal titled "Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries". Please feel free to contact me with any questions or comments.

Sincerely,

Peter Clarke
Fisheries Biologist
New Jersey Division of Fish and Wildlife
Bureau of Marine Fisheries

Proposal for Funding made to:
Atlantic Coastal Cooperative Statistics Program
Operations and Advisory Committees
1050 North Highland Street, Suite 200 A-N
Arlington, VA 22201

Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries

Submitted by;
Peter J. Clarke
New Jersey Division of Fish and Wildlife
P.O. Box 418

Revision Notes

-NJ state specific comments have been highlighted in yellow with NJ number corresponding to the comment made, i.e. (NJ X). NJ Revisions can be found on pp. 6 (NJ 1) (NJ 2); 26 (NJ 3).

Port Republic, NJ 08241

Proposal for FY2017 ACCSP Funding

Revised August 15 2016

Applicant Name: New Jersey Division of Fish and Wildlife
Bureau of Marine Fisheries
P.O. Box 418
Port Republic, NJ 08241

Project Title: Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries

Project Type: Maintenance

ACCSP Program Priorities: 1) Catch/Effort (55%), 2) Biological (45%)

Project Supervisor: Peter Clarke, Senior Biologist (NJDFW)

Principal Investigators: Lloyd Lomelino, NJ ACCSP Fisheries Specialist
Chad Power, NJ ACCSP Fisheries Specialist

Project Staff: Lloyd Lomelino, NJ ACCSP Fisheries Specialist
Chad Power, NJ ACCSP Fisheries Specialist

Requested Amount: \$158,547

Requested Award Period: September 1, 2017 to August 31, 2018

1. Objective

To continue New Jersey's trip level catch and effort data collection, dependent at-sea observer coverage, and biological characterization of commercial fisheries, a program started in 2001.

2. Need

Since 2001, several programs have been implemented by the New Jersey Division of Fish and Wildlife (NJDFW) through funds provided by the Atlantic Coastal Cooperative Statistics Program (ACCSP). These funds have been vital in proactive management of the marine resources in New Jersey (NJ). Loss of funding for these critical programs would result in a significant loss of commercial fisheries data collection for the State of NJ, the ACCSP, and the Atlantic States Marine Fisheries Commission (ASMFC).

NJ programs currently funded under the ACCSP grant include commercial trip level data collection via eTRIPS for blue crab, American eel, Atlantic menhaden and tautog; port sampling of the Atlantic croaker, weakfish, American eel, American shad, and Atlantic menhaden fisheries; at-sea observer coverage for American lobster off the NJ coast, and trip level dealer reporting and quota management through the Standard Atlantic Fisheries Information System (SAFIS) electronic Dealer Reporting (eDR). Six of the species that NJ collects biological data for occur in the upper quartile of the ACCSP Biological Priority Matrix. The major scope of work for the current FY2017 proposal has not changed from the accepted FY2016 proposal. As part of the ACCSP funding process, NJ has submitted all progress reports covering the FY2015 project to the ACCSP and the National Marine Fisheries Service (NMFS) Grants Online ([Progress Reports](#)). The final 2015 Report will be due on November 30, 2016. The NJ FY2016 project will begin on September 1, 2016.

2.A. Fisheries Dependent At-Sea Observer Program

NJ ACCSP staff has used at-sea observer coverage to describe fishing activities and aid in biological characterization of American lobster, and tautog. The information collected is critical to accurate stock assessments and ultimately sustainable harvest practices for these species. Characterization of the NJ commercial tautog fishery began in 2007 and will continue into 2016 to document sex ratios, length:weight relationships and age information. NJ ACCSP staff have been sampling federally and State permitted American lobster pot vessels since 2008 and will continue to do so based on Addenda VIII and X of the American Lobster Fishery Management Plan, which mandates at-sea observer coverage as a means of describing the fishing activities in southern New England. The ASMFC American Lobster Technical Committee encourages sampling at-sea as a way of monitoring commercial bycatch and discards in the fishery. In addition, port sampling is also recommended as a source of characterizing the commercial landings.

2.B. Biological Characterization of Commercial Fisheries

The NJ biological characterization sampling program provides accurate length, weight, age, and temporal data for stock assessment and management of commercial harvest for the NJDFW, ASMFC, and NMFS. Target sample sizes identified through the ASMFC's Fishery Management Plans (FMP) achieved from 2016 are found in Table 3 of the Appendix. Sampling is conducted through port of landings intercepts and will be continued in FY2017 for weakfish, Atlantic croaker, Atlantic menhaden, American shad, tautog, and American eel. NJ will continue sampling for black sea bass, summer flounder, river herring, and Atlantic croaker through independent sampling on the NJ Ocean Trawl Survey. Data collected will provide information on sex ratios/mean length/weight as identified by the Stock Assessment Review Committee (SARC) on June 20, 2008.

2.C. ACCSP Data Feeds

NJ is currently conducting several projects under the auspices of the ACCSP, most of which are mandates from the ASMFC and require compliance by the State of NJ in order to fulfill various ASMFC's FMPs. Equally important to the collection of fisheries dependent data is the assurance of accurate data entry and quality assurance before these data are used as fisheries management tools. The ACCSP has increasingly taken on more duties as the data depot starting with SAFIS and moving to Fisheries of the US for the NMFS. As such, it is advantageous to the success of not only the ACCSP but to all 23 ACCSP partners that partner data be supplied to the ACCSP in a timely and accurate fashion facilitating the movement of data into fisheries management.

2.D. Commercial Trip and Dealer Reporting (eTRIPS, eDR, Commercial Harvester & Dealer Reports)

The importance of a standardized trip and dealer reporting system is clear. The effort put forth to use an all-inclusive standardized data entry program is critical for the NJDFW to provide a single location to find harvest data for multiple fisheries/species/years. Further, the importance of single source harvest data is similar to that for dealer data entry and warehousing: allowing managers and scientists to pull accurate landings data through a query database using common ACCSP data formats. The NJ ACCSP Fisheries Specialists' provide support to federal/state permitted dealers facilitating weekly eDR reporting. Additionally, it is the responsibility of the NJ ACCSP staff to monitor landings through eDR, correct erroneous data when trip landings and dealer reports are inconsistent, and recommend closures when seasonal quotas are reached within the state.

3. Results and Benefits

The ACCSP Coordinating Council approved NJ's proposal "Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in

NJ” for FY2016. Included again in the FY2017 proposal is the request for salary for staff on the project with a small amount of funds allocated towards aging summer flounder and black sea bass otoliths by the NMFS Woods Hole Laboratory. The FY2017 proposal will ensure that ongoing projects in NJ will continue to maintain NJ’s participation in the ACCSP/ASMFC’s mandated compliance programs. In kind state match has averaged over 50% for the past five fiscal years (2010-2015) for the NJ ACCSP Program and continues to be the case for FY2017 (See page 15).

3.A. Fisheries Dependent Sampling Program

Lobster At-Sea Observer Coverage. In January 2008, at-sea sampling commenced aboard lobster vessels fishing in Lobster Conservation Management Areas (LCMA) 4 and 5 off the coast of NJ. Staff will continue at-sea observer coverage in FY2017 to characterize the NJ lobster fishery except during each LCMA closed seasons **occurring April 30 - May 31 in LCMA 4, and February 1 – March 31 in LCMA 5.** All data collected resulting from this program will be delivered to the ACCSP for inclusion into the Lobster Database. As this is the only at-sea observer program in LCMA 4 and 5, it is imperative to continue at-sea sampling.

3.B. Biological Characterization of Commercial Fisheries

Biological sampling for weakfish, Atlantic croaker, American shad, Atlantic menhaden, American eel, summer flounder, black sea bass, tautog and river herring was a maintenance project for FY 2016. Sampling targets were near 100 % of set goals during the first 10 years (2006-2016, Table 1) and will be similar for FY2017.

Commercial weakfish, American eel, Atlantic croaker, tautog, river herring, and American shad samples collected are processed and aged at the NJDFW Nacote Creek aging facility in Port Republic, New Jersey. Atlantic menhaden bait samples collected from the NJ commercial purse seine, pound net, and gillnet fisheries are processed at the NJDFW Nacote Creek facility and forwarded to the NMFS Beaufort Laboratory, Beaufort, North Carolina for aging. Summer flounder and black sea bass collections made on the NJDFW Ocean Trawl Survey are processed for length, weight, and sex at the NJDFW facility, hard parts are sent to the NMFS Woods Hole Laboratory for processing and age determination. Future samples collected will be processed and aged using the same protocol as in previous years. A current summary of species processed and aged by the NJDFW staff in support of this proposal are found in Table 1 of the Appendix.

A NJDFW Biological Characterization data entry system was developed in 2006 to warehouse all data collected under the commercial biological characterization program. The NJ biological database consists of trip level effort information from which the samples were taken and biological data taken from each individual sample. To date, all biological data collected for tautog, weakfish, Atlantic croaker, American shad,

American eel, Atlantic menhaden, black sea bass, and summer flounder have been entered, checked for quality assurance, and are available for assessment purposes.

The ACCSP and ASMFC have established species specific biological sample size goals for each partner state based on the total annual landings for each specific species.

Sampling targets for species not based off of commercial landings were developed by NJDFW staff at the initiation of this project and may exceed what is mandated by ASMFC through species specific FMPs (NJ 2). All data entry is standardized in the ACCSP format and queried when needed by NJDFW staff members for inclusion in technical reports, stock assessments, etc.

3.C. ACCSP Data Feeds

The NJDFW/NJ ACCSP staff provides the ACCSP with support tables to facilitate timely and accurate landings for all species in which trip level data are collected.

Quality assurance is performed monthly by NJ ACCSP staff to ensure a smooth transfer of data for the “End of the Year” Fisheries of the U.S. report submission.

3.D. Commercial Trip and Dealer Reporting (eTRIPS, eDR, Commercial Harvester & Dealer Reports)

The ACCSP and the State of NJ have gained a significant amount of commercial landings data while improving accuracy and efficiency through the use of eTRIPs and eDR. The eTRIPS program encourages fishermen to enter their own catch and effort data providing each fisherman the ability to review data without staff involvement. Commercial trip level reporting is mandatory for American eel, blue crab, tautog, and menhaden in NJ. Additionally, commercial trip level data are available to authorized NJDFW staff for query purposes used in harvest compliance, and stock management. NJ has gained a significantly higher amount of commercial landings data through eDR for tautog, eel, menhaden, and blue crab. NJ ACCSP staff remove duplicate reports from multiple sources (paper, e-TRIPS) prior to ACCSP data uploads, ensuring accurate landings (NJ 1). Continuation and maintenance of eDR is imperative for the improvement of NJ’s commercial fishery landings data collection. SAFIS eDR is the exclusive method of quota monitoring in NJ and has proven itself as a central management tool for monitoring fisheries status in NJ.

A major goal from the onset of the NJ ACCSP program was to develop and implement an all-encompassing commercial trip and dealer reporting system for the NJDFW. This goal was accomplished by NJ ACCSP staff on January 1, 2016, through the New Jersey Commercial Harvester Trip Reporting Program. The New Jersey Harvester Trip Reporting Form was created to help standardize all trip level data collected, and provide fishermen with a single comprehensive reporting form for all issued commercial licenses. The New Jersey Harvester Trip and Dealer Reporting Forms collect both catch and effort and bycatch and discards data. A copy of the harvester trip form can be found

in Figure 4. A summary of New Jersey Division of Fish and Wildlife commercial trip reporting since the NJ ACCSP project's initiation is described in Table 2.

The New Jersey Commercial Harvester Trip Report Database was developed and is the primary database for New Jersey Trip Harvester Trip Reports submitted by fishermen. In combination with SAFIS eTRIPS, the New Jersey Commercial Harvester Reporting Form will comprehensively characterize the commercial fisheries within New Jersey State Waters. All reports are entered into the New Jersey Harvester Trip Report Database, reviewed for quality assurance, and will be provided bi-annually as data feeds to the ACCSP. A summary of trip reports entered into the NJ Harvester Trip Report Database can be found in Figures 5 and 6.

4. Approach

4.A. Fisheries Dependent Sampling Program 30% Allocated Funds

Lobster At-Sea Observer Coverage. The primary location of commercial lobster landings during the past 5 years off NJ takes place in LCMA 4 with some landings occurring in LCMAs 3 and 5. Therefore, at-sea observer sampling will consist of 16 trips per year in LCMA 4. During each sampling effort, every lobster brought aboard the vessel is measured for carapace length in addition to biological observations including sex, egg development on females, cull status (number of claws), shell condition (diseased or not), and shell hardness.

Tautog At-Sea Observer Coverage. NJDFW will continue to collect filleted fish (racks) from the recreational hook and line fishery. Data collected include sex, length, weight, area fished, and effort data. Sampling targets can be found in Table 3 of the Appendix. Data from the commercial fishery will be entered through the ACCSP SAFIS eTRIPS application along with at-sea and port sampling of commercial fisheries.

4.B. Biological Characterization 15% Allocated Funds

Sampling of weakfish, Atlantic croaker, American shad, Atlantic menhaden, American eel, summer flounder, black sea bass, and river herring (alewife and blueback) will continue in 2017 based on 2016 annual landings of each species. Six of the species sampled by NJ are ranked in the top quartile of the biological sampling priority matrix. Effort, either at-sea or dockside, is assigned in accordance with guidelines defined in the ASMFC's FMPs for each species. NJ ACCSP staff and NJDFW seasonal technicians will continue to collect biological samples. Staff will process (cut and/or mount) all hard structures to be aged. The full time staff of Principal Biologist, Assistant Biologist, and Fisheries Specialists' will age all otoliths. All age samples collected except menhaden, summer flounder, and black sea bass are aged at the NJDFW Nacote Creek facility in

Port Republic NJ. Menhaden are sent to the NMFS aging lab in Beaufort, NC; summer flounder and black sea bass are sent to the NMFS aging lab in Woods Hole, MA. For all other species, NJDFW and ACCSP staff have received the necessary training to process and read all the targeted otolith samples (Table 1 of the Appendix). NJ will coordinate with NOAA Fisheries-Greater Atlantic Regional Fisheries Office (GARFO) to avoid duplicate aging.

Data collected from each sample is transferred to electronic format by NJ ACCSP staff (ACCSP Fisheries Specialists). After data are successfully entered and quality control measures have been performed, NJ ACCSP staff will send data feeds to the ACCSP for integration into the ACCSP Data Warehouse. This method will allow stock assessment committees, technical committees, and operations committees to view the status of the NJ biological sampling program. Species specific sampling and data collection methodology will follow previous sampling protocol. Species specific target samples sizes for 2016 can be found in Table 3 of the Appendix.

4.C. ACCSP Data Feeds 15% Allocated Funds

The NJ ACCSP Program supplies the ACCSP with data from multiple sources including paper/electronic landings data and biological characterization programs. Some NJ landings data are not collected via eTRIPS or eDR and must be converted from paper to electronic records. Included in paper reports are commercial trip level landings of blue crab, American eel, tautog, and menhaden. Biological characterization data are collected for American lobster, tautog, weakfish, American shad, American eel, Atlantic croaker, summer flounder, black sea bass, and river herring. Following collection, the data are then input into an electronic database for future use and analyses.

4.D. Commercial Trip and Dealer Reporting (eTRIPS, eDR, Commercial Harvester & Dealer Reports) 40% Allocated Funds

The continuation of SAFIS implementation includes components for web-based dealer reporting (eDR), web-based fishermen reporting, paper-based data entry by NJDFW staff, report compliance monitoring, and site administration (user access, look-up tables, data correction, etc.). The NJ ACCSP Fisheries Specialists supervise the implementation of the NJ eTRIPS application. NJ ACCSP staff provide state permitted fishermen with user accounts, establish favorites lists and facilitate the usage of the eTRIPS application, a web based trip level reporting form. NJ ACCSP staff (Fisheries Specialists') and NJDFW staff (Principal Investigator) develop and present training seminars for groups and conduct individual meetings when necessary to support fishermen in the use and customization of the eTRIPS application. These training tools include Power Point presentations at local libraries, firehouses, and other public meeting venues. The NJ ACCSP project attempts to train multiple individuals at each meeting, however, there are frequently cases when individual attention and support is required

outside of these announced seminars. In addition, NJ staff conducts compliance monitoring of reporting and perform QA/QC analyses of data entered into the application. NJ ACCSP Fisheries Specialists identify and complete data gaps/user support for state-permitted dealers, fishermen, and managers. Cross validation for all species entered into eTRIPS with SAFIS eDR is completed during each reporting period to assure that duplicate reporting is not taking place by comparing electronic reports to those received in paper logbook format by the NJDFW for species such as tautog and Atlantic menhaden. Compliance of fishermen monthly reports is facilitated using the eTRIPS program.

NJ ACCSP staff lends support to the majority of state permitted dealers, typically providing logistical information regarding quota status, vessel recognition, gear selection, and general state regulations. The NJ ACCSP staff will travel to commercial fishing facilities providing assistance to permitted dealers pertaining to data entry for the eDR application as needed. All NJ ACCSP staff travel for dealer and fishermen support pertaining to SAFIS and eTRIPS data entry, meetings for the further development of NJ commercial fisheries landing statistics program, and training expenses incurred will be covered by the NJ ACCSP.

In addition to all trip and dealer reports entered electronically through SAFIS, NJ ACCSP Staff collect all paper trip reports submitted on the NJ Commercial Harvester and Dealer Reporting Forms. Harvester and Dealer Reports are due at the same frequency as electronic reports. Trip and dealer reports are entered into a Commercial Harvester and Dealer Database and are checked for accuracy periodically. All finalized trip and dealer data will be submitted in by staff in ACCSP standards as bi-annual data feeds.

5. Geographic Location

The NJDFW Fisheries Biologist will serve as the Principle Investigator for this with NJ ACCSP Fisheries Specialists (2) serving as staff. The project will be administered from the New Jersey Department of Environmental Protection (NJDEP), Division of Fish & Wildlife Nacote Creek Research Station in Port Republic, New Jersey.

6. Milestone Schedule: Month 1 following receipt of grant approval.

Description of Activity	Month														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Electronic Vessel Trip Reporting (monitor existing fishermen reports, train new fishers, rollout system for additional species, data entry of data collected via paper based reports)	X	X	X	X	X	X	X	X	X	X	X	X			
Biological Characterization of Commercial Fisheries (Collect lengths, weights and age structures from NJ's commercial fisheries. Process and age scales, opercula or otoliths collected)	X	X	X	X	X	X	X	X	X	X	X	X			
Lobster Landing Statistics (Lobster harvest data collection with components of eVTR, dealer data, at-sea sampling, port sampling)	X			X		X	X	X	X	X	X	X			
Tautog Landing Statistics (collection of commercial at-sea coverage data)	X	X	X	X	X	X	X	X	X	X	X	X			
ACCSP Data Feeds (data entry of all biological samples collected by the NJDFW, transmission of all data to the ACCSP through monthly data feeds, SAFIS support tables)			X			X			X			X			
Electronic Dealer Reporting (continue to perform quota monitoring and the online reporting of commercial fisheries landings data for summer flounder, black sea bass and scup)	X	X	X	X	X	X	X	X	X	X	X	X			
Semi-annual report 1							X								
Semi-annual report 2													X		
Final report															X

7. Project Accomplishment Measurements update

Project Component	Goal	Measurement
SAFIS Electronic Trip Reporting (eTRIPS) Phase I	Successfully collect data from fishermen reports, check for compliance, and perform quality assurance.	All data checked and compliance performed prior to the 10 th of the following month.
SAFIS Electronic Trip Reporting (eTRIPS) Phase II	Enter all received data submitted by fishermen, perform quality assurance measures.	All data entered and checked prior to the 10 th of the following month.
Biological Characterization of Commercial Fisheries	Meet all target sample sizes for length, sex, age for each species.	Number of samples collected.
Dependent Fisheries At-Sea Observer Program	Conduct the prescribed number of trips and collect target number of samples by species and management area.	Number of trips made and number of samples collected.
ACCSP Data Feeds	Supply the ACCSP with data feeds as described including participant, and landings data on the schedule described	Were the data feeds performed by the deadlines identified?
SAFIS Electronic Dealer Reporting (eDR)	Supply support to participating eDR dealers with NJ state dealer permits when requested. Perform report compliance on a monthly basis. Manage summer flounder, black sea bass, and bluefish quota as allocated to the State of NJ.	Was support provided and quotas managed?
New Jersey Commercial Harvester Trip Report	Create an all-encompassing reporting form for all state issued commercial marine fishing licenses.	All trip reports are entered and checked for quality assurance and accuracy.

8. FY 2017 Budget (Letters in parenthesis pertain to Federal Grant Object Codes)

<i>Item</i>	<i>Calculation</i>	<i>Total NJ DFW in-kind support</i>
Salaries (NJDFW)		
Principal Biologist 5% in-kind		\$4,738
Principal Biologist-Age and Growth Lab Supervisor- %35 in-kind (current FTE)		\$28,218
Senior Biologist- 25% in-kind (current FTE)		\$13,694
Technician I-Data Processing and Entry- 50% ACCSP, 50% in-kind (current FTE)		\$28,190
Clerical 10%		\$4,922
Fringe benefits (46.35% on FTEs)		\$36,970
Supplies & Materials		
Scientific Equipment (Measuring boards, scales)		\$250
Materials for collection and preparation of scales, otoliths, operculi, etc.		\$350
purchase of samples (eel otoliths)		\$600
Other		
NJDFW Trawl Survey (\$5,900 per 12 hr day x 10 days)		\$59,000
Department Network account (OIRM)		\$4,000
NJ DFW indirect costs (20.29% of salaries)		\$24,794
Subtotal NJ funds		\$205,725
Append to ACCSP Administrative Grant		
Salaries (NJ ACCSP Staff)		
(a) 2 ACCSP Fisheries Specialists (ASMFC employees)	2 x (2080hrs x 20.00/hr)	\$83,200
(b) Benefits 25%	25% of total salaries	\$20,800
(c) Travel (mileage and tolls)	7,142 Miles x \$0.54/mile	\$3,857
(d) NMFS Contract; process & age fluke/black sea bass otoliths	12.94/sample x 1,000 samples	\$12,940
(e) * ACCSP Overhead (35%)	35 % of the sum of budget items a, b, and c.	\$37,750
(f) Total to append to ACCSP Administrative Grant		\$158,547
Total Project Costs = Subtotal NJ Funds + Total to append to ACCSP Admin Grant		\$364,272

Budget Narrative

(a). Salaries; ACCSP Fisheries Specialists:

(2) NJ ACCSP Fisheries Specialists' annual salary.

(b). benefits of above employees

25% of the annual salary for the two NJ ACCSP staff.

(c). Travel (mileage and tolls):

The average amount of miles traveled over the last three years to commercial docks, vessels, and instate meetings with industry representatives for the entire project = 7,142 miles / year.

$7,142 \times \$0.54 = \$3,857$ dollars.

(d). NMFS Contract:

For aging otoliths from summer flounder and black sea bass collected by NJ ACCSP Staff:

500 black sea bass otoliths x \$12.94 per otolith = \$ 6,470.

500 summer flounder otoliths x \$12.94 per otoliths = \$ 6,470.

1,000 total otoliths to be aged x \$ 12.94 per otoliths = \$12,940.

purchase of 350 American eels from fishermen.

(e). ASMFC Overhead:

35 % of the sum of budget items a, b, and c.

(f). ACCSP Administrative Grant Project Costs:

Total of (a) through (f) does not include in-kind support. No funds are being directly received by the State of NJ.

The FY2017 budget is in two parts, the first part details the amount that is being provided as in-kind match by the NJDFW, while the second part is the amount to be amended to the ACCSP Administrative Grant. The \$158,547 covers the salaries for two Fisheries Specialist positions that were hired by the ACCSP and work out of the NJDFW's field office in Port Republic, NJ. This covers their fringe and indirect, the ASMFC's overhead, their travel for mileage, and tolls during port sampling and at-sea observer trips in addition to attendance at ACCSP Committee meetings. The ACCSP also is able to administer funds to have the summer flounder and black sea bass otoliths prepared and ages determined by the NMFS Northeast Fisheries Science Center staff.

The in-kind funding provided by the NJDFW includes; salaries for NJDFW full time employees under the titles of Supervising Biologist, Principal Biologist, Assistant Biologist, Technician I, and Clerical; supplies for port sampling, aging laboratory materials, and purchasing eel samples; staff time for independent samples taken aboard the NJ Ocean Trawl Survey and processed at the NJDFW's Port Republic field station, as well Department network support for online reporting systems, and computer support for staff working under the ACCSP Project. Sources of in-kind funding come from the annual state appropriation for the NJ Bureau of Marine Fisheries and from the Atlantic Coastal Grant.

8.1 FY 2016 Budget (Letters in parenthesis pertain to Federal Grant Object Codes)

<i>Item</i>		<i>Total NJ DFW in-kind support</i>
Salaries (NJDFW)		
<i>Calculation</i>		
Principal Biologist 5% in-kind		\$4,738
Principal Biologist-Age and Growth Lab Supervisor- %35 in-kind (current FTE)		\$28,218
Senior Biologist- 25% in-kind (current FTE)		\$13,694
Technician I-Data Processing and Entry- 50% ACCSP, 50% in-kind (current FTE)		\$28,190
Clerical 10%		\$4,922
Fringe benefits (46.35% on FTEs)		\$36,970
Supplies & Materials		
Scientific Equipment (Measuring boards, scales)		\$250
Materials for collection and preparation of scales, otoliths, operculi, etc.		\$350
purchase of samples (eel otoliths)		\$600
Other		
NJDFW Trawl Survey (\$5,900 per 12 hr day x 10 days)		\$59,000
Department Network account (OIRM)		\$4,000
NJ DFW indirect costs (20.29% of salaries)		\$24,794
Subtotal NJ funds		\$205,725
Append to ACCSP Administrative Grant		
Salaries (NJ ACCSP Staff)		
(a) 2 ACCSP Fisheries Specialists (ASMFC employees)	2 x (2080hrs x 20.00/hr)	\$86,528
(b) Benefits 25%	25% of total salaries	\$21,632
(c) Travel (mileage and tolls)	7,142 Miles x \$0.56/mile	\$4,000
(d) Computers and docking stations		\$3,600
(e) NMFS Contract; process & age fluke/black sea bass otoliths	12.94/sample x 1,000 samples	\$12,940
(f) * ACCSP Overhead (35%)	35 % of the sum of budget items a, b, and c.	\$39,256
(g) Total to append to ACCSP Administrative Grant		\$167,956
Total Project Costs = Subtotal NJ Funds + Total to append to ACCSP Admin Grant		\$373,681

9. Maintenance Projects

Amount of funds received directly by the NJDFW, the amount appended to the ACCSP Admin. Grant for NJ ACCSP Staff salaries, and the amount and percentage of in-kind funds supplied by the NJDFW for the ACCSP projects.

History Details for NJDFW ACCSP Funded Projects						
Fiscal Year	Period	Project	NJ ACCSP Funds Requested	Appended to ACCSP Admin Grant	NJDFW In-Kind	In-Kind Percentage of Total Project Cost
2001	9/01/2001 through 8/31/2002	Integration of Commercial Blue Crab Harvest Data into the ACCSP	\$133,988	\$0	\$0	0%
2005	5/01/2005 through 4/30/2006	Implementation of Phase 2 of the ACCSP for the State of New Jersey	\$89,180	\$84,375	\$41,831	19%
2006	9/01/2006 through 8/31/2007	Biological Characterization of Four New Jersey Commercial Fisheries	\$79,722	\$0	\$59,986	43%
2006	9/01/2006 through 8/31/2007	Continuance of Phase 2 of the ACCSP for the State of New Jersey	\$81,264	\$78,975	\$63,556	28%
2007	9/01/2007 through 8/31/2008	Implementation of eVTR, Biological Characterization and Continuance of SAFIS Coordination for the State of New Jersey	\$167,544	\$87,413	\$111,617	30%
2008	9/1/2008 through 8/31/2009	NJ Implementation of ACCSP Commercial Fisheries Data Collection; Electronic Vessel Trip Reporting, Electronic Dealer Reporting, and Biological Characterization.	\$128,536	\$150,525	\$86,609	24%
2009	9/1/2009 through 8/31/2010	Introduction & Continuation of SAFIS and Biological Characterization of Commercial Fisheries in NJ	\$52,814	\$174,096	\$132,008	37%
2010	9/1/2010 through 8/31/2011	Further Development of SAFIS and Biological Characterization of Commercial Fisheries in NJ	\$24,301	\$174,096	\$191,008	49%
2011	9/1/2011 through 8/31/2012	Continued Expansion of SAFIS and Biological Sampling for the Commercial Fisheries of NJ	\$0	\$188,779	\$191,008	50%
2012	9/1/2012 through 8/31/2013	Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ	\$0	\$192,100	\$240,897	56%
2013	9/1/2013 through 8/31/2014	Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ	\$0	\$192,100	\$240,897	56%
2014	9/1/2014 through 8/31/2015	Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ	\$75,988	\$152,602	\$159,227	41%
2015	9/1/2015 through 8/31/2016	Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ	\$0	\$158,740	\$205,725	56%
2016	9/1/2016 through 8/31/2017	Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ	\$0	\$167,956	\$205,725	55%
Total Amount for all ACCSP Projects			\$833,337	\$1,801,757	\$1,930,094	36%

Proposal Summary for Ranking Criteria

PROPOSAL TYPE: *Maintenance*

PRIMARY PROGRAM PRIORITY:

Catch and Effort: **100 %** of permitted dealers in NJ will be submitting dealer reports through SAFIS eDR, for **100%** of the species they purchase. **100%** of the 21 commercial harvester license types will be submitting trip level catch and effort data, the remaining of harvester licenses are collected through the federal NMFS VTR program.

PROJECT QUALITY FACTORS (Partners, Funding, and Data):

Partners-

Multi-Partner/Regional impact including broad application:

Although this project focuses on the activities of NJ permitted fishermen and dealers, it includes the data collection of species harvested regionally such as lobster, bluefish, summer flounder, black sea bass, scup, tautog, weakfish. Thus the ASMFC will benefit from the dealer and harvester data collected from this project.

Funding-

Transition Plan:

The NJ ACCSP Project in FY2013 included funds that went directly to the NJDFW for salaries and supplies. The NJDFW has proposed a landing license for all state fisheries several times over the years. The efforts have been thwarted by industry lobbyists who are opposed to any license. The NJDFW has been able to create an Atlantic menhaden landing license, the funds of which will be directed towards commercial fisheries research and management for that specific fishery. This specific license is limited entry with very specific qualifying factors to remain in the fishery. Because of this recent development, there are several commercial bases realizing the importance of mandatory reporting. These license funds will provide NJ with a source of revenue further relieving funding away from the ACCSP. These costs were removed in FY2014, and will continue to be covered as NJDFW in-kind match for FY2017.

In-kind Contribution:

The NJDFW is providing 56% of the project cost (see section 8).

Data:

Improvement in data quality/quantity:

The NJDFW has been able to provide commercial harvest landings data to the ACCSP for American lobster, Atlantic menhaden, blue crab, and American eel through annual data feeds. Additionally, the NJDFW will be able to provide all commercial state harvester landings through the Commercial Harvester Trip Report Program. The NJ eDR program continues to be monitored by the NJ ACCSP staff. This type of project and data management has ensured improvements in data quality, quantity and timeliness.

SECONDARY PROGRAM MODULE:

Biological Sampling:

NJDFW is collecting biological characterization data through port sampling and at-sea observer coverage for 10 species, 6 of which are listed in the upper 25% on the ACCSP Biological Priority Matrix.

PROJECT QUALITY FACTORS (Partners, Funding, and Data):**Partners:**

NJDFW is collecting biological characterization data for 10 species of which 7 have regional management through the ASMFC's FMPs including weakfish, Atlantic croaker, American shad, tautog, American lobster, black sea bass, and summer flounder.

- American lobster at-sea observer data coverage includes trips in LCMAs 4 and 5.

- American eel sampling covers water bodies bordered by NY, NJ, PA, and DE.

- Atlantic menhaden samples are used by Seton Hall University to conduct chemical contamination studies through bioassay analysis.

Data:

All biological data collected by the NJDFW/NJ ACCSP staff are available for coast wide stock assessment. NJDFW blue crab harvest trip level catch and effort data are used by the state of Delaware to conduct their stock assessment within the Delaware Bay. NJDFW tautog biological sampling and aging data are used by coast-wide and regional stock assessment committee.

NJDFW at-sea lobster observer data are utilized regionally for stock assessment and recruit abundance. NJDFW weakfish and American eel biological characterization data are used for stock assessment.

Appendix:

Table 1. History of ALL biological samples collected by the NJ ACCSP program. ACCSP FY2017 rankings for each species appear in parentheses after each species name; anything ranked 1-20 is in the upper 25% of the matrix.

Year	Weakfish (24)			American Eel (30)			Atlantic Croaker (48)			American Shad (16)			Atlantic Menhaden (9)		
	Lengths	Otoliths	Otoliths Aged	Lengths	Otoliths	Otoliths Aged	Lengths	Otoliths	Otoliths Aged	Lengths	Otoliths	Otoliths Aged	Lengths	Scales	Scales Aged
2004	71	57	57	0	0	0	0	0	0	0	0	0	0	0	0
2005	148	148	148	0	0	0	0	0	0	0	0	0	0	0	0
2006	379	311	300	457	141	104	364	364	364	0	0	0	310	310	230
2007	566	546	543	237	0	0	340	340	338	7	0	0	630	630	486
2008	457	451	448	547	508	259	608	500	498	36	34	0	760	760	667
2009	254	254	254	478	418	274	960	560	558	28	28	0	430	430	386
2010	650	571	571	399	384	346	750	750	749	42	42	0	560	560	421
2011	313	313	310	289	289	265	274	274	240	0	0	0	530	530	448
2012	202	202	154	140	60	60	660	635	635	0	0	0	890	890	826
2013	216	216	212	175	173	175	0	0	0	162	162	0	570	570	474
2014	108	108	108	197	197	188	27	27	0	81	81	0	890	890	890
2015	36	0	0	256	255	0	170	170	0	130	130	0	1300	1300	0
2016	0	0	0	0	0	0	0	0	0	93	93	0	60	60	0
TOTAL	3400	3177	3105	3175	2425	1671	4153	3620	3382	579	570	0	6930	6930	4828
Year	Tautog (18)			American Lobster		Black Sea Bass (2)			River Herring (8)			Summer Flounder			
	Lengths	Opercles	Opercles Aged	Lengths	Trips Made	Lengths	Otoliths	Otoliths Aged	Lengths	Otoliths	Otoliths Aged	Lengths	Otoliths	Otoliths Aged	
2004	176	176	176	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
2005	208	208	208	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
2006	339	339	339	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
2007	467	313	313	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
2008	983	505	505	6330	11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
2009	902	569	200	6785	14	N/A	N/A	N/A	2009	1850	N/A	N/A	N/A	N/A	
2010	563	486	486	5569	10	91	91	90	378	306	N/A	247	247	231	
2011	363	346	346	8661	14	106	106	106	655	509	N/A	340	340	335	
2012	265	259	259	23690	20	109	109	108	891	889	N/A	393	393	377	
2013	460	431	0	9954	9	142	142	141	226	226	N/A	360	360	350	
2014	772	772	0	13482	13	113	113	113	319	319	N/A	347	344	323	
2015	425	425	0	6352	10	126	120	0	156	156	N/A	360	358	0	
2016	389	389	0	0	0	0	0	0	0	0	0	40	40	0	
TOTAL	6312	5218	2832	80823	101	687	681	558	4634	4255	N/A	2087	2082	1616	

Table 2. History of reported commercial fisheries in New Jersey state waters.

Fishery	Year								
	2008	2009	2010	2011	2012	2013	2014	2015	2016
AMERICAN SHAD	X	X	X	X	X	X	X	X	X
CRAB DREDGE	X	X	X	X	X	X	X	X	X
BAIT NET									X
CRAB POT	X	X	X	X	X	X	X	X	X
LOBSTER, FISH, CONCH POTS									X
DRIFTING GILL NET									X
FYKE NET									X
GILL NET MESH EXEMPTION PERMIT (GNMEP)	X	X	X	X	X	X	X	X	X
HAUL SEINE									X
MENHADEN							X	X	X
MINIATURE FYKES OR POTS	X	X	X	X	X	X	X	X	X
POUND NET									X
SHIRRED NET, PURSE SEINES, OTTER/BEAM TRAWLS									X
SHRIMP TRAWL									X
STAKED AND ANCHORED GILL NET									X
TAUTOG	X	X	X	X	X	X	X	X	X
WIRE POUND NET									X

Table 3. 2016 sampling targets for each of the nine species currently funded through the ACCSP.

2016 NJ ACCSP SAMPLING TARGETS		
Species	Target Lengths	Target Ages
American eel	1750	350
Atlantic croaker	1076	540
Atlantic menhaden	723	723
Weakfish	26	13
Shad	250	250
Summer flounder	500	500
Black sea bass	500	500
River herring	500	500
Tautog	480	480

Figure 1. Historical summary of the NJDFW tautog aging program (1993-2014).

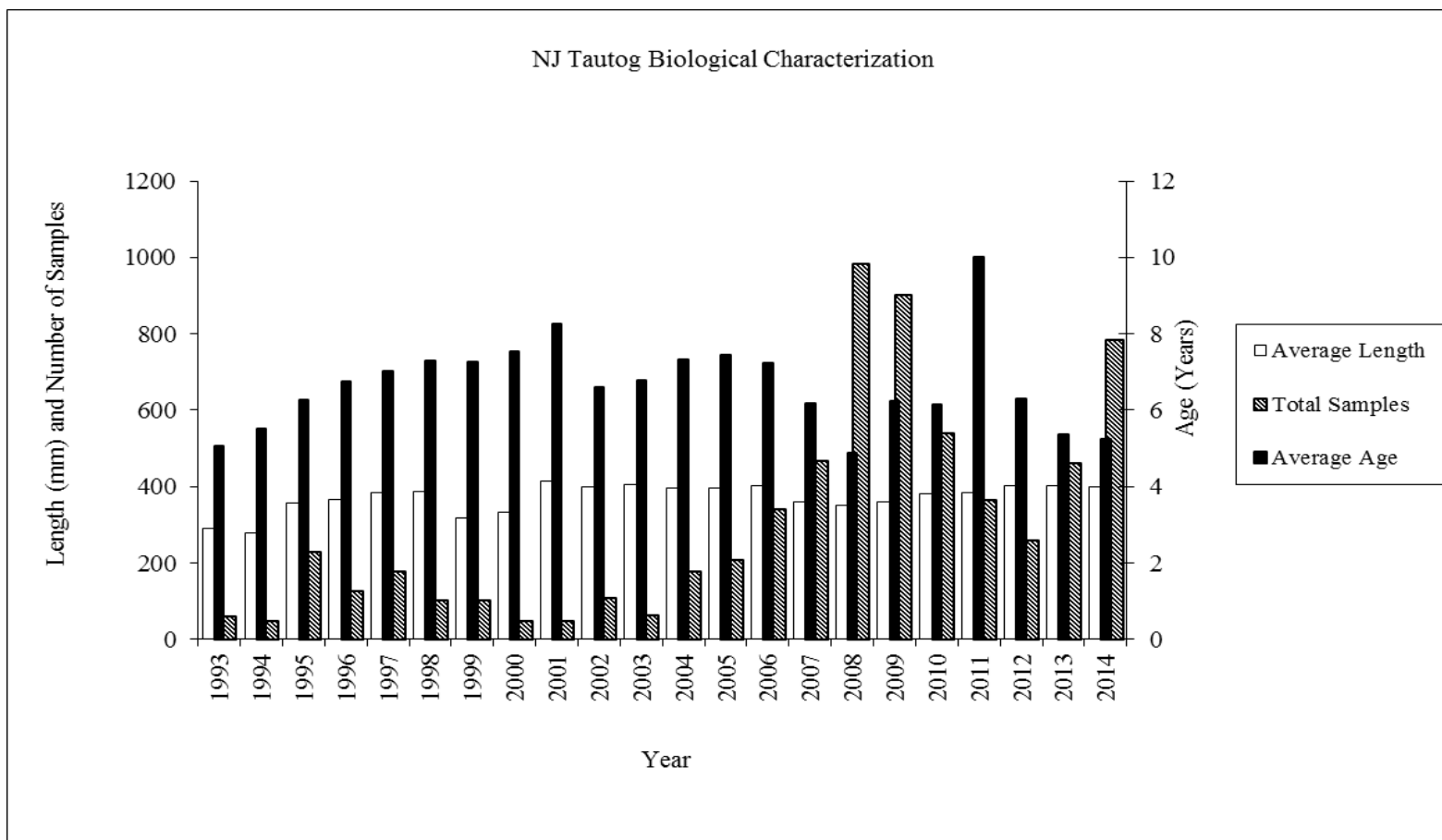


Figure 2. Average length at age for Summer flounder samples collected through the NJ ACCSP Project (2010-2014).

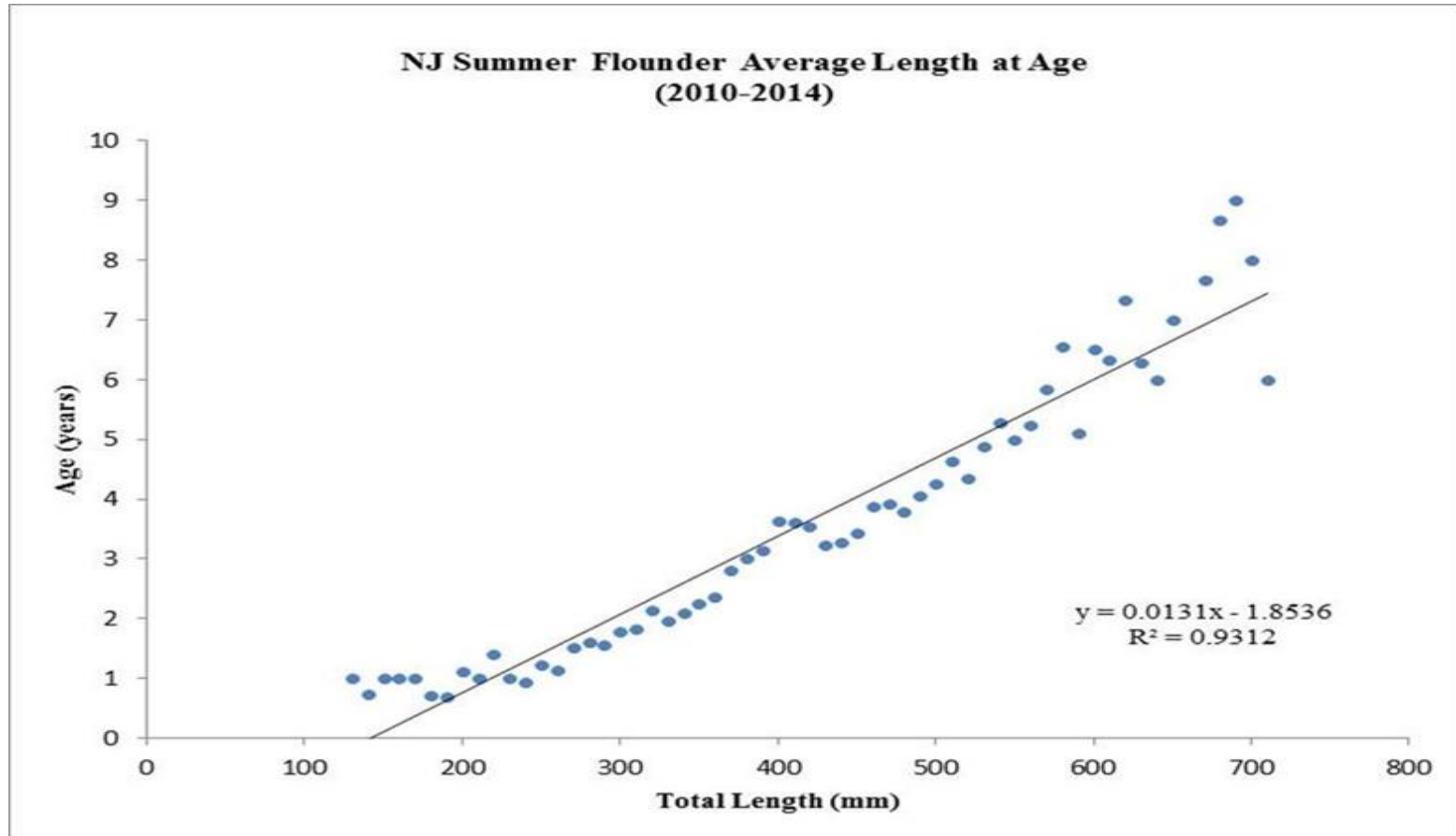


Figure 3. Average length at age for Black sea bass samples collected through the NJ ACCSP Project (2010-2014).

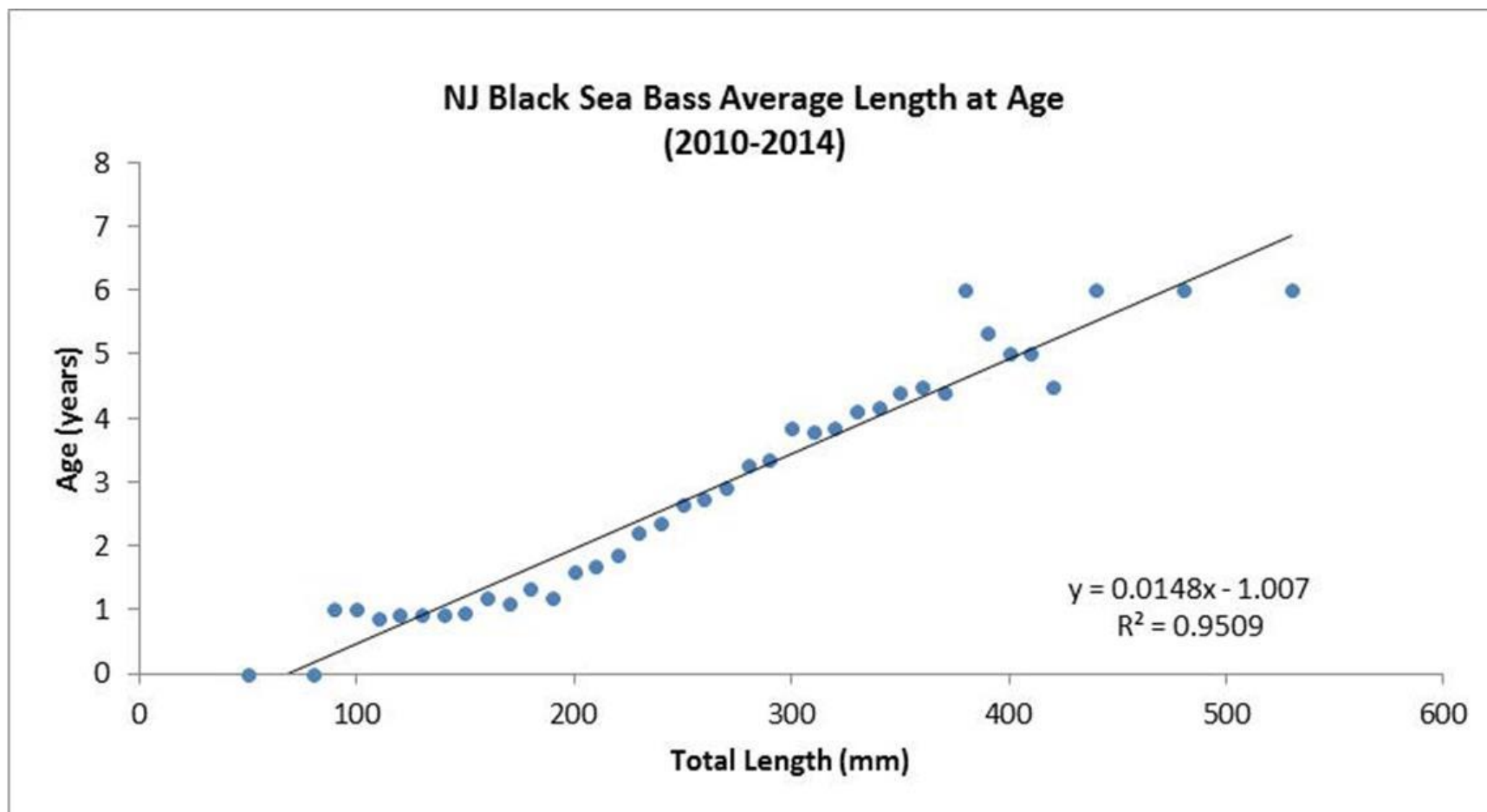


Figure 4. New Jersey Harvester Trip Reporting Form

New Jersey Harvester Trip Report

DID NOT FISH						
Start Date		End Date				
/ /		/ /				
1. Fisherman name		2. Gear ID number		3. State license number		
4. Vessel name			5. Vessel ID		6. Trip type	7. Number of crew
					Commercial	
					RSA/EFP	
8. Date sailed		9. Time sailed		10. Date landed		11. Time landed
/ /				/ /		
COMPLETE A NEW FORM FOR EACH DIFFERENT CHART AREA, GEAR TYPE OR MESH/RING SIZE USED ON A TRIP						
12. Gear code	13. Mesh/ring size		14. Gear quantity	15. Gear size	16. Fishing depth	17. Number of hauls
18. Chart area	19. Latitude		20. Longitude		21. Tow/soak time	
	Degrees Minutes		Degrees Minutes		Hours Minutes	
22. Species	23. Kept	24. Discarded	25. Units	26. Buyer name	27. Date sold	28. Offload city and state
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I certify that the information provided on this form is true, complete and correct to the best of my knowledge, and made in good faith. I understand that if any of the information reported here is willfully false, I am subject to punishment.						
29. Signature					30. Date signed	
Submit completed forms by the 10th of the month following the month of reporting. Submit forms by fax to (609) 748-2032, or by mail to NJ Marine Fisheries Administration, PO Box 418, Port Republic, NJ 08241. Be sure to keep a copy for your own records.						
Form NJTRIP 2016-01						

Figure 5. Summary of New Jersey Commercial Trip Reports by data source from January-April 2016.

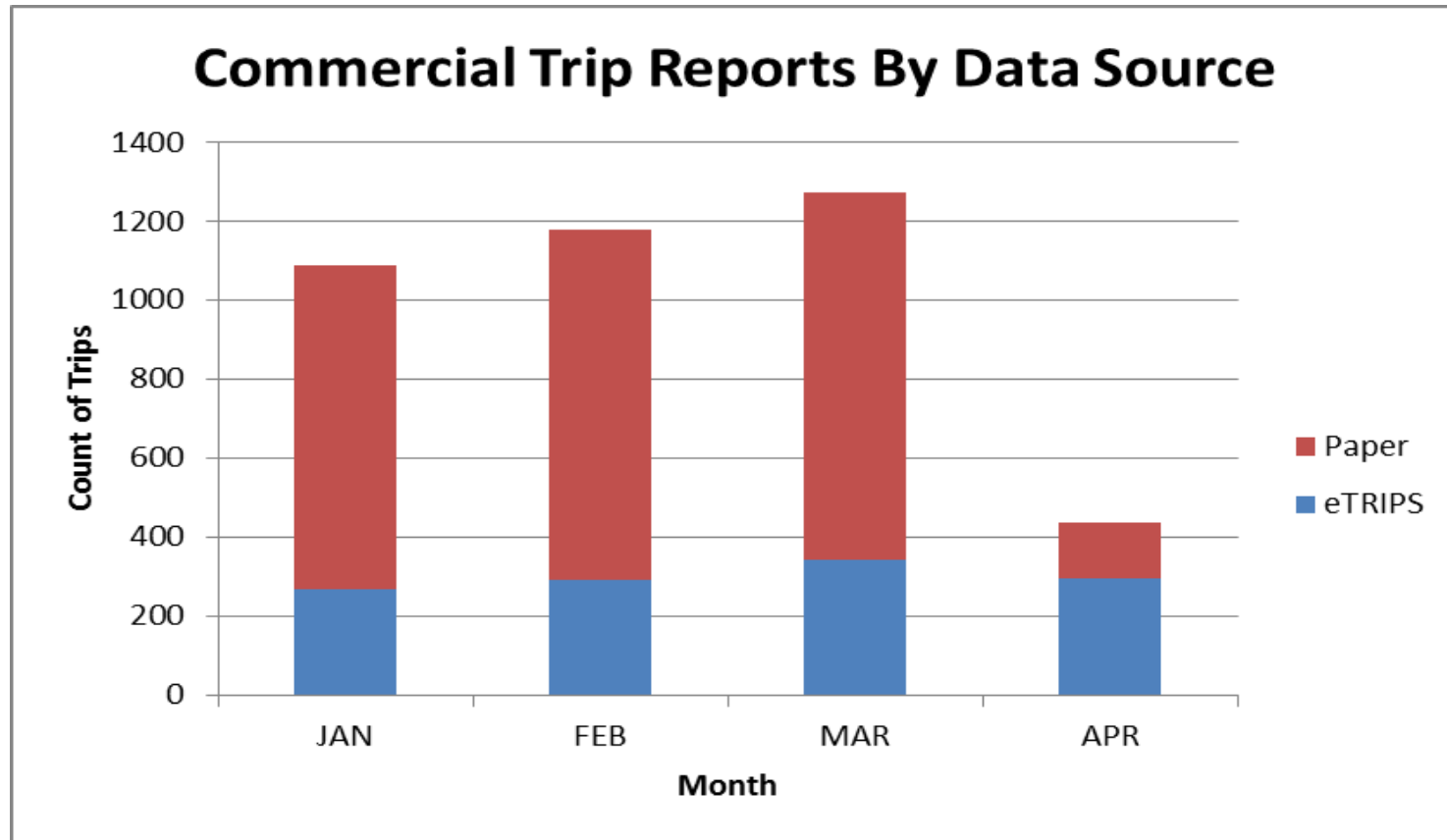
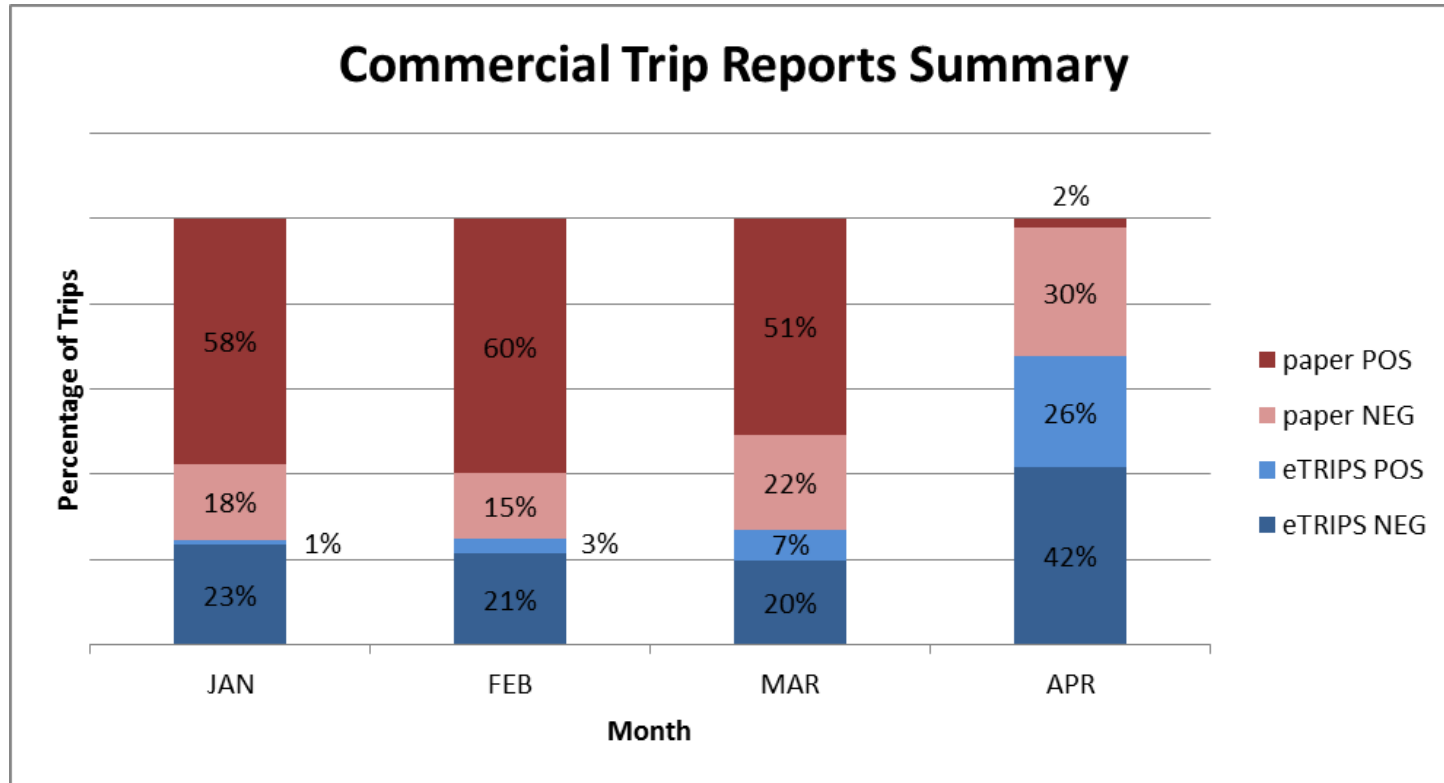


Figure 6. Summary of the New Jersey Commercial Harvester Trip Effort by data source from January-April 2016 (NJ 3).



*The months of January, February, and March included fishery fleets new to harvester trip level reporting requirements. Factors of the shift from paper to eTRIPS reporting could be a shift into fishery fleets who were already submitting reports electronically, as well as an increased interest in electronic reporting methods from these new fleets (NJ 3).

OBJECTIVE

Conservation and management of marine/estuarine fishes through scientific sampling, data collection, and research.

EDUCATION

2006 M.S., University of Massachusetts, Fisheries and Wildlife Conservation, Thesis Title: Winter Recruitment of Age-0 Bluefish, *Pomatomus saltatrix*, into a Northeast Florida Estuary.

1998 B.S., Massachusetts Maritime Academy, Marine Safety and Environmental Protection.

PROFESSIONAL EXPERIENCE

2011-Present Fisheries Biologist, NJ Division of Fish and Wildlife, Bureau of Marine Fisheries, Nacote Creek, NJ.

2005-2011 Fisheries Specialist, Atlantic States Marine Fisheries Commission; NJ Bureau of Marine Fisheries, Nacote Creek, NJ.

2005 Research Technician, New Jersey Department of Environmental Protection, Bureau of Marine Fisheries, Nacote Creek, NJ.

2002-2006 Masters Candidate / Research Assistant, University of Massachusetts, Department of Natural Resources Conservation, Fisheries and Wildlife Conservation, Amherst, Massachusetts.

2000-2002 Research Technician, Rutgers University Marine Field Station, Tuckerton, NJ.

1999-2000 Research Volunteer, National Marine Fisheries Service, James J. Howard Marine Laboratory, Highlands, New Jersey.

Clarke, P.J. and F. Juanes. Winter Recruitment of Age-0 Bluefish, *Pomatomus saltatrix*, in a Northeast Florida Estuary. Marine Ecology Progress Series. Vol. 492: 235–252, 2013.

Able, K.A., P. J. Clarke, and R.C. Chambers. Transitions in the morphological features, habitat use, and diet of young-of-the-year goosefish (*Lophius americanus*). Fishery Bulletin. Volume 105, Number 4, October 2007.

Clarke, P.J. 2001. Materials and Methods for Preparing and Analyzing Otoliths from *Lophius americanus* (Northwestern Atlantic Goosfish). Technical Report. Rutgers University Marine Field Station.

Juanes, F., J. Murt and P. Clarke. 2007. Winter recruitment of YOY bluefish: habitat use, feeding ecology, and energetics. NAFO/ICES/PICES/Symposium, Reproductive and Recruitment Processes of exploited marine fish stocks. Lisbon, Portugal, 1-3 October 2007.

Winter Ecology of Young-of-the-Year Bluefish in a Northeast Florida Estuary. Mid-Atlantic American Fisheries Society. 2006.

Winter Recruitment of Age-0 Bluefish, *Pomatomus saltatrix*, in a Northeast Florida Estuary. 28th Annual Larval Fish Conference. Clemson, South Carolina, USA, 23-26 May 2004.

Winter Recruitment of Young-of-the-Year Bluefish, *Pomatomus saltatrix*, into Northeast Florida Estuaries; aspects of distribution, critical habitat, diet, and condition. 133rd Annual American Fisheries Society Conference. Quebec City, Quebec, Canada, 10-14 August 2003.

Examination of the Early Life History of *Lophius americanus* (Northwest Atlantic Goosfish). New Jersey Academy of Science, Kean University, New Jersey. 2002.

PUBLICATIONS AND PRESENTATION

**FY 2017 Atlantic Coastal Cooperative Statistics Program (ACCSP)
Funding Request Proposal – June 13, 2016
Revised – August 10, 2016**

Applicant: South Carolina Department of Natural Resources (SCDNR)
Marine Resources Division, Charleston, SC

Principal Investigator: Amy Dukes, SCDNR Statistics Section Leader

Project Title: ACCSP Data Reporting from South Carolina’s Commercial Fisheries
1) 100 % Trip-Level Catch and Effort Data Collection (70%)
2) Biological Sampling for Hard Part/Aging of Offshore Species (30%)

Project Type: Maintenance Project: One-year
(No change in scope of work, continued emphasis on Electronic Data Reporting)

Requested Award Amount: **\$161,504** (Excludes 5% NOAA Administrative Fee)

Requested Award Period: One-year, September 1, 2017 thru August 31, 2018, or after receipt of funds

Objectives: The objective of this study is to successfully execute two ACCSP Primary Program Priorities with South Carolina Commercial Fisheries: Catch/Effort Data Collection (70%) and Biological Sampling (30%)

Currently, SCDNR is actively engaged in collecting consistent ACCSP standardized trip-level data for 100% of all marine and diadromous commercial fisheries in South Carolina. The proposed funding would allow SCDNR to maintain compliance with ACCSP data requirements and standards through the continuation of commercial catch and effort data collection, data entry, database management, and administrative support. It will also enable collections of biological samples, including otoliths and length frequencies, from species in the snapper/grouper, pelagic, and coastal migratory complexes landed in South Carolina. These data serve as an integral component of the development, implementation, and maintenance of fisheries management plans for Atlantic Coastal fish stocks.

Needs: It is crucial to assess comprehensive catch/effort data and to collect biological samples in order to effectively and efficiently manage fisheries. Fishery dependent data, provided by commercial fisherman, has a direct impact on fishing management and the sustainability for the industry. The information gathered is used to evaluate the need for potential changes to fisheries regulations and to monitor commercial fishing quotas across the southeast. These data are used to support stock assessment analyses for state and federally managed species, and are responsible for the assessment of finfish stocks to identify fisheries trends and assess management priorities while meeting regulatory requirements under the Magnuson-Stevens Act. Atlantic States Marine Fisheries Commission also needs reliable and detailed data to evaluate the effectiveness of Fisheries Management Plans. SCDNR continues to have discussions with state representatives about requests for available state appropriated funds to accomplish the ACCSP Catch/Effort and Biological Sampling priorities,

however at this time there is no direct long-term state funding available. Several funding proposals have been submitted to the SC Legislature for consideration, unfortunately at this time, the requested funds have not been approved. Efforts will continue to be made to attempt to procure state funding, and it is the goal of the agency to secure state funds in the near future.

Catch and Effort - Since 1976, South Carolina has required mandatory reporting (regulatory authority, Title 50, Section 50-5-380, SC Code of Laws) of monthly totals of commercial landings from licensed wholesale seafood dealers. Since 2003, these data have been provided on a trip-level basis. **Currently, 100% of all commercial fisheries products landed in South Carolina are required to be reported through ACCSP compliant trip-level logbooks.** These data are collected through a one ticket system, meaning that all fishing effort (provided by the harvester at time of sell/purchase), pounds of catch and product values (provided by the purchaser) are obtained and reported by the licensed wholesale seafood dealer and/or bait dealers on logbook forms provided by the agency. These logbooks were designed to be fishery/species-specific to allow detailed and complete catch per unit effort data to be recorded for each fishery type. The logbooks collect the following data fields: product volume (i.e. pounds, bushels), product price, disposition (i.e. gutted, whole) and market category (i.e. small, large), gear type (i.e. trawl, hook and line), area and sub-area fished (i.e. river system, port), commercial fisherman information (name and license), vessel name and registration numbers, number of crew, time fished (gear soak time), and specific information on amount of gear effort (i.e. number of nets/lines/traps, number of hooks per line, number of sets/hauls, line length). The logbooks are bound and are carbon copied, as they serve as business receipts for the harvesters, and dealers can use them as a bill of lading. Examples of three commercial trip-logbooks, Daily Crab, Offshore Finfish, and Bait Dealer are provided below in Appendix 1, 2, and 3. Currently there are 1,741 licensed commercial saltwater fishermen, 68 bait dealers, and 274 wholesale dealers in South Carolina, of which 259 are reporting via paper logbook and 31 federal dealers are using electronic entry. Commercial fishermen, wholesale seafood dealers, and/or bait dealers who fail to make accurate, timely and complete reports are subject to Law Enforcement actions, including fines and possible suspension of licenses.

Electronic data collection has continued to be a major focus in South Carolina, as National Marine Fisheries Service (NMFS) has collected electronic data from federally permitted seafood dealers since 2011 (Southeast Regional Office, SERO) and 2013 (Highly Migratory Species, HMS) in order to track species for quota monitoring. The initial outreach efforts by SCDNR have been restricted solely to federal dealers. Although the concept of electronic data reporting was not well received by the majority of dealers, the 31 federal dealers that are currently using the provided data platforms have adjusted well. A dedicated staff member was hired in October 2015 to focus on electronic data reporting which was initially funded through ACCSP allocations in FY2014. The new commercial outreach coordinator position's goal is to provide outreach, education, and support to federal dealers while initiating efforts to have state-only dealers utilize the electronic infrastructure. The coordinator has made quick work of learning all the aspects of commercial data collections, building relationships with existing federal dealers and partner agency staff, and providing technical support to dealers. Additionally, work has begun with ACCSP staff to revise the existing SAFIS platform, which was developed in 2010, to ensure that the all data parameters are updated. The final step, which will be completed this fiscal year, will be to develop functional outreach tools including a commercial data information website, video tutorials, a frequently asked questions list, etc. for SAFIS users to review, with the intent of creating a seamless transition to electronic data reporting for all dealers while ensuring compliance and data integrity.

The requested funding for this project would allow SCDNR to continue to employ Fisheries Statistics Section (FSS) staff, including a commercial outreach coordinator, data manager, compliance coordinator, and data entry positions, as well as support for printing and postage costs associated with these data collections.

Biological Sampling - SCDNR currently conducts dock-side sampling efforts on commercially landed finfish, collecting biological samples including, but not limited to, otoliths and length frequencies. **ACCSP-compliant**

biological sampling data from the snapper/grouper complex, and coastal migratory and pelagic species are collected through the Southeast Fisheries Science Center (SEFSC) Trip Interview Program (TIP). Through TIP, port agents often collect additional biological data including tissue (DNA), stomach and gonad samples from species over and above the sampling targets, as these species are of interest to SCDNR and are related to project goals under the agency's overall mission to manage and protect South Carolina fisheries. These additional samples will be analyzed in-house under the direction of SCDNR Marine Resources Monitoring, Assessment, and Prediction (MARMAP) program staff, and will increase the amount of available data for future stock assessments. These additional samples will not utilize ACCSP requested funds except to cover the port agents' salaries and travel expenses since these additional samples are taken cohesively.

The requested funding for this project would allow SCDNR to maintain these consistent biological sampling efforts by continuing to employ two port agents with the FSS.

Results and Benefits:

FSS staff and port agents facilitate the partnership between the commercial fishing sector and state/federal management entities to maintain positive working relationships between all parties. SCDNR will work to maintain open and effective lines of communication with all commercial fishermen, bait harvesters, and wholesale dealers **to ensure** that everyone understands the importance of **timely, accurate and complete data submissions** associated with the management of marine fisheries.

Catch and Effort - The trip-level data collected will provide comprehensive and comparable landings data which will be used to evaluate the current effectiveness of fisheries management, develop and set priorities for new Fisheries Management Plans in conjunction with state and federal partners and councils.

Biological Sampling - This level of biological sampling is essential for the evaluation of finfish stocks, and the resulting comprehensive and comparable dataset will be essential to set priorities for and evaluate the effectiveness of current and future fisheries regulations, quotas, and management plans.

Approach:

Catch and Effort Tasks

1. Collection and entry of all commercial fisheries trip-level catch and effort data through a mandatory trip ticket reporting system in accordance with ACCSP protocols and standards.
 - SCDNR will continue to employ two Data Specialists, one Data Administrative Assistant, one Data Manager, one Commercial Outreach Coordinator, and one Section Manager Leader responsible for all commercial catch and effort compliance, data entry, editing, and submission to ACCSP.
 - Individual trip tickets will be required from dealers and tracked for compliance for all commercial fisheries products landed in South Carolina.
 - Non-compliance offenders will be reported to SCDNR Law Enforcement and are subject to action. Statistics staff will assist with prosecution efforts by providing evidence in court.
 - Trip tickets will be reviewed for completeness, edited as necessary, entered and verified.
 - Trip ticket logbooks will periodically undergo a review process in order to identify areas for data collection improvements, and to ensure that dealers understand all data fields.
 - Efforts to QA/QC licensing data will continue as necessary to ensure the cohesion and integrity of FSS databases.

- Data will be converted to ACCSP codes and transmitted to ACCSP in a timely manner, at minimum quarterly.
2. Editing and verifying commercial fisheries trip level catch and effort data through electronic data reporting.
 - Staff will continue to focus efforts on compliance, outreach and education to federal dealers and continue to urge state dealers to utilize the ACCSP's Standard Atlantic Fisheries Information System (SAFIS) or Bluefin platforms to report catch and effort data electronically.
 - FSS staff will verify consistencies and edit as necessary catch and effort data reported between mandatory trip tickets and electronic data submissions.

Biological Sampling Tasks

1. Collection of biological samples from commercially landed species within the Snapper/Grouper, Coastal Migratory and Pelagic fisheries, in compliance with ACCSP Biological Sampling standards.
 - SCDNR will continue to employ one full-time and one part-time port agent to collect age structure (otoliths) and length frequencies from targeted species.
 - Port agents will focus their efforts on intercepting commercial vessel trips at specific wholesale dealers/docks where these species are typically landed.
 - As the catch is unloaded, specimens will be randomly selected (in order to avoid sampling bias), identified to species, length recorded and otoliths collected. Otoliths will be extracted through the gill plate so that the market condition of the fish is not compromised.
 - Species selection does incorporate the ACCSP Biological Review Panel species list and/or Southeast Fisheries Science Center (SEFSC) staff recommendations. Port agents do have the ability to collect biological samples for species of interest to SCDNR.
 - Port agents help to ensure that wholesale seafood dealers are completing the mandatory trip tickets both accurately and in a timely manner.
2. Biological sampling data will be edited, entered and verified in the TIP online database and submitted on a monthly basis.
 - As part of the TIP protocol, in-person interviews will be conducted at the time of the biological sampling to gather necessary catch and effort information from vessel captains.
 - Catch and effort data will be compared and verified with the trip ticket logbook data. All data collected will be entered into the TIP online database following established protocols including QA/QC practices.
 - Age structure samples (otoliths) will be prepared, packed and shipped to be analyzed at the SEFSC Beaufort Marine Laboratory for aging and data processing following TIP protocols.
 - Once processed, these age and length samples are used in stock assessments, primarily for age at length models and/or used to proportion unclassified finfish grouping to individual species (triggerfishes).

Geographic Location:

The project will be headquartered at the SCDNR Marine Resources Division facility in Charleston, South Carolina. Project personnel are responsible for all data collections for marine commercial fisheries from multiple ports along the South Carolina coast.

Milestone Schedule:

Catch and Effort	J	A	S	O	N	D	J	F	M	A	M	J	J	A
Task 1 Collection of trip level commercial catch data and related effort data in accordance with ACCSP standards.	X	X	X	X	X	X	X	X	X	X	X	X		
Task 2 Data entry, editing and verification of fisheries trip level reporting data.	X	X	X	X	X	X	X	X	X	X	X	X	X	
Task 3 Conversion of data to ACCSP codes and data transmission to ACCSP in a timely manner.	X	X	X	X	X	X	X	X	X	X	X	X	X	
Task 4 Report writing period.											X	X	X	X
Biological Sampling	J	A	S	O	N	D	J	F	M	A	M	J	J	A
Task 1 Collection and preparation of data on length frequencies and hard-part samples for commercially landed Snapper/Grouper, Pelagic, and Coastal Migratory species.	X	X	X	X	X	X	X	X	X	X	X	X		
Task 2 Preparation and shipment of hard-part samples to Beaufort Marine Lab in North Carolina for processing and aging.	X	X	X	X	X	X	X	X	X	X	X	X		
Task 3 Data editing (coding), verification and entry into the TIP online database.	X	X	X	X	X	X	X	X	X	X	X	X	X	
Task 4 Report writing period.											X	X	X	X

Project Accomplishments Measurement:

Catch and Effort - SCDNR will continue to meet a data dissemination goal, which will deliver South Carolina landings data to ACCSP no more than 90 days after the end of each quarter (every three months).

Biological Sampling - SCDNR will continue to achieve set TIP sampling targets yearly, with data entry into the TIP online database and delivery of collected samples monthly.

Program Priorities/ Project Component	Goal	Measurement
Catch and Effort	Collection of 100% of all SC commercial fishery products landed at trip-level in accordance with ACCSP standards.	Data entered, verified and delivered to the ACCSP no more than 90 days after the landing date.
Catch and Effort	Continuation of Electronic Data Reporting by Federally Permitted Dealers and advocate the initiation for state-only dealers.	Dealers reporting on a weekly basis, completely and accurately. NMFS SERO/HMS to enforce and regulate.
Biological Sampling	Collection of all species targeted and identified by the ACCSP Biological Committee and TIP as data deficient.	Number of samples collected by representing number of species.
Biological Sampling	Validate, enter, and edit all biological data into TIP on-line and provide samples to Beaufort Lab.	Timeliness and accuracy of data/samples provided.

Cost Summary:

1. BUDGET FOR PROPOSAL PLANNING - FY2017

	ACCSP Operational Costs Request		SCDNR In-Kind Contributions	
	Monthly Time	Salary Funds	Monthly Time	Salary Funds
Personnel Expenses: All current staff, no new hires.				
Statistics Leader (Catch & Effort, & Biological - AWD)	0	\$0	9	\$35,742
Database Manager (Catch & Effort - EH)	3	\$11,589	3	\$11,589
Biologist I (Commercial Outreach - JD)	6	\$15,367	2	\$5,122
Data Administrator (Catch & Effort - VG)	4	\$12,653	4	\$12,653
Data Coordinator I (Catch & Effort - SM)	4	\$8,930	4	\$8,930
Data Coordinator II (Catch & Effort - CB)	5	\$12,496	5	\$12,496
Biologist I (Biological - DP)	7	\$20,768	4	\$11,868
Biologist I (Biological - EM)	6	\$17,801	5	\$14,834
Total Salary Costs		\$99,604		\$113,234
Fringe Costs (40%)		\$39,842		\$45,294
Indirect Costs (15.62%)		\$15,558		\$17,687
Total Personnel Expenses		\$155,004		\$176,215
Miscellaneous Expenses				
Printing & binding (forms, surveys, tickets) SCDNR currently has 9 logbook forms necessary to collect 100% mandatory trip level data. Printing of the logbooks is based on size and quantity ordered. The average price per book last FY was \$7.54. Typical usage of these logbooks varies from year to year. During the last fiscal year, # 360 logbooks were distributed to dealers, with a replacement coast estimated at \$2,715.		\$2,000		\$1,000
Postage (incoming, business reply mail) The yearly fee to hold a USPS Business Reply account is \$965.00. SCDNR paid an additional \$1,454 in returned mail during the 2016 FY. Providing free return mail is an incentive for accurate and timely reporting from dealers, and has proven to be very successful.		\$1,000		\$1,500
Postage (outgoing, forms, notices) This amount reflects the average amount typically spent to send mail to dealers. Monthly reminder letters are sent to delinquent dealers, and upon request, user manuals, logbook, and additional forms are sent out to dealers.		\$500		\$1,500
Office and Sampling Supplies General supplies including envelopes (letter and large mailers), pens, printing paper, three-ring binders (for user manuals), and file organizational materials, clip boards, fin-clip vials, file knives.		\$1,000		\$1,000
Travel Port Agents will travel to dealers to intercept commercial fishing vessels to collect Biological samples. Current rates for SCDNR vehicles are 50.5 cents per mile. Round trip daily trips can average as high 200 miles.		\$2,000		\$8,000
Total Miscellaneous Expenses		\$6,500		\$13,000
Total Costs		\$161,504		\$189,215
Total Project Cost		\$350,719		
Percentage Contribution		46%		54%

2. BUDGET – FY16 – Approved By ACCSP (Budget later reduced to \$161,655)

	ACCSP Operational Costs Request		SCDNR In-Kind Contributions	
	Monthly Time	Salary Funds	Monthly Time	Salary Funds
Personnel Expenses: All current staff, no new hires.				
Statistics Leader (Catch & Effort, & Biological - AWD)	0	\$0	9	\$34,364
Database Manager (Catch & Effort - EH)	3	\$11,142	6	\$22,284
Biologist I (Electronic Outreach - NP)	6	\$15,217	3	\$7,609
Data Administrator (Catch & Effort - VG)	4	\$12,165	4	\$12,165
Data Coordinator I (Catch & Effort - SM)	4	\$8,417	4	\$8,417
Data Coordinator II (Catch & Effort - CB)	6	\$14,417	5	\$12,014
Biologist I (Biological - DP)	7	\$19,968	4	\$11,410
Biologist I (Biological - EM)	6	\$17,115	5	\$14,263
Total Salary Costs		\$98,442		\$122,526
Fringe Costs (38%)		\$37,408		\$46,560
Indirect Costs (21.35%)		\$21,017		\$26,159
Total Personnel Expenses		\$156,867		\$195,245
Miscellaneous Expenses				
Printing & binding (forms, surveys, tickets) SCDNR currently has 8, soon to be 9 logbook forms necessary to collect 100% mandatory trip level data. Printing of the logbooks based on size and quantity ordered. Average price per book: \$8.17. Typical usage of these logbooks varies from year to year. During the last fiscal year, # 369 logbooks were distributed to dealers, with a replacement coast estimated at \$3,014.73		\$2,500		\$1,000
Postage (incoming, business reply mail) The yearly fee to hold a USPS Business Reply is \$905.00. SCDNR paid an additional \$2,425.54 in returned mail during the 2014 fiscal year, which primarily includes dealer reports. Providing free return mail is an incentive for accurate and timely reporting from dealers. It has proven to be very successful.		\$500		\$1,000
Postage (outgoing, forms, notices) This amount reflects the average amount typically spent to send mail to dealers. Monthly reminder letters are sent to delinquent dealers, and upon request, user manuals, logbook, and additional forms are sent out to dealers.		\$500		\$1,000
Office and Sampling Supplies General supplies including envelopes (letter and large mailers), pens, printing paper, three-ring binders (for user manuals), and file organizational materials, clip boards, fin-clip vials, filet knives.		\$1,500		\$1,500
Uniforms / clothing (hats, shirts, etc.) Staff often interact with the public and must represent SCDNR. Polo shirts (\$24.00) and Oxford shirts (29.55) are available for purchase with the DNR embroidered logo.		\$500		\$500
Travel Port Agents will travel to dealers to intercept commercial fishing vessels to collect Biological samples. Current rates for SCDNR vehicles are 50.5 cents per mile. Round trip daily trips can average as high 200 miles.		\$2,000		\$8,000
Total Miscellaneous Expenses		\$7,500		13,000
Total Costs		\$164,367		\$208,245
Total Project Cost				\$372,612
Percentage Contribution		44%		56%

BUDGET NARRATIVE
(Proposed Funding Period, FY17)

Project: ACCSP Data Reporting from South Carolina's Commercial Fisheries
1) 100 % Trip-Level Catch and Effort Data Collection
2) Biological Sampling for Hard Part/Aging of Offshore Species

FFO#: TBD

Project Period: 1 September 2017 – 31 August 2018

1 Year Funding: \$161, 504

Prepared by: Amy Dukes (PI)

Personnel (Salaries) \$99,604: Seven SCDNR employees' salary time will be utilized with these funds. The seven current employees are: Database Manager, for 3 months (\$11,589); Commercial Outreach Coordinator, for 6 months (\$15,367); Wildlife Biologist I (Port Agent) for 7 months (\$20,768); Wildlife Biologist I (Port Agent) for 6 months (\$17,801); a Data Administrator for 4 months (\$12,653); and 2 Data Coordinators, one for 5 months (\$12,496) and one for 4 months (\$8,930).

Fringe Benefits \$39,842: The current SCDNR fringe benefit cost is set at 40% for salary employees. These rates are within the maximum range set forth by NOAA.

Contractual: \$3,500.00: The contractual budgeted funds will be used to cover expenses to the grant associated with monthly cell phone charges, printing, copying, and freight charges. A primary function of this project will entail the printing of carbon copied logbooks that will be distributed to licensed individuals to collect data. During last fiscal year, 360 logbooks were distributed to dealers, with an average price of \$7.54 per book.

Supplies and Materials \$1,000: General office supplies including envelopes (letter and large mailers), pens, printing paper, three-ring binders (for user manuals), and file organizational materials will be purchased with these funds. In addition, postage paid envelopes are distributed through a business reply account with the US Postal Service. These funds will cover the yearly accounting fees and postage, both to and from licensed individuals.

Travel \$2,000.00: Vehicle mileage is to be covered under this category. Staff will travel to seafood docks to collect catch and biological data. The current SCDNR travel rate is 50.5 cents per mile.

Indirect Charges \$15,558: The current SCDNR indirect cost is set at 15.62% which is only applied toward salaries and wages.

Totals: \$161,504.00

BUDGET NARRATIVE
(Current Funding Period, FY16)

Project: ACCSP Data Reporting from South Carolina's Commercial Fisheries
3) 100 % Trip-Level Catch and Effort Data Collection
4) Biological Sampling for Hard Part/Aging of Offshore Species
FFO#: NOAA-NMFS-SE-2013-2003488
Project Period: 1 September 2016 – 31 August 2017
1 Year Funding: \$161, 655 (Reduced amount, original approved amount was \$164,367)
Prepared by: Amy Dukes (PI)

Personnel (Salaries) \$102,100: Seven SCDNR employees' salary time will be utilized with these funds. The seven current employees are: Database Manager, for 3 months (\$11,589); Commercial Outreach Coordinator, for 6 months (\$15,366); Wildlife Biologist I (Port Agent) for 7 months (\$20,769); Wildlife Biologist I (Port Agent) for 6 months (\$17,802); a Data Administrator for 4 months (\$12,652); and 2 Data Coordinators, one for 6 months (\$14,944) and one for 4 months (\$8,928).

Fringe Benefits \$38,798: The current SCDNR fringe benefit cost is set at 38% for salary employees. These rates are within the maximum range set forth by NOAA.

Contractual: \$3,500.00: The contractual budgeted funds will be used to cover expenses to the grant associated with monthly cell phone charges, printing, copying, and freight charges. A primary function of this project will entail the printing of carbon copied logbooks that will be distributed to licensed individuals to collect data. During an average fiscal year, 550 logbooks are distributed to dealers, with an average price of \$15.00 each.

Supplies and Materials \$3,046.00: General office supplies including envelopes (letter and large mailers), pens, printing paper, three-ring binders (for user manuals), and file organizational materials will be purchased with these funds. In addition, postage paid envelopes are distributed through a business reply account with the US Postal Service. These funds will cover the yearly accounting fees and postage, both to and from licensed individuals.

Travel \$2,000.00: Vehicle mileage is to be covered under this category. Staff will travel to seafood docks to collect catch and biological data. The current SCDNR travel rate is 50.5 cents per mile.

Indirect Charges \$12,211.00: The current SCDNR indirect cost is set at 11.96% which is only applied toward salaries and wages.

Totals: \$161,655.00

Maintenance Projects History for Primary Program Priorities: Catch and Effort (white), Biological Sampling (grey) – Beginning in 2011, the funded proposal included both Primary Program Priorities.

Funding Year	Amount	Time Period	Results/Comments
2001	\$132,228	1 June 2001 – 31 May 2002 (extended thru 31 May 2003)	Implementation of ACCSP Commercial Module
2003	\$94,760	1 June 2003 – 31 May 2004 (extended thru 30 April 2006)	Continuation of ACCSP Commercial Module
2004	\$39,532	1 June 2004 – 31 May 2005	Biological Sampling. Grant money was awarded in August 2004. State hiring freeze in effect. One year no-cost extension awarded in May 2005.
2005 and 2006		1 June 2005 – 31 May 2006 (extended thru 30 November 2006)	Biological Sampling. State hiring freeze still in effect, lifted in Sept. 2005. Port sampler hired Oct. 2005. Award period extended to Nov. 2006.
2006	\$60,990	1 May 2006 – 30 April 2007 (extended thru 30 April 2008)	Continuation of ACCSP Commercial Module
2007	\$34,958	1 May 2007 – 30 April 2008	Biological Sampling. Grant money was awarded in August 2007.
2008	\$42,261	1 May 2008 – 30 April 2009	Biological Sampling.
2009	\$0	1 May 2009 – 30 April 2010	Biological Sampling. No proposal submitted, approved for a 6-month no cost extension
2009	\$0	1 May 2009 – 30 April 2010	Continuation of ACCSP Commercial Module. No proposal submitted, approved for a 6-month no cost extension to spend remainder of funds
2010	\$92,098	1 July 2010 – 30 June 30 2011	Catch and Effort data collection from the Commercial Module
2010	\$54,091	1 July 2010 – 30 June 2011	Biological Sampling.
2011	\$191,807	1 July 2011 – 30 June 2012	Catch and Effort data collection from the Commercial Module and Biological Sampling efforts.
2012	\$186,558	1 July 2012 – 30 June 2013	Catch and Effort data collection from the Commercial Module and Biological Sampling efforts.
2013	\$163,627 * Post budget cut	1 July 2013 – 30 June 2014	Catch and Effort data collection from the Commercial Module and Biological Sampling efforts.
2014	\$175,716	1 July 2014 – 30 June 2015	Catch and Effort data collection from the Commercial Module and Biological Sampling efforts.
2015	\$165,824	1 July 2015 – 30 June 2016	Catch and Effort data collection from the Commercial Module and Biological Sampling efforts.

ACCSP - Ranking Criteria Summary

Proposal Type – Maintenance, no change in scope of work

Primary Program Priority – This proposal contains two Primary Program Priorities that fit the current ACCSP Program Design.

- Catch and Effort (70%) – SCDNR collects data from 100% of all commercial fisheries products landed in this state on a trip-level basis, following standardized data elements and code formats required by ACCSP. The state adopted one ticket system requires each licensed Wholesale Seafood Dealer and Bait Harvester to collect and provide all effort information from the licensed commercial fisherman, the volume of product landed, and the product value. **Increased efforts to improve and further promote electric data reporting.** Metadata is not collected.
- Biological Sampling (30%) (**to be considered during the Project Quality Factors**) – SCDNR collects biological samples, including length measurements and otolith collections, from many species within the snapper/grouper complex, coastal migratory and pelagic species. Nine of the species sampled fall within the upper quartile of the ACCSP Biological Sampling Priority Matrix.

Project Quality Factors –

- Partners – Although this proposal does not have a multi-state partnership, it does have a regional impact. The South Atlantic Fisheries Management Council makes recommendations to NMFS based regionally collected fisheries data collection, both independent and dependent data. The Catch and Effort data and Biological Sampling data provided to ACCSP impacts these regional recommendations.
- Funding Transition – SCDNR continues to have discussions with state representatives about requests for available state appropriated funds to accomplish the ACCSP Catch/Effort and Biological Sampling priorities, however at this time there is no direct long-term state funding available. Several funding proposals have been submitted to the SC Legislature for consideration, unfortunately at this time, the requested funds have not been approved. Efforts will continue to be made to attempt to procure state funding, and it is the goal of the agency to secure state funds in the near future. Without funding, there is the potential for loss of staff and positive data collections. Funding has slightly decreased over the past fiscal years.
- In-kind Contribution - The agency does utilize other funding sources to offset the non-existent state funds, which represents the 54% in-kind contributions.
- Data Improvement – Through the initiation of electronic data collection, primarily from dealers that handle offshore fisheries products, SCDNR will be improving the timeliness of data. QA/QC checks of the data prior to quarterly submission will continue in order to ensure accurate and complete data.
- Secondary Program Priority – Biological Sampling (see above).
- Impact on Stock Assessments – The Catch and Effort data collected and provided to the ACCSP Data Warehouse is suitable to be provided for future stock assessments. In addition, the finfish lengths measured and otoliths collected through Biological Sampling efforts are also provided for stock assessments.

Other Factors –

- Properly Prepared – This proposal follows the guidelines under the ACCSP Funding Decision Process Document.

Appendix 1. Example of the logbooks used by SCDNR, Daily Crab Trip Ticket.

SOUTH CAROLINA TRIP TICKET (DAILY CRAB POT)

2-

DEALER NAME:	CRABBY JOE INC.		
DEALER NUMBER:	570345678		
FISHERMAN NAME:	MARY JOE CRABBE	TRAP ID #	T0001
FISHERMAN ID # or CUSTOMER ID #:	11CEM55090		
NO. OF CREW: (INCLUDE CAPT):	1	VESSEL NUMBER:	SC475DH
TRIP START DATE:	07 / 01 / 15 <small>MO. DAY YR.</small>	UNLOADING DATE:	07 / 01 / 15 <small>MO. DAY YR.</small>
NUMBER OF TRAPS PULLED:	50	SOAK TIME (HOURS):	24

CIRCLE WATERBODY WHERE MOST OF CATCH WAS MADE

020	Ashley River	300	ICWW: Prices Inlet-Sullivans	420	South Edisto
030	Broad River	310	Little River	430	St. Helena Sound
050	Bulls Bay	330	May River	490	Stono River
070	Calibogue Sound	370	Murrells Inlet	510	Waccamaw River
110	Charleston Harbor	130	North Edisto	530	Wando River
090	Combahee River	410	Port Royal Sound	550	Winyah Bay
100	Cooper River	450	Santee River	241	Atlantic Ocean
290	Folly River	470	Savannah River		

SPECIES	CODE	VOLUME	UNITS (circle one)	UNIT PRICE	TOTAL
#1 (Lg. Males)	7001	4.2	BU LBS DZ	70.00	294.00
#2 (Lg. Females / Sm. Males)	7002	35	BU LBS DZ	1.50	52.50
#3 (Sm. Females)	7003	6	BU LBS DZ	50.00	300.00
MIXED #2 & #3	7004		BU LBS DZ		
JUMBO	7005		BU LBS DZ		
UNGRADED	7000		BU LBS DZ		
PEELERS	7028		EA DZ		
STONE CRAB CLAWS	7180	1	LBS	2.00	2.00
WHELKS	7750		BU LBS		
FLOUNDER	1209		LBS		
CATFISH	0660		LBS		
(List Species)					
				Bait 2 flats	-20.00
				Total	628.50

Dealer/Fisherman Use

SC Dept. of Natural Resources, Fisheries Statistics Section, PO Box 12559, Charleston SC 29422-2559 (843) 953-0313 FAX (843) 953-9362

WHITE SCDNR

YELLOW DEALER

PINK FISHERMAN

Appendix 2. Example of the logbooks used by SCDNR, Offshore Finfish Trip Ticket.

5- **XXXXX**

DEALER NAME: FISH R US		DEALER NUMBER: 570123456	
FISHERMAN NAME: JOHN WANNAFISH		FISHERMAN ID # OR CUSTOMER ID #: 11WHJ55090	
NO. OF CREW (INCLUDE CAPT): 4	VESSEL NAME: WANNA FISH	VESSEL NUMBER: 676543	
TRIP START DATE: MM/DD/YYYY 07 / 01 / 2014		UNLOADING DATE: MM/DD/YYYY 07 / 06 / 2014	

CIRCLE ALL GEARS CODES USED AND FILL IN INFO.

	# CP LINES	# CP HOOKS PER LINE	TOTAL LBS FISHED	673 676	SURFACE LONGLINE / BOTTOM LONGLINE	345	TRAPS	943	DIVE
611 BCD & REEL (manual)				# CP SETS		# TRAPS USED		# DIVERS	
613 BANDIT REEL	4	3	52	# CP HOOKS PER SET		# HOURS		HOURS	
616 ELECTRAMATE				LENGTH (MILES)		TOTAL SOAK TIME (HRS)		# CP SPIKERS	
660 TROLL	1	1	4	TOTAL SOAK TIME (HRS)		# CP DIVES		# CP DIVES	
665 MACKEREL TROLL				DAYS FISHED		GREEN STICK			
400 GILL NET	LENGTH (YRD)		TOTAL SOAK TIME (HRS)	HOURS FISHED		657			
						LINE LENGTH (FT)	# CP HOOKS	HRS FISHED	

CIRCLE AREA WHERE MOST OF CATCH WAS MADE

3378 <- 60 MILES OFF G'DOWN TO CAPE HEAR (50000's)	3377 >- 60 MILES, TRYING PAN SIGNALS (50400's - 50000's)	3477 <- 60 MILES OFF SOUTHPORT - MOREHEAD CITY	3270 <- 60 MILES OFF CHARLESTON (50400's - 60000's)	3276 >- 60 MILES OFF CHARLESTON - CHAS. BUMP	3178 BLAKE PLATONAU
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Code	KIND	SIZE	DP	GEAR	LBS	BOAT PRICE	TOTAL	Code	KIND	SIZE	DP	GEAR	LBS	BOAT PRICE	TOTAL	
1423	Gag Grouper		U	GP	613	975	2.90	2827.50	4473	Golden Tilefish	S	S	GP			
1424	Scamp		U	GP	613	295	2.90	855.50	4475		M	M	GP			
1416	Rod Grouper		U	GP	613	26	2.35	61.10	4471		L	L	GP			
1412	Rock Hind Strawberry		U	GP	613	34	2.85	96.90	4470	Ungraded	U	GP				
1414	Snowy Grouper	S	S	GP	613	150	2.55	382.50	0570	Cobia	U	GP				
1414		M	M	GP	613	321	2.65	850.65	1050	Dolphin	U	GP	660	80	2.30	184
1414		L	L	GP					4710	Wahoo	U	GP				
1414	Ungraded	U	GP						1940	King Mackerel	U	GP				
1415	Yellowedge Grouper	U	GP						0180	Baracuda	U	GP				
1422	Black Grouper	U	GP						1807	African Pompano	U	GP				
1425	Yellowmouth	U	GP						2420	Roofish	U	RP				
1426	Yellowfin Grouper	U	GP						1142	Hil	U	RP				
	Other Grouper	U	GP						1550	Hake	U	RP				
3777	B-line	34-1	S	GP					4321	Swordfish	100+	J	CP			
3776		1-2	M	GP					4322		50-99	L	CP			
3775		2-4+	L	GP					4323		26-49	M	CP			
3765	Ungraded	U	GP						4327	Chunks	U	CP				
3302	Rod Porgy (Pinks)	U	GP						4320	Ungraded	U	CP				
3364	Rod Snapper	U	GP		613	38	2.90	110.20	5131	Wreckfish	U					
3363	Mutton Snapper	U	GP						0193	Barrelfish	U					
3367	Yellowtail Snapper	U	GP						4655	Yellowfin Tuna	U	HG	660	42	2.90	121.80
	Other Snapper	U	GP						4658	Blackfin Tuna	S	HG				
1790	Hogfish	U	GP		613	7	2.55	17.85	4656	Tuna, unclassified	M	HG				
3355	Black Seabass	S	S	RP					3505	Shortfin Mako Shark	L					
3353		M	M	RP					3495	Blacktip Shark	U					
3351		L	L	RP					3503	Spiry Dogfish	U					
3351		XI	XI	RP					3518	A. Sharpnose	U					
3360	Ungraded	U	RP						3511	Smooth Dogfish	U					
3308	Knobbed Porgy (Gob)	U	RP						3485	Blacknose	U					
1441	White Grouper	U	RP						3481	Finetooth	U					
4560	Triggerfish	U	RP						3475	Shark Fin	U					
5260	Mixed Fish	U	RP							Other Shark	U					
1810	Albacore Jack	U	GP							Albacore			660	220	40	88.00
1812	Greater Amberjack	U	GP													TOTAL
1817	Banded Rudderfish	U	GP													
4474	Grey Tilefish	U	GP													

Dealer/Fisherman Use

SCDNR COPY SC Department of Natural Resources, Fisheries Statistics, P.O. Box 12559, Charleston SC 29422-2559 (843) 953-9313 FAX (843) 953-9362 Revised 1/2012 Pn-04612-7013

Appendix 3. Example of the logbooks used by SCDNR, Bait Dealer Trip Ticket.

0000001

SOUTH CAROLINA BAIT TICKET				0000001	
FISHERMAN NAME:		Lady Fishalot		FISHERMAN ID# Or CUSTOMER ID #:	
NO. OF CREW (INCLUDE CAPT):		2		VESSEL NAME:	
VESSEL NUMBER:		999999		Sea Robin	
TRIP START DATE:			UNLOAD DATE:		
06 / 04 / 16			06 / 04 / 16		

CIRCLE GEAR USED AND FILL IN INFORMATION

810	HANDLINES (ROD & REEL)	345	TRAPS	020	HAUL SEINE
# OF LINES		# TRAPS USED		30	
# OF HOOKS PER LINE		# HAULS		1	
TOTAL HOURS FISHED		TOTAL SOAK TIME (HRS)		48	

		TOTAL LENGTH OF NET(S)	TOTAL SOAK TIME (HRS)	955	BY HAND	676	BOTTOM LONGLINE
				760	GIG	683	FISH TROTLINE
982	HAND CAPTURE			735	CAST NET	680	CRAB TROTLINE
703	DIP NET	FEET		HOURS ACTIVELY FISHING		# OF SETS	
425	SET SHAD NET	FEET				# OF HOOKS PER SET	
465	DRIFT SHAD NET	FEET				TOTAL SOAK TIME (HRS)	
401	HERRING GILL NET	FEET				LENGTH (FEET) -FISH GEAR ONLY	
400	GILL NET	FEET					

CIRCLE WATERBODY WHERE MOST OF CATCH WAS MADE

241	Atlantic Ocean	290	Folly River	470	Savannah River
020	Ashley River	300	IC/WV - Princes Inlet - Sullivan	420	South Edisto
010	Black River	310	Little River	430	St. Helena Sound
030	Broad River	330	May River	490	Stono River
050	Bulls Bay	370	Murrells Inlet	510	Waccamaw River
070	Calibogue Sound	130	North Edisto	530	Wando River
110	Charleston Harbor	390	Pee Dee River	550	Winya Bay
090	Combahee River	410	Port Royal Sound		
100	Cooper River	450	Santee River		

CODE	SPECIES	VOLUME	UNITS (CIRCLE ONE)	UNIT PRICE	TOTAL	FISHERMAN USE
7000	Blue Crab		BU LBS OZ			
7190	Fiddler Crab		BU LBS OZ			
7750	Whelks		BU			
7811	Mussels		BU			
7472	Clams		BU			
7890	Oysters		BU			
7899	Periwinkles		LBS			
8145	Jellyfish		LBS			
1970	Whiting		LBS EA			
4060	Spot		LBS EA			
0925	Atlantic Croaker		LBS EA			
2670	Pinfish		LBS EA			
3112	Silver Perch		LBS EA			
2341	Mullet		LBS EA			
5840	Spanish Mackerel		LBS EA			
2370	Mud Minnows	17	LBS EA	6.00	102.00	
1141	Eel		LBS EA			
2210	Menhaden		LBS EA			
3470	Threadfin Shad		LBS EA			
3474	American Shad		LBS EA			
1340	Gizzard Shad		LBS EA			
1730	Hickory Shad		LBS EA			
1689	Herring		LBS EA OZ BU			
0660	Catfish		LBS			
7301	Shrimp		LBS			

SC Department of Natural Resources, Fisheries Statistics Section, P.O. Box 12559, Charleston, SC 29422-2559 (843) 953-9313 FAX (843) 953-9362 14 10295

Curriculum Vitae

Name: Amy Whitaker Dukes **Professional Address:**
217 Fort Johnson Road
Charleston, SC 29412-9641

Position: Fisheries Biologist III
 Office of Fisheries Management
 Fisheries Statistics Section

Phone: (843) 953-9365 Voice **E-mail:** DukesA@dnr.sc.gov
 (843) 953-9386 Fax

EDUCATION:

Spartanburg Methodist College (SMC), Spartanburg SC Associate in Science, Biology August 1994 to May 1996	Coastal Carolina University (CCU), Conway, SC Bachelor of Science, Marine Science August 1996 to May 1999
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CAREER-RELATED EXPERIENCE:

Jan. 2008 Department of Natural Resources, Charleston, SC
 To present Marine Resources Division in the Office of Fisheries Management:
 Serves as the Fisheries Management Section Leader, participating in data collection, management, and administration activities associated with the Fisheries Statistics Section

Supervises, coordinates, and oversees daily operations in the collection of both commercial (Trip ticket Program, Trip Interview Program) and recreational (For-hire logbook, MRIP, special projects/programs) fisheries dependent catch/effort data collections and biological sampling efforts; including but limited to establishing and standardizing operational procedures for field sampling and administrative activities, constituent education and outreach activities, data management (compliance, entry and QA/QC), transmission of data to state/federal/partner agency fisheries managers/data users, Commercial and For-hire License and Permit coordination and support, Law Enforcement coordination and support (Magistrate Court Appearances), report writing, grant submissions and administration (applying for funding opportunities, budgeting and allocations) for approximately \$1 million dollars in state and federal funds. Directly supervise 7 staff, collaborate and assist in funding 17 employees. In addition, duties include serving as the agencies representative to several state and federal committees and working groups associated with the funding agencies including but not limited to the National Marine Fisheries Service (Fisheries Science Center), the Atlantic States Marine Fisheries Commission, the Atlantic Coastal Cooperative Statistics Program (Vice-Chair of the Operations Committee, Commercial Technical Committee), and the Atlantic Coastal Fisheries Cooperative Management Act. Active participate with the South Atlantic Fisheries Management Council meeting/discussions, and serves as a panelist with SEDAR Stock Assessments.

Serves as the Tournament Coordinator for the SC Governor's Cup Billfishing Series. The three goals of the Series are conservation, education, and research. All related activities ensure that the goals are met and often exceeded. Fundraising and management of the 501-c-3 funds.

Sept. 2000- Department of Natural Resources, Charleston, SC
 To Jan 2008

ACE Basin National Estuarine Research Reserve (NERR): Participation in comprehensive research activities within the ACE Basin NERR. Manage data collection, sampling instrumentation, and compiling of databases in support of the Reserve's participation in the System-Wide Monitoring Program (SWMP). Responsible for entry,

verification, editing, and statistical analysis of all data; assist with compellation of technical reports; preparing and delivering of presentations at conferences and workshops; and managing the ACE Basin NERR research budget.

Feb. 2000- Department of Natural Resources, Charleston, SC
To Sept. 2000

Marine Resources Division in the Office of Fishery Management: Assisting in the execution of an East Coast fin fish management plan. Anadromous species of American Shad and both Atlantic and Shortnose Sturgeon were collected, evaluated, tagged and released. Knowledgeable in the principles and practices of fish, statistical analysis, equipment maintenance and boat handling. Additionally, American Eel (elver) Young of the Year Survey; responsible for project set-up, daily sample collection, database management and analysis. (Currently the PI of this project)

Sept. 1999- Department of Natural Resources, Charleston, SC
To Feb. 2000

Marine Resources Research Institute: Sorted plankton samples to collect and identify three species of post-larval Peneaus shrimp. Responsible for continuation of project organization and data management.

UNDERGRADUATE EXPERIENCE (established the principles and practices that propelled my career):

Jan. 1997 Peer-Mentoring Program, Coastal Carolina University, Conway, SC
To May 1999

Co-instructor with the Dean of Sciences for a three hour, fall semester class. Served as a mentor and advisor for freshman Marine Science students throughout their first year of study.

May 1997 - Sea World of Florida, Orlando, FL
To Aug. 1997

Internship, Marine Education Instructor and Animal Care Assistant.

Dec. 1996 Coastal Carolina University, Coke and Topsail Islands, NC
To Dec. 1997

Undergraduate research assistant for a NSF grant-funded project to examine the long-range effects of hurricane damage/erosion on coastal barrier islands and marsh ecosystems. Conducted pre and post hurricane on-site surveys of sediment core sample collection. Analysis and results for the project were presented through reports and oral presentations.

EQUIPMENT KNOWLEDGE:

Outboard Motor Boats
Fishing Gear (Gill, Fyke, Trammel and Trawl Nets, and Electrofishing)
Biological Sampling procedures (length, otolith and gonad removal)
YSI and Nutrient data loggers/samplers

ADDITIONAL SPECIAL SKILLS:

Grant Principle Investigator
Certified Federal Grant Project Leader for USFWS
Microsoft Office Products
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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

Continued processing and aging of biological samples collected from U.S. South Atlantic commercial and recreational fisheries

Submitted by:
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NOAA National Marine Fisheries Service ACCSP
Funding Proposal: Continue aging of US South Atlantic reef fish species.

Sections of the proposal identified to help with the ranking process are highlighted in green with a summary on page15-16.

Page 1

Applicant: NOAA Fisheries Service, Southeast Fisheries Science Center, Beaufort, NC

Principal Investigator:
Jennifer C. Potts

Project Title: Continued processing and aging of biological samples collected from U.S. South Atlantic commercial and recreational

Project Type: Maintenance

Requested Award Amount: \$256,038

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

Original Date Submitted: June 13, 2016

Objectives:

NOAA National Marine Fisheries Service ACCSP
Funding Proposal: Continue aging of US South Atlantic reef fish species.

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Page 2

The primary objective of the proposed work is to continue processing and aging ACCSP-prioritized reef fish species in support of stock assessments for those species. This project aims to cover **100% of the biological module and item 2, biological data, of the Program Goals as stated in the FY2016 RFP.** The goal of this project is to process prioritized age samples as they are received annually. Another goal is to process prioritized samples that have been stored for many years. Focal species have been and/or will be assessed through the Southeast Data, Assessment, and Review (SEDAR) process and periodically updated in accordance with the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA). The NMFS Beaufort Laboratory receives the majority of the fishery-dependent age samples collected within the **U.S. South Atlantic. Our laboratory works closely with other regional ageing laboratories to provide age data inputs for the stock assessment models.** Thus, another objective of this study is **to create reference collections to exchange with other laboratories and participate in ageing workshops.** These collaborations will allow us to collectively address issues of **consistency in methodology and interpretation of age structures** between laboratories, allowing data sets to be combined for stock assessments. Also, because the NMFS Beaufort Laboratory receives biological samples from various state agencies and federally managed fishery-dependent surveys, the data associated with each sample will be verified, standardized to ACCSP protocols, and logged into the Beaufort bio-sample inventory (BFT) or the Bio-sample Database (BSD) linked directly to the NMFS Trip Interview Program database, which can be shared with ACCSP. **All of these objectives directly fulfill the mission statement of the ACCSP 2014 – 2018 Strategic Plan.**

Need:

NOAA Fisheries Service (NMFS) in the southeast region has instituted the Southeast Data, Assessment and Review (SEDAR) process for conducting stock assessments, through which model outputs are used to inform management in accordance with the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA). After forty-nine SEDARs, the most cited research recommendation has been the need for more comprehensive, validated, and consistent age composition data. The Atlantic Coast Cooperative Statistics Program (ACCSP) Biological Review Panel has also had extensive discussions about this issue (Technical Source Document V). In concurrence with the SEDAR and ACCSP recommendations is research conducted by Yin and Sampson (2004). Their study looked at the many factors influencing stock assessment models (e.g., length of data series, natural mortality, fishery selectivity curve, fishing mortality, recruitment, survey biomass index, fishery and survey age composition, fishing effort, and sampling error in catch data). Of the factors affecting estimates of ending biomass and projected catch, their study suggests improvement to the models can be made with increased age composition sampling, for the least cost.

Extensive collections of otoliths and spines dating to the 1970s for many of the most important reef fish species of the U.S. South Atlantic are stored at the NMFS Beaufort Laboratory. **These**

collections have been greatly enhanced because state natural resource agency partners and NMFS Southeast Fishery Science Center have placed greater emphasis on collecting age structures along with fish lengths from the fishery landings. Following the NMFS review of stock assessment science, a National Otolith Sample Size Working Group has been formed by NMFS to explore the question of how many age structures are sampled and how many are needed for a reliable stock assessment. This group has brought a lot of attention to the need for more age structure sampling. ACCSP has also funded or is reviewing proposals for funding state agencies to collect biological samples from the commercial fishery. **The Beaufort Laboratory now is receiving upwards of 24,000 age samples per year from commercial and recreational fishery landings contributed by many agencies including the North Carolina Division of Marine Fisheries (NCDMF), South Carolina Department of Natural Resources (SCDNR), Florida Fish and Wildlife Commission (FWC), NMFS Headboat Survey, and NMFS Trip Intercept Program (TIP).** These new samples will provide the age composition data for stock assessments, but funding is required for processing and ageing the samples.

Another strong research recommendation from several SEDARs pertained to age and growth studies of the same species performed by more than one laboratory. Researchers have been asked to standardize processing techniques, be consistent in age determination analysis, and resolve ageing discrepancies between laboratories. **The NMFS Beaufort Laboratory works closely with SCDNR, NCDMF, FWC and NMFS Panama City Laboratory to exchange processed samples for age comparison studies. Recently, Virginia Marine Resources Commission (VMRC) and Old Dominion University (ODU) have collaborated with NMFS Beaufort in ageing of blueline tilefish and snowy grouper.** Funding is required to support workshops to discuss processing methodology and interpretation of the aging structures. As a result of these workshops, **consistency in ageing will be met and paired age readings will be used to create age error matrices that will be used as input data to stock assessment models.**

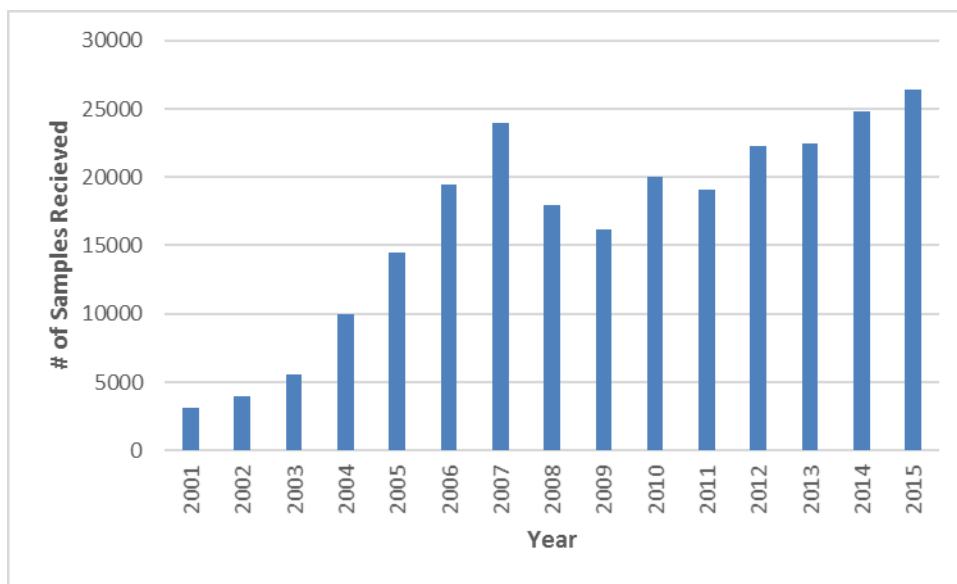
Aging of reef fish species and fiscal support of that work at the Beaufort Laboratory have evolved over the years. Initially, aging studies conducted by FTE staff of the Beaufort Laboratory were done on a species-by-species basis, but not specifically for stock assessment purposes. Those studies were also considered snap shots in time, rather than many years' worth of samples. Following the retirement of the lead scientist, leaving one FTE to carry on the work, and with the advent of the SEDAR process, a more concerted effort was needed to age fish for stock assessments. In 2003, one contract position was added to the lab funded through MARFIN funds, and the lab was able to provide a total of 4,300 ages for two species. MARFIN funded the aging work through 2009, but then could no longer support it. Expanded annual stock assessment (EASA) funds were used to support one contract position, from 2008 - 2014. The number of assessments requested each year increased, and commensurately the number of age samples collected and sent to Beaufort increased (Figure 1). With the support for biological sampling by ACCSP, the Beaufort Laboratory turned to ACCSP for funding in 2012, 2013, 2015 and 2016, which is the primary source of funding for production ageing work at the Beaufort Laboratory. Through ACCSP (3 positions), EASA funding (1 position) and two NMFS FTE staff

NOAA National Marine Fisheries Service ACCSP
Funding Proposal: Continue aging of US South Atlantic reef fish species.

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(part time on this project), the lab was able to show an increase in production processing from 5,000 to currently 24,000 age samples per year and from 4,300 to currently 18,000 actual ages for stock assessments over the past 12 years. Also, the lab was able to process and age valuable samples collected prior to 1990 which included economically valuable species such as red snapper, gag, red grouper, black sea bass, and gray triggerfish. These data were able to show potential shifts in age structure (e.g., age truncation), growth, and effects of minimum size limits over time. All of these elements are important indicators in stock assessments.

Figure 1. Number of age samples received at the Beaufort Laboratory 2001 – 2015.



Results/Benefits:

The NMFS Beaufort Laboratory has been collecting samples and aging reef fish species for 40 years, and is able to provide those data for assessment models for species of the snapper grouper complex of the U. S. South Atlantic. Funding for this project would be directed at the processing and aging of fish from the 2017 - 2018 proposed SEDAR species list, as well as continued processing of the highest priority species to ACCSP and in the SAFMC Snapper Grouper FMP. That work will begin during the summer of 2017, following the completion of the data input requirements for vermilion snapper and gray snapper. Work will already be underway processing scamp for which the lab holds more than 10,000 samples dating back to the late 1970s. Also, ongoing efforts to stay up to date on red snapper, black sea bass, red porgy, gag, red grouper, snowy grouper, blueline tilefish and tilefish (golden) will be continued. The data provided will

NOAA National Marine Fisheries Service ACCSP
 Funding Proposal: Continue aging of US South Atlantic reef fish species.

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reduce uncertainty about the stock assessment models of important commercial and recreational species. Also, the data would be used to characterize fishery landings and provide information on year class strength, effects of fishing on age structure, and growth of fish in the population.

Eight species currently managed in the SAFMC Snapper Grouper FMP are listed in the upper 25% of the ACCSP Bio-Sampling Priority Matrix. Two of these species, red grouper and blueline tilefish are scheduled for SEDAR assessments in 2016, and vermilion snapper is scheduled in 2017, and scamp in 2018. Thus, it is important to continue processing and reading the age samples collected. Past funding from ACCSP has allowed the Beaufort Laboratory to meet the SEDAR schedule.

Along with the eight snapper-grouper species in the Priority Matrix, the Beaufort Laboratory includes seven additional species as our top priority for age processing (Table 1). Those fifteen species make greater than 75% of total samples received annually. To process and read the annual samples received would take at least 400 person days to complete. In Addition, of those species, lane snapper and white grunt have not undergone a SEDAR assessment, nor are they on the SEDAR schedule to date. The Beaufort Laboratory has inventoried over 21,800 white grunt samples and approximately 8,000 lane snapper samples dating back to the early 1980s. Over 860 days will be needed to process and read the back-log of white grunt and lane snapper. The estimate of time required does not include the time spent verifying all the data and updating the inventories, exchange of calibration sets with other laboratories and age workshops, data analysis and report writing.

During the past several years, there have been changes to the SEDAR schedule by the SEDAR Steering Committee that have caused the NMFS Beaufort Laboratory staff to shift their species of focus. Due to the changes, the staff has had to sub-sample the collection for particular species, namely vermilion snapper, gray triggerfish and red grouper, to meet shortened deadlines, thus possibly compromising the data for the stock assessment. **By funding this proposal, NMFS Beaufort would be able to maintain the current number of staff, to continue to process primary reef fish species on an annual basis, and to process the back-log of samples held since the 1970s and the previously excluded age structures due to sub-sampling.** **Prioritized species of the SAFMC Snapper Grouper FMP are listed in Table 1 along with the number of age samples received in 2011 - 2015.** The annual cost estimate per species for processing and aging of the samples has also been calculated and included in Table 1. The cost estimate does not include inter-laboratory calibration component of study. **Samples from yellowtail snapper, mutton snapper and black grouper are sent to Florida's FWC in cooperation with that lab to age those species. FWC returns the age data to the Beaufort Laboratory for inclusion in the BFT and BSD.** The annual processing would allow the staff to respond to changes in the SEDAR schedule with less loss of data integrity.

Table 1. 2011-2015 Fishery-dependent age samples of the top priority species received at the NMFS Beaufort Laboratory. Estimated annual cost to process and age each species based on average salary cost and time per sample. Estimate does not include inter-laboratory calibration, age workshops, or data analyses.

Species	2011	2012	2013	2014	2015	Annual Cost to Age
BLACK SEA BASS	1441	2333	2289	2196	2423	\$30,230
SNOWY GROUPER	254	949	644	818	861	\$19,950
BLUELINE TILEFISH	639	1200	811	494	262	\$19,271
GRAY TRIGGERFISH	1286	1161	1008	1112	1125	\$32,205
GAG	1138	1261	734	890	650	\$19,832
RED GROUPER	895	812	448	521	230	\$12,333
TILEFISH	604	1713	1035	911	558	\$27,277
RED PORGY	1197	937	868	939	673	\$26,106
RED SNAPPER	2	338	700	912	64	\$8,556
VERMILION SNAPPER	5110	4902	4219	4121	3751	\$93,805
SCAMP	1159	1021	647	825	452	\$23,220
GRAY SNAPPER	324	322	607	1336	1238	\$16,242
WHITE GRUNT	1753	995	1635	2374	2415	\$38,926
LANE SNAPPER	269	333	544	830	562	\$10,771
Total	15542	18277	16189	18279	15264	\$378,726

The total number of otoliths or spines that can be processed and read in a single year is dependent on several factors, including the number of trained personnel in the lab, the type of processing required, and the difficulty in interpretation of the structure. Processing techniques include low-speed saws that may result in higher quality sections and allow for more than one section per sample, or a high-speed saw that results in one section and is adequate for easier to age fish. The three staff hired through ACCSP funds along with two FTEs will be able to process and read 20,000 age samples in one year. Funding of this proposal will allow for the continuation of the processing of age structures collected on an annual basis to meet the prioritized needs of SEDAR. The funds will also allow us to process through back-logged samples. Without these additional staff, stock assessment uncertainty will increase because of less-than-adequate age data inputs, and assessment biologists will be less likely to determine the effects of fishing on size composition or age structure of the populations.

The people hired into these contract positions would be required to participate in SEDAR Life History Groups. They would become intimately knowledgeable of the data associated with the age samples and with the methodology to age the fish. They would contribute to discussion of each species as an expert. The contract biologist would be required to contribute to analysis of the life history data inputs for the SEDAR assessment and contribute to the report writing.

Various state and federal laboratories each house their own collections of age samples, such as fishery-independent survey samples or special project samples. They will be working independently to process and read samples of many marine fish species. They will then work collaboratively by combining data with the other laboratories to give more complete life history information to assessment biologists. The funding of this proposal will ensure greater coordination between laboratories for exchanging processed samples and ensuring reader precision between laboratories.

Approach/Procedures:

Biological samples collected by port agents at various locations from North Carolina through the east coast of Florida will be shipped to the Beaufort Laboratory. Once received, staff will review the electronic and hard copy data for each sample, ensure the samples are properly labeled, sort the samples by species and store them for future processing. All sample data collected by port samplers will be entered into a searchable database that will be updated and maintained. **This information can be shared with ACCSP and NMFS SEFSC bio-sample databases. Staff will also respond to requests for samples from other regional ageing facilities, thus creating greater cooperation with those facilities.**

Staff of the NMFS Beaufort Laboratory will be responsible for processing the fishery-dependent age structures of species needed for SEDAR stock assessments. The samples will be sectioned and aged following the methods of Potts and Manooch (1999) and Cowan et al. (1995) in concurrence with other fish ageing laboratories. The age data will be recorded for each sample and provided to assessment biologists. After the data have been vetted through the SEDAR process or published, they will be made available to ACCSP and the NMFS Bio-sample databases.

All staff involved with these studies will be trained by the principal investigator, who has 26 years of experience ageing marine fish. Also, they will be required to assist in creating reference collections and training sets. Image analysis software will be used to take pictures of the age samples, apply measurements to them and annotate the images for training purposes. The staff will cross train with researchers at other laboratories. Age workshops will be held to standardize sample processing methodology and interpretation of the age structures, followed by exchanges of each lab's calibration sets. Many of the ageing laboratories in the Southeast region have worked together and exchanged information in the past, making cooperation between these facilities easier.

Geographic locations:

Biological samples for ageing will be collected from **commercial and recreational fishery landings from North Carolina through the east coast of Florida and the Florida Keys through routine, on-going sampling activities.** Recently, samples of deep-water reef fish species (e.g., blueline tilefish and snowy grouper) caught off of Virginia and Maryland have been included in the stocks from the U.S. South Atlantic. Funding for this proposal will result in contract research support personnel to be located at NMFS/SEFSC, Beaufort, NC.

LITERATURE CITED:

Cowan, J. H., Jr., R. L. Shipp, H. K. Bailey, IV, and D. W. Haywick. 1995. Procedure for rapid processing of large otoliths. Transactions of the American Fisheries Society 124:280-282.

Potts, J. C., and C. S. Manooch, III. 1999. Observations on the age and growth of graysby and coney from the southeastern United States. Transactions of the American Fisheries Society 128:751-757.

SEDAR. 2007. Consolidated SEDAR workshop recommendations for research, monitoring, and SEDAR procedures. Report from SEDAR, One Southpark Circle #306, Charleston, SC 29407. April 2007. 80p.

Yin, Y., and D. B. Sampson. 2004. Bias and precision of estimates from an age-structured stock assessment program in relation to stock and data characteristics. North American Journal of Fisheries Management 24(3):865-879.

Milestone Schedule:

TASKS	J	J	A	S	O	N	D	J	F	M	A	M
Receiving and storing hard parts	X	X	X	X	X	X	X	X	X	X	X	X
Processing hard parts	X	X	X	X	X	X	X	X	X	X	X	X
Ageing hard parts			X	X	X	X	X	X	X	X	X	X
Provide hard parts to cooperative institutions		X	X	X	X	X	X	X	X	X	X	X
Provide samples for reference collections	X	X	X	X	X	X	X					

Quarterly progress reports

X

X

X

Final Report

X

Project Accomplishments Measurement:

The ultimate accomplishment measurement of this project will be the successful completion of all age data for SEDAR scheduled species in FY2018. Two species are currently on the schedule for 2017 which include Vermilions Snapper and Gray Snapper. The work will have been begun prior to the funding of this project. To date, one species is on the 2018 SEDAR schedule which is Scamp. Some processing has already been done on those species, but the high volume of Scamp, Gray Snapper and Vermilion Snapper will take most of the staff's time to complete in time to meet the SEDAR schedule. Also, the lab intends to continue the aging of samples collected in 2017 for the species listed in Table 1. In particular, samples of lane snapper will be organized and processed. Other species will be processed as demanded.

Cost Summary:

	ACCSP	NMFS In-Kind	Total
Personnel Services/Salaries			
P.I. Salary (10 months)		\$78,161	\$78,161
FTE salary (12 months)		\$54,000	\$54,000
Contract Biologist (12 mo.)	\$89,648		\$89,648
Contract Technicians (12 mo.) x 2	\$159,790		\$159,790
Subtotal	\$249,438	\$132,161	\$381,599
Fringe Benefits			
\$115,946 *30%		\$39,648	\$39,648
Travel			
For age workshops (3 people * 1 trip)	\$1,600		\$1,600
Supplies			
Consumables (slides, saw blades, chemicals)	\$5,000		\$5,000
Facilities Cost Recovery Fee			
		\$61,000	\$61,000
TOTAL	\$256,038	\$232,809	\$488,847

BUDGET NARRATIVE for REQUESTED FUNDING
July 1, 2017 – June 30, 2018

Category	Cost	Justification
Personnel	\$249,438	Contract Biologist position to take lead on project (2080 hrs x \$43.10); Two contract technician positions to process age samples and assist in ageing (2 x 2080 hrs x \$37.69). These labor costs are negotiated pricing through the federal government.
Travel	\$1,600	Travel for 3 contract personnel to age workshop for 3 days (\$1,500).
Supplies	\$5,000	Estimated cost of supplies to process 20,000 age samples in one year. Supplies include embedding materials, slides, slide storage, saw blades, etc.
Total Request	\$256,038	

BUDGET NARRATIVE for NMFS IN-KIND FUNDING
July 1, 2015 – June 30, 2016

Category	Cost	Justification
Personnel	\$132,161	Includes 83% of PIs time and full time of FTE biologist. The personnel are directly involved with the day to day processing and aging of samples, laboratory management and data analyses.
Fringe Benefits	\$39,648	Fringe benefits are calculated on the partial salaries of the two FTE positions listed.
Cost Recovery Fee	\$61,000	The Beaufort Laboratory is in a unique position of cross-line office ownership of the facility. National Ocean Service owns the facility and National Marine Fisheries Service must reimburse NOS for direct costs such as utilities and administrative services, referenced above as “Cost Recovery Fee”, which is calculated on a per person basis. No other NMFS Laboratory in the Southeast Region is required to pay such a fee. The Southeast Fisheries Science Center has agreed to pay the fee for the requested personnel in this proposal, due to the importance of the proposed work.
Total	\$232,809	

Maintenance Project:

Table 2. History of related projects funded by ACCSP.

Funding Year	Project Title	ACCSP Funds	In-Kind Funds
2016	Continued processing and aging of biological samples collected from U.S. South Atlantic commercial and recreational fisheries in response to ACCSP bio-sample targets	\$254,706	\$266,306
2015	Continued processing and aging of biological samples collected from U.S. South Atlantic commercial and recreational fisheries in response to ACCSP bio-sample targets	250,831	\$264,601
2013	Processing and aging biological samples collected from U.S. South Atlantic commercial and recreational fisheries in response to ACCSP bio-sample targets	\$205,636 (partially funded; requested amount \$249,946)	\$98,800
2012	Processing and aging biological samples collected from U.S. South Atlantic commercial and recreational fisheries in response to ACCSP bio-sample targets	\$236,440	\$74,915

Table 3. Budget Narrative from FY2016 (A), FY 2015 (B), FY 2013 (C), and 2012 (D) funding.

A.

Category	Cost	Justification
Personnel	\$252,480	Contract Biologist position to take lead on project (2080 hrs x \$43.10); Two contract technician positions to process age samples and assist in ageing (2 x 2080 hrs x \$39.14). These labor costs are negotiated pricing through the federal government.
Travel	\$1,500	Travel for 3 contract personnel to age workshop for 3 days (\$1,500).
Supplies	\$3,726	Estimated cost of supplies to process 20,000 age samples in one year. Supplies include embedding materials, slides, slide storage, saw blades, etc.
Total Request	\$254,706	

B.

Category	Cost	Justification
Personnel	\$244,531	Contract Biologist position to take lead on project (2080 hrs x \$42.25); Two contract technician positions to process age samples and assist in ageing (2 x 2080 hrs x \$37.68). These labor costs are negotiated pricing through the federal government.
Travel	\$1,300	Travel for 3 contract personnel to age workshop for 3 days (\$1,300).
Supplies	\$5,000	Estimated cost of supplies to process 20,000 age samples in one year. Supplies include embedding materials, slides, slide storage, saw blades, etc.
Total Request	\$250,831	

C.

Category	Cost	Actual	Justification
Personnel	\$218,828	\$205,636 Note: All money went to contract labor cost. Supplies and travel were paid by other projects.	Contract Biologist position to take lead on project (1928 hrs x \$41.50); Two contract technician positions to process age samples and assist in ageing (2 x 1928 hrs x \$36.00). These labor costs are negotiated pricing through the federal government.
Travel	\$6,600.00		Travel for 3 contract personnel to age workshop for 5 days (\$3,600). Travel for two contract personnel to SEDAR Data Workshops for 7 days (\$3,000). These personnel will be required to participate in SEDAR Life History groups in order to represent data they have recorded.
Vehicle	\$616.00		Cost to use government vehicle for travel to Charleston, SC for age workshops and SEDAR meetings (\$0.55/mi).
Supplies	\$12,000		Estimated cost of supplies to process 20,000 age samples in one year. Supplies include embedding materials, slides, slide boxes, saw blades, etc. Required upgrade of image analysis software used in training and creating digital reference. Due to Federal Government required changes to Windows 7 platform, image analysis software (Image Pro) and camera interface software (Olympus) need to be upgraded. These software packages are critical for creating reference collections and training sets of age sample slides.
Total Request	\$249,946		

D.

Category	Cost	Justification
Personnel	\$213,565	Contract Biologist position to take lead on project (1928 hrs x \$40.77); Two contract technician positions to process age samples and assist in ageing (2 x 1928 hrs x \$35.00). These labor costs are negotiated pricing through the federal government.
Travel	\$6,000.00	Travel for 3 contract personnel to age workshop for 5 days (\$3,000) – Age workshop for Blueline tilefish, gray triggerfish and snowy grouper; Travel for two contract personnel to SEDAR Data Workshops for 7 days (\$3,000) – Participant in Life History group for SEDAR32 (blueline tilefish and gray triggerfish).
Vehicle	\$616.00	Cost to use government vehicle for travel to Charleston, SC for age workshops and SEDAR meetings (\$0.55/mi).
Supplies	\$5,000	Estimated cost of supplies to process 20,000 age samples in one year. Supplies include embedding materials, slides, slide boxes, saw blades, etc.
Overhead	\$11,259	Allowable NOAA overhead charge of 5% of total request (\$225,181). Used for administrative costs and IT equipment for new contract personnel.
Total Request	\$236,440	

Table 4. Accomplishments from the 2012 (A), 2013 (B) and 2015 (C) funding year cycles. Number of samples that have been sectioned and number of samples aged by species.

A. 2012

Species	# of Samples Sectioned	# of Samples Aged	Sampling Years
Black Sea Bass	1,000	3,300	2011 - 2012
Blueline Tilefish	800	3,117	2003 - 2012
Gray Triggerfish	700	6,240	1990 - 2012
Snowy Grouper	2,400		2010 - 2012
Red Porgy	1,300		2012
Red Snapper	300		2012
Gag	6,000		2005 - 2012
Vermilion Snapper	3,120		2012

B. 2013

Species	# of Samples Sectioned	# of Samples Aged	Sampling Years
Gag Grouper		6,551	2007 - 2012
Red Snapper		1,210	2010 - 2013
Gray Triggerfish		2,457	2012 - 2013
Gray Triggerfish from SCDNR collection		8,471	1991 - 2013
Blueline Tilefish		1,851	2012 - 2013
Black Sea Bass		1,935	2012 - 2013
Red Porgy	3,600		2012 - 2013
Tilefish	2,340		2011 - 2013
Vermilion Snapper	3,000		2012 - 2013
Scamp	1,200	300	1983 - 2013

C. 2015

Species	# of Samples Sectioned	# of Samples Aged	Sampling Years
Tilefish		4,297	2011 - 2014
Blueline Tilefish	1,566	1,566	2014 - 2015
Red Grouper	742	742	2014 - 2015
Black Sea Bass		2,395	2012 - 2013
Vermilion Snapper	5,670	11,759	2012 - 2015
Gag Grouper		1,182	2014 - 2015
Scamp	5,913		1983 - 2015
Gray Snapper	4,448		2006 - 2014
Greater Amberjack	428		2006 - 2014

Summary of Proposal for Ranking Purposes

Proposal Type: *Maintenance*

Primary Program Priority:

Biological Sampling: 100% of age samples collected from the eight SAFMC Snapper Grouper FMP species within the top 25% priority matrix will be processed and aged. The age data will be loaded into Bio-Sample Database housed at the NMFS SEFSC and made available for the SEDAR process. After the age data are vetted through the SEDAR process, those data will be made available to the ACCSP database.

Project Quality Factors:

Multi-Partner/Regional Impact Including Broad Impact:

Age samples from species managed through the SAFMC Snapper Grouper FMP will be collected and shipped to the NMFS Beaufort Laboratory for processing and ageing for stock assessment purposes. These age samples will be representative of the commercial and recreational fisheries operating from Virginia and North Carolina through the east coast of Florida. The samples will be collected by various state agencies and NMFS sampling programs. In cooperation with these programs, the Beaufort Lab will standardize data, inventory, and process the samples.

The Beaufort Laboratory will work collaboratively with several state and federal laboratories and universities through age workshops and exchanges of reference collections to ensure consistency in age data for input to SEDAR assessments. The partners include NCDMF, SCDNR, FWC, USC-Aiken, VMRC, ODU, NMFS Panama City.

Contains funding transition plan/Defined end point:

Once the lab has cleared the back-log of samples dating back to the 1970s, less staff would be needed to process the annual age samples at the current rate of accrual. Samples from most of the priority species have had the back-log cleared. All new samples received from those species are processed annually. The back-log from two other primary species remains to be processed –White Grunt, and Lane Snapper. The Beaufort Lab will be requesting funding assistance to accomplish that work and then start to reduce the amount of contract labor required to keep abreast of the annual samples. Also, funding through federal congressional budgets to enhance stock assessment data inputs would allow the Beaufort Laboratory to hire permanent federal employees and not have to rely on funding from ACCSP.

In-kind Contributions:

NMFS is providing 48% of the total project cost.

Improvement in data quality/quantity/timeliness:

Continued funding of this project would allow the Beaufort Laboratory to approach a level of processing of all age samples received from the South Atlantic Snapper Grouper fishery on an annual basis. When this level of processing is reached, the lab will be able to provide up-to-date age composition data for stock assessment purposes. The age samples would not need to be sub-sampled to meet schedule changes to SEDAR.

Potential secondary module as a by-product:

Other South Atlantic snapper grouper species with ACCSP sampling targets, but not in the current priority matrix will also be aged and data made ready for SEDAR assessments in the future.

Impact on stock assessments:

Funding of this project will address one of the top research recommendations coming from SEDAR - more comprehensive, validated and consistent age composition data. Age workshops and reference collections will enhance consistency in methodology and age data between partner laboratories.

CURRICULUM VITAE

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EDUCATION

North Carolina State University B. S. 12/1988 Fisheries & Wildlife Sciences

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PROFESSIONAL EMPLOYMENT

6/97 - present

Position: Research Fisheries Biologist.

NOAA/NMFS/SEFSC, Beaufort Laboratory, 101 Pivers Island Road, Beaufort, NC 28516-9722.

Responsibilities include Team Leader of Life History Team; collecting, cataloging, preparation and analysis of age samples; preparing manuscripts for peer review publication; Participation in SEDAR process – Life History Group Leader for South Atlantic assessments; training staff in ageing laboratory; reviewing proposals for federal government funding (i.e., MARFIN and S-K); reviewing manuscripts for peer review journals.

2/90 - 6/97

Position: Biological Technician (Fisheries).

NOAA/NMFS, Beaufort Laboratory, 101 Pivers Island Road, Beaufort, NC 28516-9722.

PUBLICATIONS

Peer Reviewed Publications (Selected)

Burton, M. L., J. C. Potts and D. R. Carr. 2015. Age, growth, and natural mortality of yellowfin grouper (*Mycteroperca venenosa*) from the southeastern United States. PeerJ 3:e1099; DOI 10.7717/peerj.1099

Burton, M. L., J. C. Potts and D. R. Carr. 2015. Age, growth and natural mortality of coney, (*Cephalophilis fulva*) from the southeastern United States. PeerJ 3:e825; DOI 10.7717/peerj.825.

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- of gray triggerfish (*Balistes capriscus*) from the southeastern United States. *Fishery Bulletin* 113:27–39.
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- Manooch, C. S., III, and J. C. Potts. 1997. Age and growth of greater amberjack from the Gulf of Mexico. *Bulletin of Marine Science* 61(3):671-683.

Pat Campfield, Chair
Operations Committee, ACCSP
1050 N. Highland Street, Suite 200 A-N
Arlington, VA 22204

Dear Mr. Campfield,

On behalf of the Recreational Technical Committee thank you and the entire Operations Committee and Coordinating Council for giving us this opportunity to submit our proposal for funding in the FY17 cycle. In the future, we will be sure to canvas all committee members for interest in submitting RecTech Committee proposal(s) for funding opportunities well before the initial submission deadline.

Enclosed please find our proposal, Increase At-Sea Sampling Levels for the Recreational Headboat Fishery on the Atlantic Coast, for \$155,754 to support 11 Atlantic State partners' data collection programs. Although this project directly supports 11 states' data collections the resultant improvements to Headboat data and derived estimate products will benefit all state, federal, commission, and council partners who require high quality data for fishery assessment, monitoring, and management. We would be happy to provide any additional information to support this proposal as requested by the Operations Committee, Coordinating Council, or ACCSP staff.

Sincerely,

Tom Sminkey, Ph.D., Chair
Recreational Technical Committee, ACCSP

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

Increase At-Sea Sampling Levels for the Recreational Headboat Fishery on the Atlantic Coast

Submitted by:

ACCSP Recreational Technical Committee

Proposal for FY2017 ACCSP Funding

Applicant name: ACCSP Recreational Technical Committee (RTC).

Project title: Increase At-Sea Sampling Levels for the Recreational Headboat Fishery on the Atlantic Coast

Project type: Maintenance Project.

Requested award amount: \$155,373

Requested award period: January 1 through December 31, 2017

Original date submitted: 8/15/2016

Revised date submitted: 8/15/2016

Objective

Continue enhanced at-sea observer coverage in the recreational for-hire headboat¹ fishery for ACCSP partner states from New Hampshire through Florida to improve precision around estimates of harvest and total catch for managed stocks, collect biological samples from both discarded and harvested fish, and monitor and assess bycatch.

Need

Precise estimates for landed catch have traditionally been achieved through dockside sampling. However, in contemporary recreational fisheries regulatory discards may make up all or a majority of the catch, at-sea surveys are needed to provide reliable and robust data for released catch. Size composition of recreational discards is one of the most important fishery-dependent data needs for management and age-based assessment of stocks throughout the U.S. Atlantic, and these data cannot be collected using dockside sampling methodologies. Coast-wide, headboat mode is the only segment of the recreational fishery with observer coverage; thus, no information on size composition of discards is currently available for any other recreational fishing mode².

In North and Mid-Atlantic states (ME through VA), the headboat segment of the recreational fishery is monitored through the Marine Recreational Information Program (MRIP), which provides catch statistics for all landed and discarded finfish. Catch data are collected by fishery biologists as they ride along on trips and directly observe fish that are harvested, as well as fish discarded at-sea. NOAA Fisheries funds sampling at a minimum level needed to accurately and precisely estimate catch on a regional scale; however, larger sample sizes are necessary for precise estimates at the state level. In addition, headboats that target certain federally managed species must also report all catch to National Marine Fisheries Service on logbook trip reports through the Vessel Trip Reporting Program (VTR). At-sea observer data may be used to characterize the biological composition of catch and validate catch reported through the VTR program.

¹ Headboats are a class of for-hire vessels that offer recreational fishing opportunities to large groups of individual anglers.

² Florida tested the use of observers on charter vessels on the Atlantic coast, but long-term funds were not available to continue coverage.

In the South Atlantic (NC through eastern FL), catch statistics for the headboat fishery are provided through the Southeast Headboat Survey (SEHBS), which includes dockside sampling of catch (harvested fish only) for biological data and validation of trip level catch reported on logbooks by vessel operators. Separate at-sea observer sampling in the South Atlantic provides important data needed to characterize the biological composition of released fish and potentially validate self-reported logbook data for discards. For many managed stocks in the South Atlantic, fishery-independent monitoring programs lack adequate coverage or do not capture the species of interest, and stock assessments depend on long time series from fishery-dependent monitoring programs to track abundance and recovery from overfishing. Headboat at-sea observer data served as an index of abundance for both Black Sea Bass and Red Snapper assessments in the Southeast (Sustainable Fisheries Branch NMFS 2011, 2015). For Red Snapper, which has been closed to harvest four out of seven years since 2010, the headboat at-sea observer index is currently the only fishery dependent index available.

Since 2005, thanks to funding from ACCSP, at-sea observer coverage has been increased coast-wide. These funds are particularly important to the South Atlantic region, where ACCSP has funded 100% of at-sea headboat observer coverage along the Atlantic coast of Florida (which represents 50% of linear coastline in the South Atlantic and 28% coast-wide). Additional trips sampled with ACCSP funds have led to increased sample sizes, which improves precision of state-level estimates of landings and discards, and has filled important data gaps for assessing important managed fish stocks coast-wide. This proposal details a plan similar to previous years to continue funding for enhanced observer coverage for the entire Atlantic coast. This maintenance proposal will continue activities that have been funded in the past as ACCSP partners continue to seek alternative funding. The proposal this year reflects decreased funding requests as some states are already reducing their dependence on ACCSP for funding additional samples; however, renewal is particularly important for coverage to continue in Florida, since 100% of funding comes from ACCSP and no other funding source is currently available.

Approach

Headboat vessels are randomly selected each month from the for-hire vessel directory for each state using a weighted systematic draw methodology. Operators from selected vessels are contacted in advance to arrange for observers to be on board during a scheduled fishing trip. Dependent upon the number of customers on board, one or two observers accompany passengers during the scheduled trip. The observer conducts the standard intercept survey with as many anglers as possible on each trip and randomly select a subsample of anglers from which discard data are collected. The observer will identify each fish to species, record length to the nearest mm, and record the disposition (including harvested, released alive, released dead). In Florida, additional details collected for individual fish, including capture depth, capture location (latitude and longitude), release condition at the surface (if discarded), hook location, hook type and size, venting method (if vented), and barotrauma symptoms. Red Snapper discards in Florida are also marked with a conventional tag prior to release, and mark-recapture data will ultimately be incorporated into a large-scale model to predict discard mortality measured directly within the fishery (Sauls et al. 2015a).

Catch estimates, CPUE, and biological data for applicable states are available to the public through the Marine Recreational Information Program and files are shared with ACCSP's Data Warehouse. Biological data (lengths, weights, available ages, and associated trip data) for fish sampled from Florida are housed in Gulf States Marine Fisheries Commission's FIN biological database, and the full Florida data set is housed in a relational database (SQL) on servers maintained by the Florida Fish and Wildlife Conservation Commission. Data and analyses from Florida are routinely shared during regional stock assessments (for examples, see Sauls et al. 2015a and 2015b) and available upon request.

Results and Benefits

Recreational landings data are used in stock assessments to account for total removals and by regional Fisheries Management Councils to determine if Annual Catch Limits (ACLs) are exceeded and accountability measures must be implemented. Discard mortality is also counted against the ACL for Red Snapper in the South Atlantic. Headboat at-sea observer data directly contributed to the recommended mortality rate for Red Snapper in the South Atlantic of 28.5% following required use of circle hooks, reduced from 37% before circle hooks were required in 2011 (Sauls et al. 2015a, SEDAR 2016). Estimated numbers of discards and the percentage that suffer mortality are used in stock assessments to account for total removals, and length information for discards is particularly useful for age-based stock assessments. Catch-per-unit-effort for discards from headboat at-sea observer surveys has become an important index of abundance for stock assessments in the South Atlantic, where fishery independent monitoring is inadequate.

At-sea sampling aboard headboats improves the accuracy of catch estimates and validation of self-reported logbook data by having trained observers identify, count, and measure the fish caught and released during recreational fishing. Additional at-sea sampling provided by ACCSP funding in previous years has increased the number of trips sampled and the quantity of measurements obtained for length and weight of retained fish and length of discarded fish for use in stock assessments. Summer flounder, scup and black sea bass are an especially important component of the headboat catch in the Mid-Atlantic region. These three species are jointly managed by the Atlantic States Marine Fisheries Commission and the Mid-Atlantic Fishery Management Council (MAFMC). The additional assignments provided by this request will reduce the level of scientific uncertainty in setting the Annual Catch Limits for each species by the MAFMC and result in improved optimization of the resource.

Geographic Location

The Atlantic coast of the United States from New Hampshire through Miami/Dade County, Florida.

Ranking Criteria Summary

- ACCSP funding priorities for recreational fisheries identified by the Recreational Technical Committee addressed by this proposal:
 - Priority 1: Improve precision of estimates
 - Priority 2: Improve discard/release data
 - Priority 4: For-hire logbook implementation and validation (specifically, this proposal addresses validation)
 - Priority 6: Biological sampling from recreational fisheries
 - Priority 8: Collection of more detailed information on fishing area
- Primary Program Priority:
 - Catch and Effort (50%)
 - Additional trips sampled in NH through VA will improve precision of estimates for both landings and discards.
 - Weight measurements of harvested fish will improve precision for landings estimated in weight for New Hampshire through Virginia.
 - Trips sampled in the South Atlantic (NC through FL) will contribute to validation of logbook data for discards.
 - Additional data elements collected in Florida will contribute to estimated total removals from combined harvest and discard mortality.

- Secondary Program Priorities:
 - Biological Data (40%)
 - This request will fund 100% of biological samples collected from the Atlantic coast of Florida and increase sample sizes from New Hampshire through North Carolina.
 - Length measurements from recreational discards fill a vital data need for assessing stocks, particularly for managed stocks closed to recreational harvest over all or a majority of the year.
 - High priority species in the ACCSP Biological Priority matrix affected by this proposal:
 - Black Sea Bass: biological sampling is inadequate.
 - Red Snapper: biological sampling is currently listed as adequate; however, recreational harvest was closed year-round in 2015 and 2016 and length measurements of discards collected through this maintenance project represent 100% of biological samples.
 - Winter Flounder: biological sampling is currently listed as adequate, but sampling priority remains high.
 - Additional priority species in the top quartile of the Biological Priority Matrix affected by this proposal:
 - Snowy Grouper, Gray Triggerfish, Blueline Tilefish, Tilefish, Red Drum, Red Grouper, Scamp, and Tautog
 - Biological sampling is inadequate for all of the above species.
 - Bycatch and Species Interactions (10%)
 - For prohibited species, monitoring for discards is the only source of fishery-dependent data.
 - Examples of prohibited species affected by this monitoring include: Warsaw Grouper, Speckled Hind, and various shark species.
- Multi-Partner/Regional:
 - The following ACCSP partners will benefit from this supplemental data collection:
 - Ten states: FL, NC, VA, MD, NJ, NY, CT, RI, NH, MA
 - One regional Commission: Atlantic States Marine Fisheries Commission
 - Three regional Councils: South Atlantic, Mid-Atlantic, North Atlantic
 - Five branches of NOAA Fisheries, National Marine Fisheries Service: two science centers, two regional offices, and the Office of Science and Technology
- In kind Contribution: \$23,328 (13.05% of requested plus in-kind)
- Funding Transition Plan:
 - State conduct of the MRIP Access Point Intercept Survey (APAIS) began in 2016, and some states are now better able to conduct additional headboat sampling without ACCSP funds:
 - GA will conduct 11 trips, RI will conduct 8 trips, and MA will conduct 4 trips during 2017 at no cost to ACCSP
 - The ACCSP Recreational Technical Committee includes representatives from Atlantic coast states and NOAA Fisheries, and this Committee will evaluate headboat sample sizes in coming years to determine the optimum base sample size that should be included in future APAIS Statements of Work (SOW), with the intent of eliminating the need for ACCSP to fund add-on sample for those states in future years.

- Florida receives funds for recreational surveys through Gulf States Marine Fisheries Commission (Gulf FIN), and this program is currently unable to pay for headboat observer coverage in any state. The state is pursuing long-term funding for observer coverage on the Gulf coast, including the Florida Keys, through oil spill reparations. However, the remainder of Florida's Atlantic coast is ineligible for oil spill funds. An alternative source for future funding on the Atlantic coast of Florida is yet to be determined.
- Improvement in data quality/quantity:
 - Quality: improve precision of catch estimates of key finfish species caught in headboat fishing mode
 - Quality: improve accuracy of headboat catch estimates based on observer identification and counts
 - Quality: provide validation of Vessel Trip Report and Southeast Region Headboat Survey captain-reported catch and effort data
 - Quantity: Increase numbers of trips observed and numbers of anglers intercepted.
 - Quantity: Increase numbers of lengths and weights collected from recreational catch.
 - Quantity: Prevent backslide by funding 100% of HB at-sea sample in Florida (120 trips)
- Impact on Stock Assessments:
 - Species impacted by this work are priorities for upcoming stock assessments, including:
 - Striped Bass, Black Sea Bass, Bluefish, Summer Flounder, Tautog, and Weakfish will undergo assessments by Atlantic States Marine Fisheries Commission (ASMFC) in 2018 and 2019.
 - Black Sea Bass, Scamp, Gray Triggerfish, White Grunt, Red Grouper, Vermilion Snapper, Red Snapper, Blueline Tilefish, Golden Tilefish, Black Grouper, Yellowtail Snapper, King Mackerel, and Greater Amberjack have been identified by the South Atlantic Fishery Management Council (SAFMC) as assessment priorities through 2020.
 - At-sea observer coverage does not exist in any other segment of recreational fishery along the Atlantic coast, and this project is the only source of information available to characterize the size composition of recreational discards.
 - This proposal will fund 100% of headboat observer coverage on the Atlantic coast of Florida.
 - Fishery independent surveys in the South Atlantic are not adequate for assessing many stocks and do not extend through southeast Florida. Therefore, fishery dependent surveys are relied upon as a relative measure of stock abundance. For example:
 - Headboat CPUE served as an index of abundance in stock assessments for Black Sea Bass and Red Snapper (Sustainable Fisheries Branch NMFS 2011, 2015).
 - Historic fishery-dependent time-series for Red Snapper have terminated due to harvest closures, and CPUE of discards is the only fishery-dependent index of abundance currently available.
 - The headboat at-sea index of abundance is particularly useful for age-structured models because the associated size composition of discards is available.
 - Additional data collected in Florida have contributed to estimated discard mortality, including:
 - Capture depth
 - Proportions of discards that suffer hook injuries
 - Proportions of discards that are vented or floating at the surface
 - Proportions of tagged Red Snapper discards that are released in various conditions and later recaptured

Milestone Schedule

NOAA Fisheries staff will provide the total headboat at-sea sample size to the data-collection partner, including those funded by the ACCSP. As documented in the current Statement of Work (SOW) for the MRIP Access Point Intercept Survey (APAIS), procedures will be followed by the data collection partners to perform the intercept sampling. Additionally, all work associated with this proposal will occur within the dates as specified in the SOW for other deliverables associated with conduct of the intercept survey. Semi-Annual (30 days following month 6 and 12) and Final Progress Reports (90 days following month 12) will be completed as specified in the ACCSP Funding Decision Process Document, but may also be required more frequently by the NMFS.

Project Metrics

Table 2 provides sample goals for each two month period (wave). Progress toward goals for this project will be measured in numbers of vessel trips sampled each wave. Should a state's goal not be reached in a particular wave (e.g., weeks of inclement weather result in a large portion of the vessels to cancel trips), those vessel trips can be "rolled over" to subsequent waves within the calendar year, with the total obtained for the year not to exceed the requested annual allocation.

Cost Details

Requested Funds

A total of \$155,373 is requested for this proposal. A summary of costs associated with this proposal for participating states is given in Table 3. Funds for the states of New Hampshire through North Carolina will be delivered to NOAA Fisheries which will disperse the funds via a grant to the ASMFC/ACCSP who will contract with the states for conduct of APAIS headboat assignments. Funds supporting at-sea headboat trips in Florida will be dispersed to NOAA's Southeast Fisheries Science Center (and charged a 5% administrative fee) before being dispersed to Florida to conduct the work.

Budget narrative for cost summary provided in Table 3:

1. Personnel (a): Costs listed are for part time personnel necessary to complete additional trips above the base sample supported by the APAIS program.
2. Fringe (b): Medicaid and FICA costs, expressed as a percentage of total personnel.
3. Travel (c): travel costs are requested to pay for mileage to and from headboat sample sites and cover regular or reduced headboat passenger fare, which is paid for each observer in order to secure space on limited capacity vessels. Some states require payment of headboat fare so that state employees are covered by liability insurance for the vessel. Other costs include parking and highway tolls. Travel costs in RI and CT include headboat fare for one state biologist and one additional ACCSP funded support staff (for which personnel and fringe are not requested).
4. Total Direct Charges (i). Total personnel, fringe and travel. No supplies, equipment, or contractual services are requested.
5. Indirect Charges (j)
 - The state of Florida assesses an overhead charge to grants to cover the costs of administrating the grant. For ACCSP, the overhead is capped at 25% of total direct charges.
 - For New Hampshire through North Carolina, the Commission has established a policy determining that a state's indirect cost recovery is limited to the percentage that the Commission is authorized on the cooperative agreement for states' conduct of the APAIS (Appendix A). If this funding proposal is approved, the

additional headboat assignments for these states will be funded through existing APAIS agreements with ASMFC at the indirect rates previously negotiated and included in the budget table.

In-Kind Contributions

In-kind contributions total \$23,328 or 13.05% of the total cost (requested funds and in-kind contributions, combined). A summary of costs associated with in-kind contributions is provided in Table 4. Included in this amount is MRIP staff time from NOAA Fisheries to perform quality control on the data, produce and review catch and effort estimates for the headboat fisheries of the Atlantic Coast, and serve as liaison between the For-Hire contractor, the Atlantic States, and Atlantic Coast data collection program. The estimated cost for 5% of one full time staff person is \$10,000. As the coordinator for state conduct of the APAIS from ME through GA, ACCSP will provide pre-printed data collection forms on waterproof paper and staff time for data entry, quality control, and all central coordinator tasks related to conducting the additional at-sea data collection at an estimated value of \$8,000. The state of Florida will provide supplies (measuring boards, scales, and other equipment); pre-printed data collection forms on waterproof paper; staff time for data entry, quality control, and database management; and oversight of field data collections at an estimated value of \$10,328.

Funding Transition Plan

The funding history for this maintenance proposal is summarized in Table 5. This proposal represents a 13.3% decrease from last year's award amount (\$23,913 less than FY16, Table 5). The decrease is due in part to three states transitioning away from ACCSP funds. Two states (RI and CT) now have ACCSP support staff funded through the cooperative agreement for state conduct of the APAIS, which allowed them to partially transition away from ACCSP funding this year by reducing their requests for personnel and fringe to just one state biologist (down from two last year). In addition, some states are now better able to cover the full cost for all or a portion of add-on sample. Rhode Island and Massachusetts are only requesting ACCSP funds for 50% and 82% of additional trips, respectively (Table 2). Rhode Island will cover the costs for 8 trips with a combination of state license receipts and Sportfish Restoration funds, and Massachusetts will conduct 4 trips with state funds. Georgia is now able to cover the cost for all of their add-on sample and is no longer requesting ACCSP funds. Previously, Georgia conducted the APAIS survey through a sub-contract with the NOAA contractor, and the cost for headboat at-sea samples was subsidized by the state. The transition in 2016 to direct state conduct through ACCSP has enabled Georgia to cover the full cost of headboat observer coverage.

Additional decreases in this year's funding request are attributed to states reducing add-on sample requested (Table 2). In northern states, it is difficult to conduct trips during Wave 2 due to inclement weather in March and April, and several states eliminated Wave 2 add-on sample. States that reduced add-ons in all waves are continuing to adapt to state conduct and also wanted to reduce costs for ACCSP. In addition, Delaware eliminated their add-on request in response to high refusal rates for the voluntary survey by vessels that already report through the VTR Program (required for certain federal permits), participate in the APAIS (mandatory for Large Pelagic permit), and report for Highly Migratory Species (mandatory).

With state conduct of the APAIS underway in 2016, the Recreational Technical Committee (RTC) is now looking ahead to a longer-term funding transition plan for this maintenance project. Recent discussion has revolved around the need to review current base sample levels funded by NOAA Fisheries as part of the new Atlantic Coast cooperative agreement for state conduct of the APAIS. The RTC will be evaluating base sample sizes in the coming years to determine new optimum sample sizes that ideally should be included in future APAIS Statements of Work, which would enable those states to transition away from requests for added sample through ACCSP in the future. However, this would not solve the funding issue for Florida, which is the only Atlantic coast state that receives APAIS funds under a separate statement of work through Gulf States Marine Fisheries Commission (Gulf FIN). Gulf FIN covers the cost of APAIS on the Atlantic coast of Florida with funds allocated to the Gulf (even though no additional funds are allocated to Gulf FIN to cover both coasts). Gulf FIN currently is struggling to keep up with the increasing costs of the APAIS, which has forced the program to eliminate funding for headboat at-sea observer coverage in all states. The state of Florida has secured temporary funding for observer coverage on the Gulf coast through oil spill reparation funds, and project managers are hopeful that funding will continue long-term. Gulf oil spill funds also pay for headboat at-sea observer coverage on the nearly 200 miles of Atlantic coastline in the Florida Keys, thus no ACCSP funds are requested for this area. However, the remainder of the Atlantic coast of Florida is ineligible for Gulf oil spill funds. An alternative funding source for transitioning away from ACCSP is yet to be determined for the Atlantic coast of Florida.

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Table 1. Milestones.

Task	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
NOAA Fisheries, sample size/allocation tables produced	x											
At-sea sampling data collections	x	x	x	x	x	x	x	x	x	x	x	x
Semi-annual and final progress reports						x						x

Table 2. Headboat at-sea sample allocation (base sample) and additional trips to be conducted during 2017 (reductions from 2016 noted in parenthesis).

State	Number of Vessel Trips								Add-On ACCSP Funded
	MRIP Base Sample	Jan/Feb	Mar/Apr	May/June	Jul/Aug	Sep/Oct	Nov/Dec	Total Add-On to Base	
	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6			
ME	16							0	
NH	20		1 (-1)	2 (-1)	3 (-1)	1 (-2)	0	7 (-5)	100%
MA	44		0	6	10	6	0	22	82%
RI	28		0	4	6	4	2	16	50%
CT	20		0	2	2	2	2 (-2)	8 (-2)	100%
NY	50		0 (-3)	5 (-1)	6 (-1)	5 (-1)	2 (-1)	18 (-7)	100%
NJ	56		0 (-3)	5 (-2)	6 (-2)	5 (-2)	2 (-1)	18 (-10)	100%
DE	34		0 (-2)	0 (-4)	0 (-5)	0 (-4)	0 (-2)	0 (-17)	100%
MD	42		1 (-1)	3 (-2)	5 (-2)	3 (-2)	0 (-2)	12 (-9)	100%
VA	34		0 (-2)	4	5	4	2	15 (-2)	100%
NC	56		2 (-2)	5 (-2)	6 (-2)	5	2 (-2)	20 (-8)	100%
SC	28							0	
GA	0		2	2	3	2	2	11	0%
East FL	0	16	22	22	22	22	16	120	100%
Total	428							247 (-60)	91%

Table 3. Cost summary for funds requested from ACCSP.

MA	COST	NH	COST	RI	COST	CT	COST
Personnel (a)		Personnel (a)		Personnel (a)		Personnel (a)	
(\$230/trip x 18 trips x 2 staff)	\$ 8,280	(10 hr/trip x \$20.60/hr x 7 trips x 2 staff)	\$2,884	(8 hr/trip x \$15.50/hr x 8 trips x 1 staff)	\$992	(10 hr/trip x \$12.00/hr x 8 trips x 1 staff)	\$960
Fringe (b)		Fringe (b)		Fringe (b)		Fringe (b)	
Fringe included in personnel		51.07%	\$1,473			62.50%	\$600
Travel (c)		Travel (c)		Travel (c)		Travel (c)	
Mileage included in personnel		\$0.54/mi x 7 trips x 54 mi	\$204	\$0.54/mi x 8 trips x 30 mi	\$130	\$0.54/mi x 8 trips x 30 mi	\$130
				Headboat fare (\$65/trip x 8 trips x 2 staff)	\$1,040	Headboat fare (2 staff x \$40/trip x 8 trips)	\$640
Total Direct Charges (i)	\$8,280	Total Direct Charges (i)	\$4,561	Total Direct Charges (i)	\$2,162	Total Direct Charges (i)	\$2,330
Indirect (j)		Indirect (j)		Indirect (j)		Indirect (j)	
10% of TDC	\$ 828	10% of TDC	\$456	0% of TDC	\$0	24% of TDC	\$559
Sum of Direct and Indirect (k)	\$9,108	Sum of Direct and Indirect (k)	\$5,017	Sum of Direct and Indirect (k)	\$2,162	Sum of Direct and Indirect (k)	\$2,889
NY	COST	NJ	Cost	MD	COST	VA	COST
Personnel (a)		Personnel (a)		Personnel (a)		Personnel (a)	
(8 hr/trip x \$21.64/hr x 9 trips x 2 staff) + (8 hr/trip x \$21.64/hr x 9 trips x 1 staff)	\$4,674	(8 hr/trip x \$19.00/hr x 18 trips x 1 tech staff) + (8 hr/trip x \$13.00/hr x 18 trips x 1 hourly staff)	\$4,608	(8 hr/trip x \$13/hr x 12trips x 2 staff)	\$2,496	(8 hr/trip x \$20.00/hr x 15 trips x 2 staff)	\$4,800
Fringe (b)		Fringe (b)		Fringe (b)		Fringe (b)	
\$4/hr for hourly staff	\$864	53.95% tech + 7.65% hourly	\$1,619	40%	\$998		
Travel (c)		Travel (c)		Travel (c)		Travel (c)	
\$0.54/mi x 18 trips x 85 mi	\$826	[(100 mi/trip*18 trips)/20 mpg]*\$4/gallon	\$360	\$0.54/mi * 12 trips * 75 mi * 2 staff	\$972	\$0.56/mi x 30 trips * 50 mi	\$840
Headboat fare (\$60/ trip x 9 trips x 2 staff)+(\$60/trip x 9 trips x 1 staff)	\$1,620	Headboat fare (\$55/trip x 18 trips x 2 staff)	\$1,980	Headboat fare (\$75/trip x 12 trips x 2 staff)	\$1,800	Headboat fare (\$50/trip x 15 trips x 2 staff)	\$1,500
Parking and tolls (\$27 x 6 trips)	\$162	Parking and highway tolls	\$200	\$10 parking x 12 trips x 2 samplers	\$240		
Total Direct Charges (i)	\$8,146	Total Direct Charges (i)	\$8,767	Total Direct Charges (i)	\$6,506	Total Direct Charges (i)	\$7,140
Indirect (j)		Indirect (j)		Indirect (j)		Indirect (j)	
0% of TDC	0	15% of personnel and fringe	\$934	10% of personnel and fringe	\$349.44	10% of TDC	\$714.00
Sum of Direct and Indirect (k)	\$8,146	Sum of Direct and Indirect (k)	\$9,701	Sum of Direct and Indirect (k)	\$6,856	Sum of Direct and Indirect (k)	\$7,854

Table 3. Continued.

NC	COST	FL	COST
Personnel (a)		Personnel (a)	
(10 hr/trip x \$ 16.92/hr x 20 trips x 2 staff)	\$6,768	(10 hr/trip x \$15.00/hr x 110trips x 2 staff) + (10 hr/trip x \$15.00/hr x 10 trips x 1 staff)	\$34,500
Fringe (b)		Fringe (b)	
		34.50%	\$11,903
Travel (c)		Travel (c)	
\$0.54/mi x 20 trips x 80 mi	\$864	\$0.445/mi x 120 trips * 80 mi	\$8,544
Headboat fare (\$75/trip x 20 trips x 2 staff)	\$3,000	Headboat fare (2 staff x \$75/trip x 110 trips) + (1 staff x \$75/trip X 10 trips)	\$17,250
Parking and Permits	\$280	Parking and highway tolls	\$240
Total Direct Charges (i)	\$10,912	Total Direct Charges (i)	\$72,437
Indirect (j)		Indirect (j)	
20% of TDC	\$2,182	25% of TDC	\$18,109
Sum of Direct and Indirect (k)	\$13,094	Sum of Direct and Indirect (k)	\$90,546

Table 4. Cost summary for in-kind contributions.

FLORIDA	In kind	ACCSP	In kind	NOAA	In kind
Personnel (a)		Personnel (a)		Personnel (a)	
5% of time for one Research Scientist and two Assistant Research Scientists	\$6,500	8% of one full time salary	\$7,500	5% one full time salary	\$10,000
Fringe (b)		Fringe (b)		Fringe (b)	
34.50%	\$2,243				
Supplies (d)		Supplies (d)		Supplies (d)	
pre-printed forms on waterproof paper, measuring boards, scales	\$425	pre-printed forms on waterproof papter	\$500		
Other (h)		Other (h)		Other (h)	
Mailing, copying, cell phone service	\$1,160				
Total	\$10,328	Total	\$8,000	Total	\$10,000

Table 5. ACCSP Funding Related to the For-Hire Headboat Fishery: 1999-2016.

Year	Project Description	Funds Received	# At-Sea Trips
FY99	Outreach with SC for-hire constituents prior to For-Hire Pilot Study (SCDNR)	\$5,000	
FY00	For-Hire Pilot Study comparing three data methodologies in SC	\$94,082	
FY01	Independent evaluation of SC For-Hire Pilot Study	\$7,695	
FY02	Outreach with for-hire constituents & development of vessel directory prior to implementation of For-Hire Survey	\$66,000	
FY03	Increase charter and party/headboat sampling levels from ME through GA (100% increase)	\$418,972	456
FY04	Increase charter and party/headboat sampling levels from ME through GA (100% increase)	\$533,410	456
FY05	Increase charter and party/headboat sampling levels from ME through FL (100% increase in general, FL HB sampling added)	\$666,740	565
FY06	Increase charter (100% increase) and party/headboat (50% increase ME-GA, FL level funded) sampling levels from ME through FL	\$389,700	560
FY07	Increase charter (100% increase) ME through GA and party/headboat (50% increase) sampling levels from ME through FL	\$391,940	357
FY08	Increase charter (100% increase) ME through GA and party/headboat (50% increase) sampling levels from ME through FL (excluding GA)	\$359,753	310
FY09	Increase charter (100% increase in most waves) NH through GA and party/headboat (50% increase) sampling levels from NH through FL (excluding ME, CT, RI, GA)	\$309,279	327
FY10	Increase charter (between 50-100%) NH through GA (excluding ME, CT, RI, MD, RI) and party/headboat (50% increase) sampling levels from NH through FL (excluding ME, CT, RI, SC, GA)	\$376,092	293
FY11	Increase charter (between 50-100%) NH through GA (excluding ME, CT, RI, MD, RI) and party/headboat (50% increase) sampling levels from NH through FL (excluding ME, CT, RI, SC, GA)	\$299,591	276
FY12	Increase party/headboat (50% increase) sampling levels from NH through FL (excluding ME, CT, RI, VA)	\$159,573	285
FY13	Increase party/headboat (50% increase) sampling levels from NH through FL	\$147,707	302
FY14	Increase party/headboat sampling levels from NH through FL	\$155,490	314
FY15	Increase party/headboat sampling levels from NH through FL	\$168,738	327
FY16	Increase party/headboat sampling levels from NH through FL (excluding SC)	\$179,286	327

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EDUCATION

The College of William and Mary, Virginia Institute of Marine Science, M.A. 1986, Ph. D. 1994,
Marine Science
University of Pennsylvania, B.A. 1978, Biology

WORK EXPERIENCE

December 1999 – Present: Statistician, Fishery Statistics, OST, NMFS, NOAA. Participate in team design of recreational fishery monitoring surveys; represent NMFS fishery statistics division on multi-agency technical committees of ACCSP, GulfFIN, SEDAR, and ad-hoc workshops as needed; administer Access-Point Angler Intercept Survey acquisition and conduct on Atlantic Coast by federal contractor; design, implement, and provide technical oversight as Technical Monitor for Hawaii Marine Fishery Survey Cooperative program (MRFSS APAIS in Hawaii); serve as Technical Monitor for GulfFIN Cooperative Agreement grant which includes recreational monitoring APAIS conduct, commercial fishery trip ticket data collections, biological sampling of commercial and recreational fisheries, and other funded tasks; provide advisory and technical support to For-Hire Survey on Atlantic Coast; produce specialty data analyses and data extractions as requested.

July 1998 - December 1999 - RecFIN(SE) Programmer/Analyst, Gulf States Marine Fisheries Commission. Lead development of data processing tools and programs for implementation of the MRFSS Access-Point Angler Intercept Survey field data collection by the Gulf of Mexico States under the coordination of the GulfFIN program of the GSMFC.

PROFESSIONAL SOCIETIES

American Fisheries Society
American Statistical Association
American Society of Ichthyologists and Herpetologists

PRESENTATIONS

Implementation and Evolution of an Access-Point Angler Intercept Survey. American Fisheries Society Annual Meeting. 2015. Portland, OR.

Charter Boat Fishing Effort Estimates and Survey Changes. American Fisheries Society Annual Meeting. 2011. Seattle, WA.

Beverly J. Sauls, Research Scientist

Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute
100 8th Avenue SE, Saint Petersburg, FL 33701
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Education

University of South Florida, M.S., College of Marine Science, Marine Resource Assess. Program, 2013
Christopher Newport University, B.S., Biology, 1993

Professional Experience

Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute,
Research Scientist, September 2001 to present

- Design, implement, supervise, and oversee the conduct of fishery-dependent data collection programs for recreational fisheries throughout the state of Florida. Accomplishments include:
 - Chaired Marine Recreational Information Program (MRIP) For-Hire Workgroup (2006-2012) and led project team to design and pilot test a regional-scale electronic logbook reporting system for charter vessels in the Gulf of Mexico.
 - Designed and implemented a large-scale at-sea observer program on for-hire recreational fishing vessels combined with a mark-recapture study of regulatory discards, and developed a quantitative model to estimate discard mortality.
 - Worked collaboratively with NMFS and statistical consultants to design and implement specialized data collection programs to supplement the general MRIP survey in Florida.

Maryland Department of Natural Resources, Fishery Management Plan Writer, Jan. 1994 to June 1998

- Led development of Fishery Management Plans for the Chesapeake Bay Program.

College of William and Mary, Virginia Inst. of Marine Science, Lab Technician, June 1989 to Dec. 1993

- Collected quantitative data utilizing radio and sonic telemetry and aerial surveys. Compiled over ten years of mark-recapture data for marine turtles and summarized migration patterns.

Current Appointments

- Atlantic Coast Cooperative Statistics Program, state representative on Operations Team and Recreational Technical Committee
- Gulf States Marine Fisheries Commission, state representative on FIN Committee and Data Management Subcommittee
- Southeast Data Assessment and Review (SEDAR), Data Workshop Panelist for South Atlantic and Gulf of Mexico stock assessments

Select Peer-Reviewed Publications

2016. Sauls, B., A. Strelcheck and R. Cody. Survey methods for estimating red snapper *Lutjanus campechanus* landings in a high-effort recreational fishery managed with a small annual catch limit. In progress (accepted, pending revisions).

2014. Sauls, B. Relative survival of gags *Mycteroperca microlepis* released within a recreational hook-and-line fishery: application of the Cox regression model to control for heterogeneity in a large-scale mark-recapture study. *Fisheries Research* 150: 18-27.

2012. Sauls, B. and O. Ayala. Circle hook requirements in the Gulf of Mexico: application in recreational fisheries and effectiveness for reef fish conservation. *Bulletin of Marine Science*. 88: 667-979.

Appendix 1. Policy on indirect cost recovery.



Atlantic States Marine Fisheries Commission

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703.842.0740 • 703.842.0741 (fax) • www.asmf.org

Dr. Louis B. Daniel, III (NC), Chair Douglas E. Grout (NH), Vice-Chair Robert E. Beal, Executive Director

Vision: Sustainably Managing Atlantic Coastal Fisheries

Policy on Indirect Cost Recovery

The Commission has established a policy determining that a subcontractor's indirect cost recovery is limited to the percentage of indirect cost recovery that the Commission is authorized on the cooperative agreement. The Commission can make exceptions to this policy on a case by case basis.

Approved by the Executive Committee 2.4.15

MAINE • NEW HAMPSHIRE • MASSACHUSETTS • RHODE ISLAND • CONNECTICUT • NEW YORK • NEW JERSEY • DELAWARE
PENNSYLVANIA • MARYLAND • VIRGINIA • NORTH CAROLINA • SOUTH CAROLINA • GEORGIA • FLORIDA



STATE OF MAINE
DEPARTMENT OF
MARINE RESOURCES
MARINE RESOURCES LABORATORY
P.O. BOX 8, 194 MCKOWN POINT RD
W. BOOTHBAY HARBOR, MAINE 04575-0008

PAUL R. LEPAGE
GOVERNOR

PATRICK C. KELIHER
COMMISSIONER

August 12, 2016

Atlantic Coastal Cooperative Statistics Program
1050 N. Highland St. Ste. 200 A-N
Arlington, VA 22201

We are pleased to submit the proposal titled “FY17: Creation of a Fully Integrated Harvester and Dealer Reporting Tool with Trackers for Maine’s Urchin and Scallop Fisheries” for your consideration. This is a new proposal to build a tool that links electronic harvester reporting with the use of trackers to provide fisheries managers, fisheries scientists and law enforcement with the most timely and accurate fisheries data possible. The MEDMR has successfully used swipe cards for three years in the elver fishery and is about to expand the use of swipe cards into the sea urchin and scallop fisheries within the next two years. This past winter the MEDMR also piloted a tracker project with three scallop vessels that has provided fisheries managers and scientists with information that has opened our eyes to what this technology could do for the future of fisheries management practices. The MEDMR fully funded the swipe card and tracker projects that have currently been in production, although other partners may benefit from its results. The results from the tracker pilot project and swipe card program were deemed a success and now the DMR would like to connect these reporting tools with electronic harvester reporting to create a comprehensive, multi-point reporting tool for fisheries where traditional forms of reporting (paper and current electronic methods) have had their limitations. Having trackers provide a harvester report with an integrated tracker location would help harvesters provide MEDMR with the most accurate spatial data available. This proposal addresses the following 2017 ranking criteria: catch and effort, regional impact, funding transition plan, in kind contribution, improvement in data quality and timeliness, impact on stock assessment, innovative and properly prepared. This proposal has been revised from the original proposal submitted on June 13th to address all reviewers’ questions and comments. For a summary of the proposal for ranking purposes, please see page 32. Contact Robert Watts or Lessie White at the Maine Department of Marine Resources with any questions. Thank you for your consideration of this proposal.

In our original proposal, committee members asked that we address the following questions below. We are addressing them in this cover letter and within the proposal where necessary.

- Why can’t the existing SAFIS-mobile software be used for this as it has the ability to use a GPS to track vessel activity? Discuss benefits of utilizing satellite tracking versus the tracking capabilities already built into eTrips/M, including why one contractor is better to use over an ACCSP product available to all partners.

The MEDMR is not opposed to using the current eTrips software, but for our needs it would need to be modified to accept a Bluetooth® tracker. We are opposed to using the hardware’s built in tracking device because of accuracy, ability to change tracker ping or transmission rates, lack of real time tracking and past experiences with GPS units built into tablets. MEDMR is looking for a tracker that is an industrial solution, that is reliable, robust in the marine environment, works

everywhere, and something that the harvester has no need to touch or play with. The current eTRIPs software only works on an iPad and we feel that asking harvesters to install another larger piece of equipment on their vessel's dashboard or exposed to the elements in a smaller vessel will not work. The iridium tracker units we are proposing to use allow for real-time tracking that provide MEDMR with the most up to date information on a vessel's location. These location points would also be available to our Marine Patrol and the individual harvester through a secure login. The trackers also have a built-in safety feature that allows them to send a distress signal that would assist harvesters in case of an emergency.

- The proposal does not outline who would own the software code built from this project. Is it Maine's intent to continue with the current practice of all software code remains under the ownership of the ACCSP?

MEDMR intends to follow all of the current by-laws outlined by ACCSP. Code ownership was not included in this proposal because MEDMR felt that those requirements would be addressed during the RFP process.

- The budget calculates the approximate ongoing cost to fishermen at \$232/month after the purchase of the RockSeven unit. Have harvesters been surveyed to collect feedback on the monthly reoccurring charges that they may be burdened with and if so, what feedback has been received.

MEDMR did speak with harvesters and the general consensus was if they were allowed to choose their fishing days, they were willing to pay for this system because of what it costs them to miss a day of fishing. This final proposal recalculated the total service costs by fishery. In the pre-proposal MEDMR used the calculations provided by RockSeven that calculated both scallop and urchin fisheries using the same seasonal length. Each fishery has a unique season and the final budget figures included in this proposal account for each fishery's individual season. The new costs are approximately \$100/month for sea urchin harvesters and \$141/month for scallop harvesters.

- The request award period covers more than a single year. This should be modified for a single year only.

MEDMR has modified the proposal to fit the project into a single year. We originally proposed two years to account for when funds would be available and when our sea urchin and scallop seasons occurred. The sea urchin season in Maine typically starts in September and the scallop season starts in December. We were hoping we could use the extra time before the season started for testing programs and fixing any bugs. We are now proposing that we will start the process in the late spring and have a product ready to test by late summer/early fall when the sea urchin season starts.

- Were developers contacted to come up with the current numbers in the proposal? If not, how were the numbers for development determined?

MEDMR did reach out to vendors we have worked with in the past. The vendor that we propose to supply the trackers and transmission package are the providers of the three trackers currently deployed. The MEDMR reached out to the two vendors that are currently providing software support for their two swipe card programs. One of the vendor's budget figures was included in this proposal. The second vendor was not contacted early enough to allow them to provide budget

figures before the pre-proposal was due. MEDMR would insist that a RFP be issued to allow any vendor to bid on the creation or modification of the program(s) being proposed.

- Is one month of monitoring sufficient for coverage? How long is a harvesting season open and how long does it typically take to fill a quota?

This proposal would require monitoring for the entire sea urchin and ME inshore scallop seasons. The typical sea urchin season starts in September and concludes in March. The typical scallop season starts in December and concludes in mid-April. There are currently no fixed quotas in these fisheries. We would require any harvester participating in this pilot program to be monitored for the duration of their season.

- \$80,000 in indirect is substantial; can ME DMR reduce by limiting indirect to contractor costs, and not Hardware or Satellite Transmission fees?

Currently the MEDMR does not have another source of funding for any additional equipment or fees. We have revised our current budget along with the indirect cost waiver to bring our indirect cost percentage from 32.17% down to 25%. The indirect cost from the pre-proposal to this final proposal has dropped from \$79,638 to \$70,559 for a savings of just over \$9,000.

- Indirect rate letter is associated with NFWF proposal, not ACCSP proposal. Please explain or correct.

This has been corrected. Please see page 23 for the correct indirect rate letter.

- In-kind: Is ME DMR paying fishing vessels \$680,000 total to participate in the project? Would vessels refuse to participate pro bono? More detail is requested to clarify how vessels cost would be covered.

MEDMR is not paying vessels for their time to participate in this proposal. Title 2 CFR 200.306 section e, f and j covers the volunteer use for in-kind contributions (<http://www.ecfr.gov/cgi-bin/text-idx?SID=c16296aefef71d582e0634cf6658cf1&node=2:1.1.2.2.1.4.29.7&rgn=div8>). When MEDMR used the FEMA Schedule of Equipment Rates we chose the smallest of their "boat, tow" available and for one hour per fishing day. We felt that using the entire time the vessel could fish would not be appropriate; however, one hour of their fishing day was a satisfactory estimate of the amount of time they would spend with such detailed reporting.

- The potential technology transfer to other partners is apparent. However, justification should be provided how all ACCSP partners benefit from the data collected? For example, ASMFC does not assess or manage scallop or urchin. Benefits can be seen for the NEFSC and NEFMC as groups responsible for scallop assessment and management.

All partners would benefit because the program being developed would work for any fishery that partners determine would require more accurate and timely reporting. MEDMR chose these two fisheries because the fisheries management practices we want to implement require more timely and accurate data along with more spatial data. MEDMR implemented rolling closures for our inshore scallop fishery starting with the 2012-2013 fishing season and having access to the data this project could provide would allow for better management of these rolling closures and could allow for more opportunities for harvesters within these fisheries.

- ACCSP new projects are intended as pilots, to “prime the pump”; this project has already been piloted, albeit only on 3 vessels. If problems identified in ME DMR funded pilot have been addressed, why is further piloting needed on ACCSP funds? Why can’t DMR fund and start full implementation?

MEDMR has only piloted a swipe card program and a very limited (three vessel) tracker program. This proposal includes an electronic harvester reporting component that links to a tracker program. The harvester reports and dealer reports would be linked based on the “TRIP_ID” created in the harvester reporting program. The linking of harvester reporting with trackers linked to dealer reports has not been piloted by MEDMR. We have piloted each component on its own and harvester reports linked to trackers with little success in the past; however, we have not piloted all three components at the same time. Currently MEDMR does not have the funds to pilot this program. We have asked for ACCSP funding because this program if successful could benefit other partners who would like to take advantage of this tool for fisheries management.

- How is the harvester program creating the trip ID in this new program and how would the harvester provide the dealer the trip ID at the point of sale to enter into the dealer report that would be reported through the swipe card program. The dealer data is then appended to the harvester report through the trip ID? More information should be provided on this happens? How will this project mesh with the Fisheries Dependent Data Visioning project currently underway?

We envision multiple ways that harvesters could provide their “TRIP_ID” to the dealers. Harvesters could receive their code as a QR code, barcode or numerical code generated by the harvester reporting program. Another option would be to have the dealer reporting program search the SAFIS database for the harvester’s report and automatically append records to the harvester report. The last option would be the most seamless but would take considerable testing and coding to achieve. If the harvester reporting program were to supply a code that could be scanned by the swipe card program it would help remove any data entry error.

This project addresses the priorities outlined under the Fisheries Dependent Data Committee (FDDC), the FDDC Modernization Initiative, the Electronic Monitoring Initiative and Electronic Vessel Trip Reports. This proposal will help promote integration of current and future reporting programs to better ensure that the data from a harvester reported trip is better aligned with a dealer reported trip by linking them at the time a dealer report is created, using the automated TRIP_ID. Moving harvester and dealer reporting into a mandatory electronic format and having a link between the two (along with the tracker component for location information) would provide MEDMR and other ACCSP Partners with one of the most accurate and powerful reporting systems available.

- This pilot program will first be deployed to 40 state licensed sea urchin and scallop harvesters. Are the scallop harvesters also federally permitted? Will this cause duplicate reporting by the participants? Is this part of the Swipe Card subgroup’s discussions?

MEDMR has not yet determined the 40 vessels that would participate. It would be our intention to not include any harvester with federal reporting requirements at this time unless the harvester reporting software utilized by this pilot project meets NOAA’s electronic reporting guidelines.

- Do the harvesters that have Locus Traxx also have VMS units as part of this project? What is the impact on the vessels if they are equipped with both units?

The harvesters that had the Locus Traxx units installed on their vessels are no longer using Locus Traxx. Of the three vessels that had the RockSeven trackers installed this past winter, two had a VMS system on board at the same time. No impacts were observed with both units being installed that MEDMR is aware of.

- What is the proportion of the scallop and urchin fisheries compared to Maine's overall fisheries?

Traditionally Maine's sea urchin and scallop fisheries were winter supplemental fisheries. Maine's largest fishery is lobster by a large margin. If we remove the lobster values from our landings, both scallop and urchin are top ten fisheries in both pounds and value. Without accounting for lobster, these two fisheries comprise approximately 9% of the total value (approximately \$10 million) and approximately 4% of the total landings (5.3 million live pounds) for 2015. Both of these fisheries have a higher value per pound (\$2.78/lb for sea urchin and \$12.70/lb for scallop meats) than the average price of all species combined (\$2.23/lb).

- For a pilot project, 40 vessels seems to be a lot. May want to consider scaling down for better management if issues arise.

MEDMR is viewing this as twenty vessels per fishery which we feel are very manageable. The sea urchin and scallop fisheries have their own seasons and the seasons do not completely overlap. The urchin fishery starts in September while the scallop fishery starts in December. This will provide MEDMR with three months to test the programs and trackers on the first 20 vessels in the program to work out any bugs. MEDMR feels that to provide the amount of data needed to determine if the project was a success or not we will need at least 20 vessels for each fishery.

- Better coordination with the RI Party and Charter Boat Association should be done because this group successfully used eTrips/M to move a wind farm and cable-laying by proving harvest impact.

MEDMR read the final results of the RI Party and Charter Boat Association project. The success of that project was great and if approved we would certainly look into communicating with them to discuss any lessons learned.

- Page 5 (now page 12): states "...preferred to use their own personal smartphone and not have to have a large tablet installed on their vessel." How big are the RockSeven units compared to an iPad and will there be any issues mounting these systems in such a small boat?

The RockSeven units are 130 mm in diameter and 50 mm high. They have two different mounting platforms (Page 27 shows the RockFleet unit with a pole mount) that allow for the mounting on a pole or flat surface. The unit would be mounted to the top of a cabin or if the vessel does not have a cabin it would be mounted to a location that would be out of the harvester's way using one of the two mounting options. The units are waterproof and could be submerged up to 5 meters permanently. The RockSeven unit is only used to track the harvester's position and would not require an iPad to be installed on the vessel to track location. There are no anticipated mounting issues based on communications with the company. For further details on the product please visit RockSeven's RockFleet website (<http://www.rock7mobile.com/products-rockfleet>) for more in-depth information.

- Page 7(now page 14): Figure 5; Provide clarification of the user-defined speed range including who the user is and why this is needed.

The screen shot on page 14 figure 5 shows a multi colored bar at the bottom of the white box. This is the speed range bar. In the screen shot the bar is broken down by color; 0-2 kts is black, 2-6 kts is purple, 6-10 kts is teal, 10-15 kts is yellow and greater than 15 kts is red. All users (fisheries managers, fisheries scientists, harvesters, Marine Patrol) are able to change the speed ranges to get a more accurate determination of fishing activity and area, in order to differentiate between harvesting activity and transiting (steaming). The reason a dynamic interface is needed is because of the different ways of fishing for the same species and the differences in the areas where those species are fished. In both sea urchins and scallops we have divers and draggers. In looking at a diver's harvesting time we would want to look at a vessel speed range of 0-1 kt to determine active harvesting (because the vessels are stationary during the actual harvest time). If we wanted to look at a dragger's harvesting time it would dependent on the fishery, harvest location and the fleet makeup. One example would be in the Cobscook Bay area the towing speed would have to be looked at differently than in another part of the state because of the major difference in environmental conditions, fleet makeup and available fishing grounds. Sea urchin draggers and scallop draggers do not harvest the same way. Each fishery poses the potential to drag on different substrates which would require the need to change the speed ranges to provide the end user with the information they are looking for. Sea urchin draggers typically harvest along rocky bottom requiring a slower towing speed than the sandy areas where scallops are dragged. The ability for users to define the parameters of these speed boxes for different areas and fisheries will provide MEDMR and harvesters with more accurate data and more confidence in management decisions. The tracker program utilizes these speed boxes to analyze large quantities of data into a more user friendly dataset (please see figure 6 on page 14). By looking at the results of the speed box analysis it would provide the end users with time spent harvesting and time spent in transit.

- Page 8 (now page 15): states "Current API's would need to be modified or created as well to accept these different data feeds." Clarify which API's would need to be modified and what modifications would need to occur.

The API creation/modification would be determined by who stores all of the tracker data. Currently ACCSP has API(s) that accept harvester and dealer data feeds. These API's would need to be looked at by the programmers to determine what if any modifications would need to be made. MEDMR assumes that the current dealer and harvester API's would need modification; however, until the harvester and dealer programs are complete, what modifications are needed are hard to assess. If it is the desire of ACCSP to store all of the tracker data, there would be the need to create or modify the harvester API's to accept these data.

- Page 8 (now page 16): Who has access to the tracking data for the harvest and is that a confidentiality issue?

Only individuals that currently have access to MEDMR confidential data would have access to all of the tracker, harvester and dealer reported data. The individual harvesters would also have real-time access to all of their personal harvester and tracker data (but not other harvesters' data).

- Page 8 (now page 16): 2nd paragraph; states "only one point" would be stored in the current SAFIS harvester database per report. Will all efforts always take place in one statistical reporting area? If not, would this one point be stored across multiple efforts in different areas?

The data submitted through the harvester reporting tool of this pilot project would remain unchanged from what is currently being submitted. Currently only one location is collected per effort and with this new pilot project that would remain the same. The difference would be that

each effort submitted would be linked to another dataset that contains all of the tracker information (including GPS coordinates and speed) that would provide end users with a better picture of where the harvesting took place on a finer scale currently not available.

- Page 8 (now page 16): 3rd paragraph; the utility of the tracking data in ocean planning is mentioned. More discussion is requested on how this will be better than what can already be provided through the functionality in eTrips/M.

MEDMR does not see any immediate added value for ocean planning over what is being proposed to what is currently available through eTrips/M. The intended focus of this proposal is to create a pilot project that collects the same dealer and harvester reported data (but completely electronic) but linked to a tracker to provide MEDMR with the most accurate location data possible. Using data from this pilot project for other purposes such as dredge projects or wind farm locations would be a byproduct; however, a very important byproduct that would not require real time reporting.

- Page 9 (now page 16): The proposal implies spatial harvest data are important, with evidence provided on this page regarding closure lines; interactions with secondary industries (aquaculture leases) are also described; is there additional importance of spatial data to scallop and urchin fisheries themselves? Please provide more background on how the fishery is managed (e.g., rotational area closures?) to further justify the need for spatial data.

Scallops prefer specific substrate types (sand/gravel bottom) and exist in patchy distributions along the coast. Spatial information gathered from this project will help to identify areas which are spatially important regarding the scallop resource and fishery itself. This information can be utilized to ensure that rotational areas are adequately configured in the overall framework to ensure there is available fishing opportunity in each rotation for the fleet. The spatial data are also important in better understanding where the fleet is fishing and how much fishing pressure has occurred in discrete areas, to ensure that closures are targeted in areas needed, and do not encompass too broad an area.

As for rotational management, MEDMR implemented that program in the 2012-13 season and will be moving into our fifth year with this upcoming season. Originally, spatial management was implemented in the fishery in 2009 when 13 areas along the coast encompassing 20% of coastal waters were closed for three years to fishing to allow the biomass to rebuild.

Maine's sea urchin fishery has been managed since the mid-1990s by a succession of more and more restrictive input controls, including shorter and shorter fixed seasons, closed entry, and the division of the state's coastline into two exclusive fishing zones. More recently, the DMR has implemented a daily individual (diver) or boat (dragger) catch limit. But given the past history of individual ledges "flipping" from urchin-hospitable to inhospitable stable states due to overfishing, researchers (e.g. Johnson *et al.* 2012, 2013) point out that the fishery risks losing productive habitat unless it is managed at a finer spatial scale. Fine scale information on harvest removals is currently lacking. Data provided by harvesters on monthly logbooks has been of dubious quality, and is not timely. With tracker data, DMR could implement more appropriate management strategies.

The primary assessment tool for the urchin fishery is an annual dive survey. Adequately surveying the entire coast of Maine has been a challenging and expensive endeavor. Better data on fishery removal locations would help us pinpoint survey effort to better monitor habitat shifts and population trends.

Accurate harvest location data would also be useful in other areas, such as estimating dredge project impacts, and other marine siting issues which can impact this fishery, which is generally conducted at 5-15 meter depths.

Johnson, T.R., J. A. Wilson, C. Cleaver, and R. L. Vadas. 2012. Social-ecological scale mismatches and the collapse of the sea urchin fishery in Maine, USA. *Ecology and Society* 17(2):15. <http://dx.doi.org/10.5751/ES-04767-170215>

Johnson, T.R., J.A. Wilson, C. Cleaver, G. Morehead, and R. Vadas. 2013. Modeling fine scale urchin and kelp dynamics: implications for management of the Maine sea urchin fishery. *Fis. Res.* 141:107–117. <http://dx.doi.org/10.1016/j.fishres.2012.05.008>

- Page 10 (now page 18): states “...create or modify swipe card programs...” There will be a large difference in time and funds needed for this project depending on whether swipe card programs need to be created or modified. Please clarify this.

Currently MEDMR is utilizing two swipe card programs. Either of these swipe card programs would require modifications (such as requiring the input of a harvester “TRIP_ID”). It is the intent of MEDMR to modify current programs to meet the needs of this pilot project. MEDMR would require that the current tracker tool be modified based on past experiences to better serve the needs of this program moving forward. The more filters and user defined options to manipulate the data the more powerful a management tool this becomes. Modifications would also be required to current electronic harvester reporting software (eTRIPS for instance) and would need to work on all three major platforms (iOS®, Android® and Windows®). The electronic harvester reporting software would also need to be modified to accept a Bluetooth connection with the RockSeven RockFleet tracker units. These units provide a more accurate location over the built-in GPS units found on most phones and tablets.

- Page 10 (now page 18): states that ME DMR will be working with ACCSP staff, has this been coordinated? On the Joint Operations/Advisory call it was stated that there is no staff time or money in the ACCSP budget to dedicate to this project and it does not appear that there is money in this proposal budget for ACCSP staff time. Please clarify this.

MEDMR had discussed this project with current ACCSP staff before the proposal was submitted. MEDMR did not include any money for ACCSP staff time in this proposal because we have not done so in the past and were unaware this was a requirement. If it is the wish of ACCSP to have MEDMR include staff time and money into our budget we will certainly do so.

Sincerely,

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FY17: Creation Of a Fully Integrated Harvester and Dealer Reporting Tool with Trackers for Maine's
Urchin and Scallop Fisheries **(Revised)**

Total Cost: \$352,794 [not including the NOAA administration fee]

Submitted by:

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Applicant Name: Maine Department of Marine Resources (DMR)

Principal Investigators: Robert Watts, Marine Resource Scientist
Lessie L. White Jr, Marine Resource Scientist

Project Title: Creation Of a Multi-Point Reporting Tool with Trackers for Maine’s Urchin and Scallop Fisheries

Project Type: New Project

Requested Award Amount (without the NOAA administration fee): \$352,794

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

Objectives:

Timely and accurate landings and spatial data are essential for fisheries management, particularly for fisheries that are in the early stages of rebuilding. Using the firsthand knowledge the Maine Department of Marine Resources (MEDMR) has with swipe cards and trackers, there are great benefits to connecting harvester and dealer reporting to tracker hardware. The MEDMR would like to create a pilot project that would test a reporting and tracking program on 40 separate vessels (20 scallop and sea urchin harvesters each). Once created, this technology would be available to all ACCSP partners.

This project, if funded, would pilot the creation of a comprehensive reporting tool that allows harvesters to report electronically, utilizing an electronic harvester reporting program that communicates with a tracking device via Bluetooth that collects the harvester’s spatial information. The harvester program would then create a “Trip ID” (either a QR code, barcode or numerical code) that the harvester would provide their dealer at the point of sale to enter into a dealer report (for this pilot program the dealer would report through a swipe card program). Once the dealer submits a report, all associated landings reported by the dealer would be appended to the harvester’s trip report (via the “Trip ID”). This reporting tool will ensure that all dealer and harvester reports are linked in a way that is currently not possible. The MEDMR wants to add the tracking component to harvester reporting to increase the accuracy and number of location and effort points collected per trip. Trackers are used to provide fisheries managers and enforcement officials with the most accurate location and effort information; coupling with electronic harvester reporting would provide fisheries managers and scientists with the most accurate data needed to make timely fisheries management decisions. The DMR will use our past experiences with tracker equipment and software along with our swipe card experiences to build a program that will provide the most high-quality data possible to fisheries managers and simplify the reporting process for both dealers and harvesters. This pilot program would first be deployed to 40 state licensed sea urchin and scallop harvesters (20 each). If this pilot project proves effective, it is the desire of the MEDMR to move forward with more harvesters. If successful this program would benefit and be available to all partners.

Need:

The Maine inshore scallop and urchin fisheries represent traditional fisheries on the Coast of Maine. In 2015 there were 297 harvesters that possessed 308 commercial sea urchin licenses and 622 harvesters possessed 635 commercial scallop licenses. Conducted exclusively in State waters, these small-boat fisheries have operated in winter months and are generally considered supplemental fisheries at a time of year when the lobster fishery catch is at a minimum. Left largely unregulated, the scallop and urchin fisheries crashed in 2005 (figures 1 and 2), initiating a new series of regulations intended to rebuild fisheries that had been in decline over the past two decades. The usefulness of managing invertebrate species at fine spatial scales has been recognized for some time, but obtaining accurate and timely harvest locations in these two fisheries has been difficult. MEDMR has recently

implemented rotational closures and limited access areas for the state’s sea scallop fishery, but finds monitoring removals on small temporal and spatial scales to be highly labor-intensive. The MEDMR is also striving to find the appropriate spatial scale for assessment and management of its sea urchin fishery. It has become clear that current data collection methods are not adequate to effectively manage these fisheries. The MEDMR finds itself in an unsustainable position. MEDMR is spending an inordinate amount of staff resources to monitor, enforce and manage the scallop and urchin fisheries. We propose to further develop our limited vessel tracking program that has established methodologies to quantify fishing intensity, and relate this to fishing removals relative to the underlying resource. The next step is to connect this tracking ability to harvester and dealer reporting currently available.

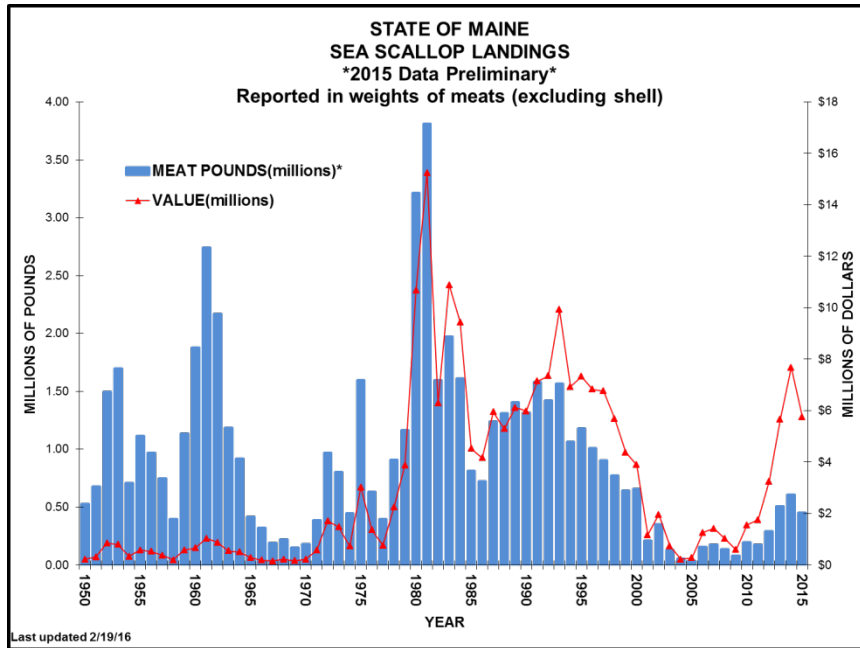


Figure 1: Historical Landings of Sea Scallops in Maine from 1950 to 2015*

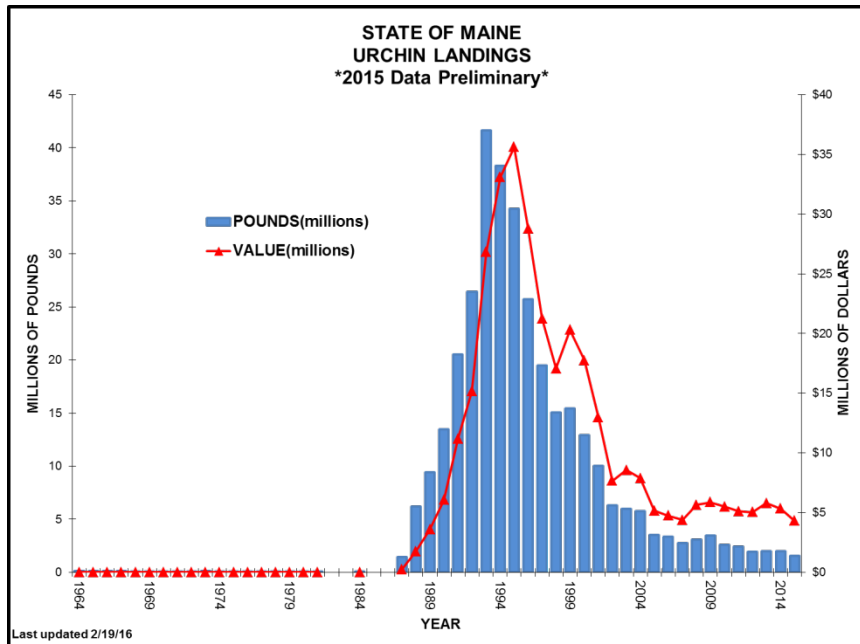


Figure 2: Historical Landings of Sea Urchins in Maine from 1964 to 2015*

Maine was the first state on the east coast to require a fishery to use swipe card reporting. For the past three years the “Elver System” has proven to be a reliable reporting and management tool that has allowed the MEDMR to implement individual fishery quotas (IFQs) for the first time. Starting with

the 2016-2017 sea urchin season the MEDMR will require that all sea urchin dealers (12 dealers for 2015) report through eDR Mobile (the swipe card program jointly developed with ACCSP and MADMF). While having dealer data in a timely manner is important, the best solution would be to also collect harvester reports electronically and create a mechanism that links the harvester and dealer reports with tracking hardware. Having all three programs linked would create a very powerful data collection tool that could provide insights into current fisheries practices not currently captured through just harvester and dealer reporting.

During the 2012-2013 scallop and shrimp season, the MEDMR piloted a project with Locus Traxx that included electronic harvester reporting linked to a tracker. This project originally included 30 harvesters but delays prevented all but 14 harvesters from participating. Participants that volunteered to use this new electronic reporting tool were still required to fill out paper reports for validation. This project was tablet based using cellular service to transmit harvester reported data and tracker data (tracker data had a satellite backup that did not appear to work as advertised) which proved to be problematic. Harvesters noted that poor cellular service prevented them from submitting reports or would indicate the report was submitted when in fact it was lost in the communication between tablet and server. Harvesters also complained that when they were still on their trip the program would indicate that their trip was done when in fact they were midway through and then have to log back in to the program and start a “new” trip and all data collected previously would be reported as a separate trip. The harvesters involved with the project were very excited to be able to report electronically and not have to fill out paper reports. Even though this pilot project had its problems, many harvesters indicated if the reporting app was easy to use and reliable they would prefer to report electronically than with paper reports. Many of the harvesters expressed to the MEDMR that they would have preferred to use their own personal smartphone and not have to have a large tablet installed on their vessel. Many lessons were learned during this project and it is the desire of the MEDMR to use those lessons to create a more successful project this time.

Harvester reports provide only a general location of where the boat was fishing, and usually only one point per trip. In the winter of 2016 the MEDMR piloted a small tracker project (three vessels) in the scallop fishery. The tracking results of this project were much improved when compared to the Locus Traxx pilot project. These vessels had trackers (purchased from RockSeven) installed on their vessels and were tracked at a baseline position fix taken every minute with an iridium transmission once every 15 minutes while out fishing. The accuracy and amount of data collected was eye opening and showed how much inaccuracy there could be in harvester reported effort and location information (Figures 3-6). Because harvester reports only allow for the reporting of one single location for a trip, many of the areas that harvesters are fishing are not recorded but all the efforts are linked to that one general location. Using a tracker, all effort and location information are collected and mapped out for fisheries managers to view in a near real-time basis. The need to accurately identify location and effort information where harvesters are fishing is important for fisheries managers, fisheries scientists and law enforcement.

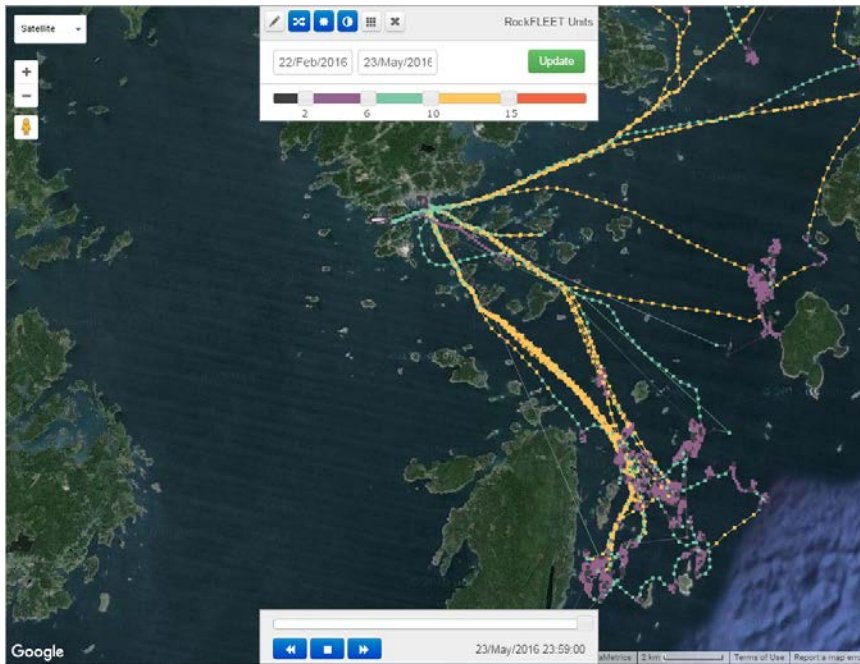


Figure 3: Screen shot from RockSeven showing each individual position fix and track at an average speed for all vessels in the area. The colors of the tracks are coded based on the user-defined speed range at the top of the screen.

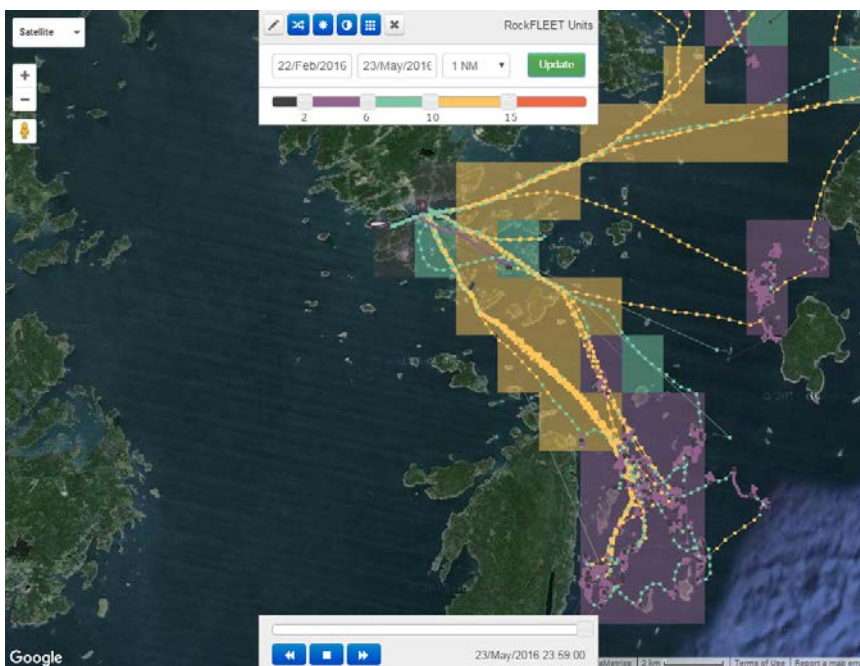


Figure 4: Same screen shot as Figure 3, but with color coded boxes based on average speed of all position fixes from all vessels in the area. The colors of the boxes are determined by the user-defined speed range.

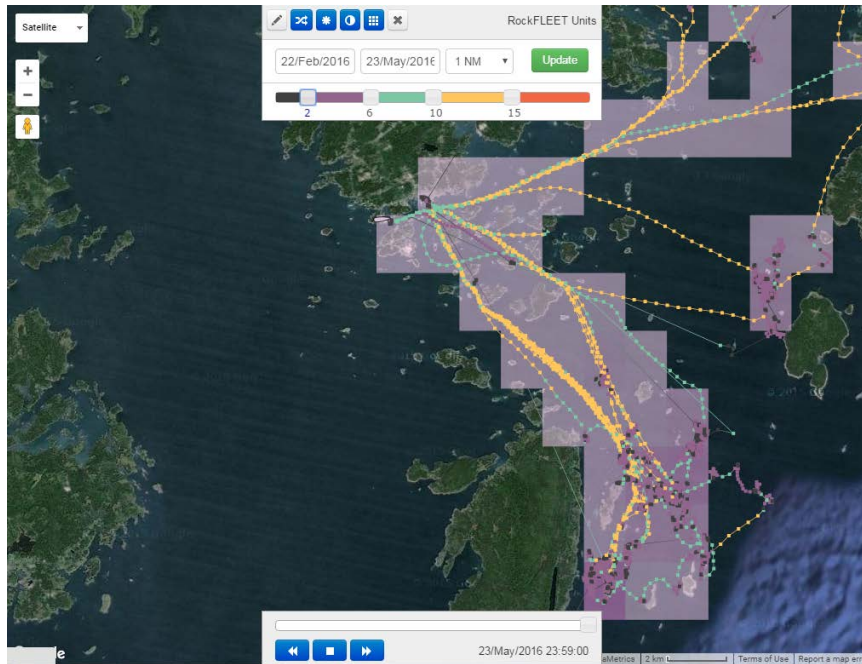


Figure 5: Same screen shot as Figure 4, but with color coded boxes based on time spent at user-defined speed range of all position fixes from all vessels in the area. The darker the shading of the boxes represents more time spent at the user-defined speed range.

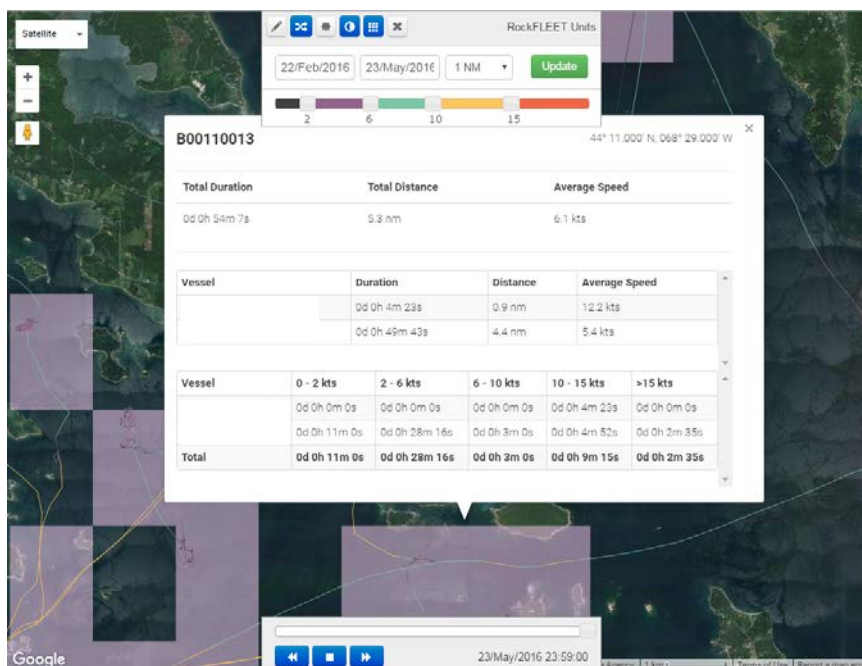


Figure 6: Same screen shot as Figure 5, but with individual analysis by grid. The data are then broken down to an individual vessel level with user-defined speed ranges.

Figure 5 shows a multi colored bar at the bottom of the white box. This is the speed range bar. In the screen shot the bar is broken down by color; 0-2 kts is black, 2-6 kts is purple, 6-10 kts is teal, 10-15 kts is yellow and greater than 15 kts is red. All users (fisheries managers, fisheries scientists, harvesters, Marine Patrol) are able to change the speed ranges to get a more accurate determination of fishing activity and area, in order to differentiate between harvesting activity and transiting (steaming). The reason a dynamic interface is needed is because of the different ways of fishing for the same species and the differences in the areas where those species are fished. In both sea urchins and scallops we have divers and draggers. In looking at a diver's harvesting time we would want to look at a vessel speed range of 0-1 kt to determine active harvesting (because the vessels are stationary during the actual harvest time). If we wanted to look at a dragger's harvesting time it would

dependent on the fishery; harvest location and the fleet makeup. One example would be in the Cobscook Bay area, the towing speed would have to be looked at differently than in another part of the state because of the major difference in environmental conditions, fleet makeup and available fishing grounds. Sea urchin draggers and scallop draggers do not harvest the same way. Each fishery poses the potential to drag on different substrates which would require the need to change the speed ranges to provide the end user with the information they are looking for. Sea urchin draggers typically harvest along rocky bottom requiring a slower towing speed than the sandy areas where scallops are dragged. The ability for users to define the parameters of these speed boxes for different areas and fisheries will provide MEDMR and harvesters with more accurate data and more confidence in management decisions. The tracker program utilizes these speed boxes to analyze large quantities of data into a more user friendly dataset (please see figure 6 on page 14). By looking at the results of the speed box analysis it would provide the end users with time spent harvesting and time spent in transit.

Based on the success of swipe card reporting and the desire of the MEDMR to increase harvester's access to electronic reporting it makes sense that the next step is to use the technology available to collect large quantities of data in the most timely and cost effective method possible. The MEDMR would like to utilize the spatial data collected through this pilot project to better develop our scallop and urchin survey programs by indicating where in-season surveys should focus their attention — on areas where habitat supports increased fishing effort and recruitment. The overall data that MEDMR would collect through this program could be validated in close to real-time compared to the current collection of trip level data on a monthly basis. This program would benefit law enforcement because the tracking program would provide the ability to determine if harvesters are actively fishing or just traveling through a closed area, and provide a last known location should the vessel come under distress or be missing. All of these benefits could help other partners if they choose to use this program.

We would like to partner with RockSeven, a market leader in Iridium SBD that designs and manufactures their own tracking equipment, writes the software which runs them and develops the reporting tools and mapping services. Iridium systems will provide more reliable transmissions as 66 orbiting satellites provide unlimited service around the world. If the proposed project is successful and statutory changes are made to make vessel trackers mandatory, the MEDMR will seek a provider through a competitive bid process building on specifications developed. At that time, funding responsibilities would be covered by a license surcharge or through dedicated in-state funding to the MEDMR.

The electronic harvester and dealer reporting programs would be required to work on all three major platforms (iOS®, Android® and Windows®) and be available on a tablet, phone or PC. Current API's would need to be modified or created as well to accept these different data feeds. Exactly which API's would need to be created or modified would be determined by who stores all of the tracker data. Currently ACCSP has API(s) that accept harvester and dealer data feeds. These API's would need to be looked at by the programmers to determine what if any modifications would need to be made. MEDMR assumes that the current dealer and harvester API's would need modification; however, until the harvester and dealer programs are complete what modifications are needed are hard to assess. If it is the desire of ACCSP to store all of the tracker data, there would be the need to create or modify the harvester API's to accept this data.

Results and Benefits:

Having a reporting system that links harvester data with trackers and dealer data allow for a streamlined reporting system that provides fisheries managers and fisheries scientists with the most timely and accurate catch and effort data. Adding a tracker component to harvester reporting will provide the MEDMR with a full scale picture of not only the exact location harvesters are fishing but

provide an insight into other fishing practices (tow time, fishing pressure estimates, ability to map suitable habitat) by running simple data analysis. Harvesters and dealers will benefit because their reporting requirements could potentially be fulfilled before the end of their day. Harvesters will also have fewer fields to enter and less chance for data entry errors and will no longer provide “general area” that was fished.

To complete a harvester report only one point would be stored in the current SAFIS harvester database; however, all of the tracker data would still be available. We anticipate that the one record stored along with the harvester report would be created from an algorithm within the tracker software that more accurately depicts where the harvester spent the majority of their fishing activity on that day. The data submitted through the harvester reporting tool of this pilot project would remain unchanged from what is currently being submitted. Currently only one location is collected per effort and with this new pilot project that would remain the same. The difference would be that each effort submitted would be linked to another dataset that contains all of the tracker information (including GPS coordinates and speed) that would provide end users with a better picture of where the harvesting took place on a finer scale currently not available.

Another benefit would be to more accurately record where harvesters primarily transit and actively harvest. This would be essential to determine the impact on fisheries if new cables need to be laid, wind farms want to lease bottom, or when aquaculture lease operations or dredge projects are proposed. Having a concise chart of fishing activity would provide all parties the information needed to determine the true impact of a proposal.

If fisheries managers are able to receive real-time data from both dealers and harvesters there is the potential to manage fisheries in a different way. Some fisheries are managed with a daily quota, a seasonal quota or days in/days out of a fishery. With the linking of electronic harvester reporting, trackers and swipe card programs, harvesters could potentially choose which days they fish or fill their entire quota in a longer or shorter amount of time. Electronic reporting also helps prevent unlicensed harvesters from fishing. In the elver fishery, after swipe cards were implemented, summonses for unlicensed fishing dropped from 271 in 2013 to less than 20 in the 2014 season and less than five in the 2015. If a swipe card is required to complete a transaction, the unlicensed harvester would not be able to sell their catch. If a harvester were required to report electronically, they would need a valid login to access their reporting system and a tracker to be in the fishery. For this pilot project, the only way a licensed harvester would receive access to electronic reporting, a tracker, and a swipe card would be through the licensing authority.

Scallops prefer specific substrate types (sand/gravel bottom) and exist in patchy distributions along the coast. Spatial information gathered from this project will help to identify areas which are spatially important regarding the scallop resource and fishery itself. This information can be utilized to ensure that rotational areas are adequately configured in the overall framework to ensure there is available fishing opportunity in each rotation for the fleet. The spatial data are also important in better understanding where the fleet is fishing and how much fishing pressure has occurred in discrete areas, to ensure that closures are targeted in areas needed, and do not encompass too broad an area.

As for rotational management, MEDMR implemented that program in the 2012-13 season and will be moving into our fifth year with this upcoming season. Originally, spatial management was implemented in the fishery in 2009 when 13 areas along the coast encompassing 20% of coastal waters were closed for three years to fishing to allow the biomass to rebuild.

Maine’s sea urchin fishery has been managed since the mid-1990s by a succession of more and more restrictive input controls, including shorter and shorter fixed seasons, closed entry, and the division of the state’s coastline into two exclusive fishing zones. More recently, the DMR has implemented a daily individual (diver) or boat (dragger) catch limit. But given the past history of individual ledges

“flipping” from urchin-hospitable to inhospitable stable states due to overfishing, researchers (e.g. Johnson *et al.* 2012, 2013) point out that the fishery risks losing productive habitat unless it is managed at a finer spatial scale. Fine scale information on harvest removals is currently lacking. Data provided by harvesters on monthly logbooks has been of dubious quality, and is not timely. With tracker data, DMR could implement more appropriate management strategies.

The primary assessment tool for the urchin fishery is an annual dive survey. Adequately surveying the entire coast of Maine has been a challenging and expensive endeavor. Better data on fishery removal locations would help us pinpoint survey effort to better monitor habitat shifts and population trends.

Accurate harvest location data would also be useful in other areas, such as estimating dredge project impacts, and other marine siting issues which can impact this fishery, which is generally conducted at 5-15 meter depths.

Law enforcement would benefit from this proposal as well. Tracker data could be used to determine if a vessel is actively harvesting or just transiting through a closed area. Trackers would also provide officials with the last known location should a vessel go missing.

Jericho Bay Scallop Closure Area (2015-2016 Season)

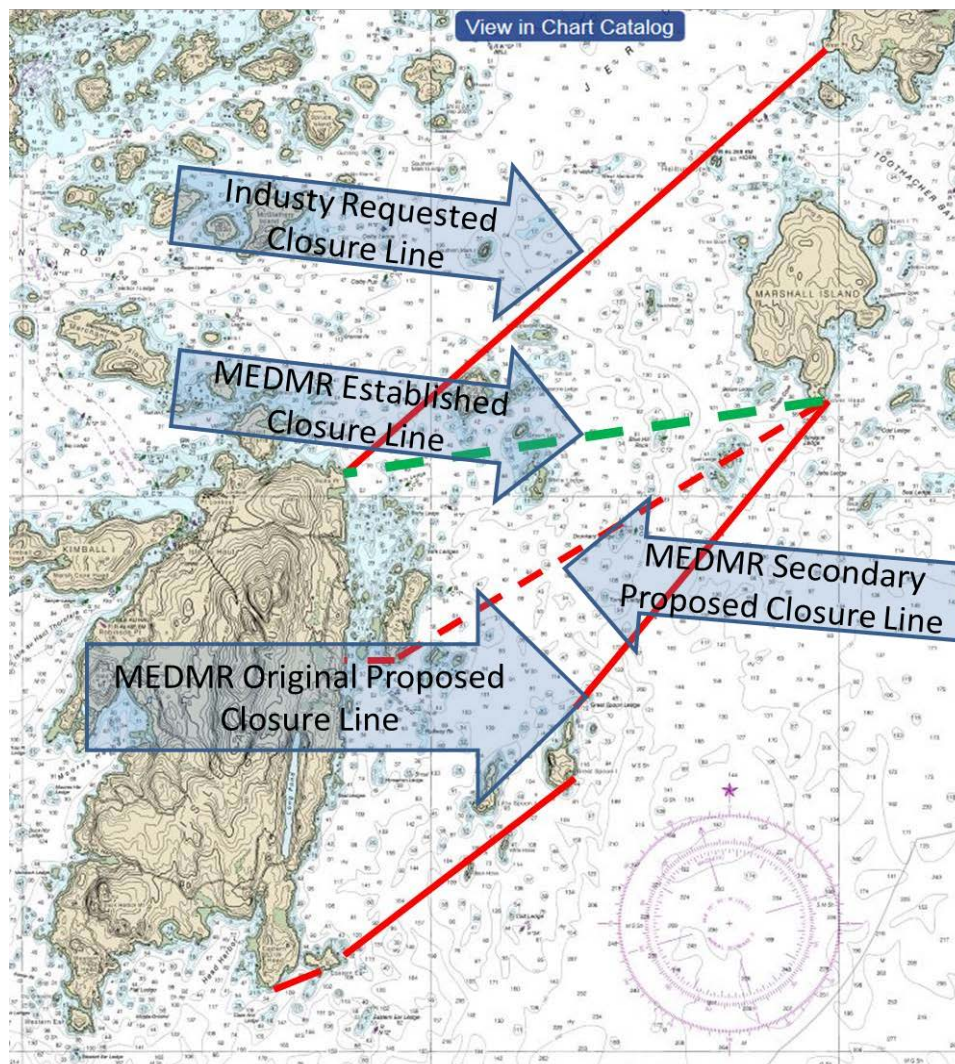


Figure 7. Jericho Bay Scallop Closure Area modifications based on limited tracker data availability.

MEDMR fisheries managers were able to use limited tracker data during the 2015-2016 season to close a smaller area of bottom to scallop harvesters. Managers used the real time tracker data from

two of the three vessels equipped with trackers to determine how much fishing pressure was occurring in the Jericho Bay, Maine area. The above chart has four lines. The line marked “MEDMR Original Proposed Closure Line” would have been the most conservative closure line that would have denied scallop harvesters the ability to fish for scallops inside this line. The uppermost red line marked “Industry Requested Closure Line” was what industry members requested MEDMR use as the closure line. The red dashed line marked “MEDMR Secondary Proposed Closure Line” was the original compromise between MEDMR and scallop harvesters for the Jericho Bay closure line. The green dashed line marked “MEDMR Established Closure Line” was the final compromise based on industry and Marine Patrol input for enforceability as well as looking at the MEDMR tracker data available at that time. Having tracker data available along the entire coast would allow the MEDMR to make similar less conservative industry friendly decisions based on more accurate and timely fishing location and effort information, therefore providing industry with more fishing opportunity.

This project will help MEDMR meet and exceed the data collection standards of ACCSP. All partners will benefit, as all data will be uploaded to ACCSP and many of the species landed in Maine have a broad geographic range which includes many other agencies in their management. Partners may also benefit from the technologies built from a more comprehensive reporting tool that connects harvester reporting with trackers and the dealer swipe card/mobile app project.

Approach:

Integration of electronic harvester and dealer reporting with trackers

The DMR and ACCSP will put out an RFP asking for companies to modify or build an electronic harvester reporting program that will communicate via Bluetooth with a RockSeven tracker and then build or modify an existing swipe card dealer reporting program to accept a “Trip ID” created from the harvester reporting program.

- Work with selected developer to create or modify electronic harvester and swipe card programs to accept the modifications outlined above (accept tracker and harvester “Trip ID”).
- Review progress of program development.

Outreach with industry to promote buy-in.

MEDMR staff will continue to work with industry members to explain the purpose and benefits of this reporting system. Staff will attend the annual Maine Fishermen’s Forum and have a presentation explaining the importance of real-time data collection and the importance of accurate reporting as well as displaying preliminary data by fishery. Staff will work with established industry organizations, such as the MEDMR advisory councils and dealer and harvester associations to reiterate the program goals and show results of this pilot project and how it benefits everyone. Staff will focus on explaining how integrating electronic harvester reporting, trackers and swipe card programs will streamline the entire industry’s reporting requirements and benefit the industry as a whole by allowing the MEDMR to gather more accurate data in a timely manner not currently available that will enable more informed management decisions.

Transmission of harvester and dealer data to ACCSP.

The swipe card program will send all harvester and dealer reported data to SAFIS. In each dealer data feed, the following fields are uploaded to the warehouse according to ACCSP protocols: supplier dr id, supplier dealer id, supplier trip id, supplier cf id, supplier vessel id, unload year, unload month, unload day, state code, county code, port code, primary gear, data source, data supplier, reported quantity, live pounds, dollars, disposition code, grade code, unit measure, species ITIS, market code, supplier action flag, dr seq id, fishing mode.

In each harvester data feed, the following fields are uploaded to the warehouse according to ACCSP protocols: trip.state, trip.port, trip.vessel_id, trip.trip_start_date, trip.trip_start_time, trip.trip_end_date, trip.trip_end_time, trip.trip_type, days_at_sea, trip.nbr_of_crew, trip.partner_vtr, efforts.trip_id,

efforts.effort_seq, efforts.distance_code, efforts.in_state, efforts.area_code, efforts.sub_area_code, efforts.local_area_code, efforts.latitude, efforts.longitude, efforts.ave_depth_in_fathoms, efforts.gear_code, efforts.lma_code, efforts.species_itis, efforts.gear_quantity, efforts.gear_sets, efforts.fishing_hours, efforts.hours_day_flag, efforts.gears_fishing, efforts.gear_size, catches.trip_id, catches.effort_seq, catches.catch_seq, catches.species_itis, catches.disposition_code, catches.reported_qty, catches.unit_measure, catches.sale_disposition_flag, catches.price, catches.permit_id, catches.date_sold, catches.market_code, catches.grade_code, catches.catch_source.

Geographic Location: Operations will be based out of Boothbay Harbor, Maine and the project will take place throughout Maine.

Milestone Schedule:

Task:	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
Create RFP for programming	X											
Contract with RockSeven for trackers	X											
Identify pilot participants	X	X										
Create/Modify current reporting software		X	X	X	X							
Test Software with industry					X	X	X	X	X	X	X	X
Make modifications to software		X	X	X	X	X	X	X	X	X	X	X
Industry outreach to promote buy-in	X	X	X	X	X	X	X	X	X	X	X	X
Semi-Annual report						X						X
Annual Report												X

Project Accomplishments Measurement:

The final goal of the project would be to have a fully functional comprehensive system that includes an electronic harvester reporting program that collects effort and location data through a tracker and then links the harvester report to a dealer report via a swipe card and a harvester supplied “Trip ID” that would be piloted with 40 harvesters (20 each in the sea urchin and scallop fishery) by the end of the grant period. Long term, it would be our intent to expand these reporting requirements to all harvesters and dealers within these and other fisheries as the MEDMR identifies a need. This program would be contracted, tested and any bugs fixed before the end of the grant period. The programs modified and incorporated during this grant period would be fully expandable to incorporate other mandatory reporting fisheries in the future.

Cost Summary: FY17: Creation Of a Fully Integrated Harvester and Dealer Reporting Tool with Trackers for Maine's Urchin and Scallop Fisheries			
Programmatic Cost		Description	Cost
	RockSeven RockFLEET integration with Reporting Tool	3 Weeks Work	\$13,000
	Dealer Reporting Modifications	Modification to swipe card program(s)	\$35,150
	Harvester Reporting Modifications	Modify electronic harvester reporting	\$28,250
	App Development	Creation of Android and iOS apps	\$91,200
	Server Modifications	API and database modificaitons to collect tracker info	\$45,000
	Integration with RockFLEET and mapping software	Programming to communicate with RockFLEET trackers and creation of mapping tools.	\$15,000
		Subtotal	\$227,600
Hardware Costs			
	RockFLEET units, with flat hull mounts	\$640/unit * 40 units	\$25,600
		Subtotal	\$25,600
Service Costs			
	RockSeven Monthly Service Fee	\$22.80/unit * 40 units * 7 months	\$6,384
	Satellite Transmission Fees	174,240 transmissions total @ \$0.13 each	\$22,651
		20 urchin vessels * 38 fishing days = 760 fishing days (FD)	
		760 FD *(48 transmissions @ 15 min + 6 trans @ 2 hours) = 41,040 total fishing day transmissions	
		3,480 Non-FD *(12 trans @ 2 hours) = 41,760 total non fishing day transmissions	
		20 scallop vessels * 70 fishing days = 1,400 fishing days (FD)	
		1,400 FD *(48 transmissions @ 15 min + 6 trans @ 2 hours) = 75,600 total fishing day transmissions	
		1320 Non-FD *(12 trans @ 2 hours) = 15,840 total non fishing day transmissions	
		Subtotal	\$29,035
		Total Program and Developer Fee	\$282,235
	Total Direct Costs		\$282,235
	Indirect Costs (25%)		\$70,559
	Total Award to DMR		\$352,794
DMR In-kind Contribution			
Personnel Cost		Description	Cost
	1 Bureau Marine Science Director	10%	\$13,124
	1 Scientist IV	10%	\$10,813
	1 Scientist III	25%	\$23,068
	1 Scientist III	10%	\$10,505
	1 Scientist II	10%	\$10,047
	1 Specialist II	10%	\$6,955
	2 Marine Patrol Lieutenants	10%	\$29,243
		Subtotal	\$103,756
Vessel Cost			
	Sea Urchin Vessels	20 vessels @ \$315/hr for 1 hrs/day for 38 days	\$239,400
	Scallop Vessels	20 vessels @ \$315/hr for 1 hrs/day for 70 days	\$441,000
		Subtotal	\$680,400
	vessel rates calculated from FEMA's schedule of equipment rates and only include		
	1 hour of harvester time (vessel is tracked 24 hrs/day): http://www.fema.gov/schedule-equipment-rates		
Equipment Cost			
	Swipe Card Encoder/Printer, ribbons, cleaning kit plus service agreement	2 - one for backup	\$8,000
	Swipe Card Reader (Apex II units)	200 @ \$375/unit	\$75,000
	(Star Micronics SM-T300i)	12 @ \$411/unit	\$4,932
	Swipe Cards	1500 cards @ \$0.25/card	\$375
		Subtotal	\$88,307
		Total In-Kind Contribution	\$872,463

Budget Narrative for Proposed FY17 Grant:

Programmatic Cost: RockSeven will need to be able program the RockFLEET tracker to communicate with the company providing the electronic harvester reporting program and estimated that will take three weeks of programming on their end. The other modifications to current harvester and dealer reporting programs will be needed as no current reporting software are able to do exactly what the MEDMR are requiring at this point. Any current electronic harvester reporting programs will need to be developed to work on all three major platforms (iOS®, Android® and Windows®). Server modifications will need to be made to accept the tracker data being sent through RockSeven so managers, harvesters, law enforcement and scientists will be able to view all location information along with the harvesters reported effort and catch information.

Hardware Cost: These costs are for the purchase of 40 RockSeven RockFLEET units to be installed on the 40 pilot program vessels.

Service Cost: These costs are for a monthly service plan that would be required to connect to RockSeven's network (similar to a cellular service plan). The satellite transmission fees are calculated based on a 15 minute ping but provides a position location each minute. Pinging the satellite every 15 minutes uses 1 transmission instead of 15 transmissions if we were to ping the satellite every minute cutting the number of transmissions by a factor of 15. It was calculated that all 40 vessels would use a maximum of 64,800 transmissions each month.

Indirect costs: The Department of Marine Resources has an indirect cost rate of 25%. See Attachment 2 (page 23) for the Negotiated Indirect Cost Agreement.

Attachment 2: Negotiated Indirect Cost Agreement

U.S. Department of Commerce
Office of Acquisition Management – Grants Management Division
1401 Constitution Ave., NW, HCHB Rm 6412
Washington, DC 20230, Attn: Indirect Cost Program

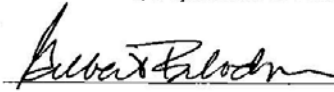
CERTIFICATE OF INDIRECT COSTS

This is to certify that I have reviewed the indirect cost rate proposal prepared and maintained herewith and to the best of my knowledge and belief:

- (1) All costs included in this proposal dated December, 2015 to establish indirect cost billing rates for July 1, 2015 through June 30, 2016 are allowable in accordance with the requirements of the federal awards to which they apply and OMB Circular 87, "Cost Principles for State, Local, and Indian Tribal Governments". This proposal does not include any costs which are unallowable as identified in the applicable federal cost principles. For example, advertising contributions and donations, bad debts, entertainment costs or fines and penalties.
- (2) All costs included in this proposal are properly allocable to federal awards on the basis of a beneficial or causal relationship between the expenses incurred and the agreements to which they are allocated in accordance with applicable requirements. Further, the same costs that have been treated as indirect costs have not been claimed as direct costs. Similar types of costs have been accounted for consistently and the Federal Government will be notified of any accounting changes that could affect the rate.
- (3) The indirect cost rate calculated within the proposal is 32.17%, which was calculated using an indirect cost rate base type of Modified Total Direct Costs. The calculations were based on actual costs from fiscal year July 1, 2014 thru June 30, 2015 to obtain a federal indirect cost billing rate for fiscal year beginning July 1, 2015.

Subject to the provisions of the Program Fraud Civil Remedies Act of 1986, (31 USC 3801 et seq.), the False Claims Act (18 USC 287 and 31 USC 3729); and the False Statement Act (18 USC 1001), I declare to the best of my knowledge that the foregoing is true and correct.

Organization Name: State of Maine, Department of Marine Resources

CFO Signature:  Date: 12/18/15

Name/Title Authorized Official: Gilbert M. Bilodeau, Director, Natural Res Ser Ctr

Dept Head Signature:  Date: 12/18/15

Name/Title Authorized Official: Patrick Keliher, Commissioner



Department of Marine Resources

INTEROFFICE MEMORANDUM

TO: FILE
FROM: PATRICK KELIHER, COMMISSIONER
SUBJECT: RATE USED FOR COST ALLOCATION
DATE: 6/3/2016

In accordance with OMB Circular A-87, the Department of Marine Resources has submitted to the U.S. Department of Commerce a departmental cost allocation plan for use during state fiscal year 2016 ending June 30, 2016. The indirect cost rate proposal is 32.17%. I am authorizing the use of the lesser rate of 25% to be used during this period.

ACCSP – Pre-proposal
FY17: Creation of a Fully Integrated Harvester and Dealer Reporting Tool with Trackers for Maine's Urchin and Scallop Fisheries

A handwritten signature in blue ink, appearing to read "P. Keliher", is written over a horizontal line.

Patrick Keliher, Commissioner

ROCKSEVEN

with Bureau of Marine Sciences

Fisheries Tracking Proposal (Extension)

Version 1.0 - 2nd June 2016



Table of Contents

Overview	3
Our Experience	3
<i>Why Iridium</i>	3
About the RockFLEET	4
Our approach to your project	5
<i>Tracking Data</i>	5
<i>From the fisherman's perspective</i>	5
<i>From a manager's, enforcement and science perspective</i>	6
Swipecard/Landing Integration	7
Costs	8
<i>Capital Expenditure</i>	8
<i>Example Running Costs (per month)</i>	8
Summary	8

Overview

We understand that The Bureau of Marine Sciences is looking for a new tracking solution, with 4 distinct goals in mind.

- 1) To provide data to allow science officers to assess the impact of fishing in certain areas.
- 2) To help enforcement officers ensure that fishing is carried out within terms agreed with the fishing fleets, avoiding conservation areas, depleted zones, and other key areas.
- 3) To provide fleet operators with a near real-time view of their vessels whilst at sea, as well as historic views.
- 4) To provide individual fishing boats with a view of their tracks on a near real-time and historic basis.

We have been running a trial with 3 devices for the last 6 months, and this proposal is for an extension to this trial, incorporating more vessels. We are also proposing to make the science data more useful by ‘tagging’ tracks with species type via integration with the swipe card landing system.

Our Experience

Rock Seven is one of the market-leaders in Iridium SBD. We are one of the few companies providing a full end-to-end service. That means we design and manufacture our own equipment, write the software which runs on them, develop and provide the reporting tools and mapping, and manage the airtime contracts. At any point, the buck stops with us. If you speak to our support staff, you’re speaking to the actual people who make put the units together - you won’t be passed over to a different company for support on any part of our system.

We provide tracking for a huge number of organisations - our devices are used for everything from Round the World yacht races, to police enforcement activities, NGOs across the globe & private security companies. We also sell and support individual units to the general public.

Why Iridium

We only make equipment which uses the Iridium satellite network. This is because of its reliability, cost, and security. Iridium satellites move in the sky, there are 66 in orbit, and they travel from horizon to horizon every 6 minutes. At any one time, with a clear view of the sky, a device should be able to see 2 or 3 satellites. Iridium covers the entire globe, including the polar regions.

Because the Iridium satellites move in the sky, the precise installation location of our tracking devices isn’t so important. Even if the device is mounted on one side of the boat (and part of the sky is obscured by the wheelhouse for example) then the signal will still be sent once an Iridium satellite moves into view.

Other satellite networks (such as Inmarsat) are geo-stationary, which means in your case that all of the satellites will be in the South. If a tracking device was on the North side of a boat, and its view of the sky to the South was obscured, a geo-stationary system wouldn’t be able to get a signal out.

Geo-stationary systems also have much bigger antennae, and use more power for each transmission, meaning they are less likely to have good battery backup options.

About the RockFLEET

The RockFLEET is primarily a powered tracking device, but it has a small backup battery inside to allow it to work if power has been cut (can transmit once per hour for up to 2 weeks on battery power).



The RockFLEET unit, mounted on a tender vessel

The RockFLEET is ideal for permanent installations, and is what we would recommend as the ideal solution for your project. Because it is wired into the boat's power (normally the ignition feed) it can react to the power being turned off, and automatically reduce the tracking frequency as you have seen.

It has a simple two-wire cable (red and black cores) which can be wired into a 12/24v DC power supply on board the vessel.

There are two mounting options - a rail mount (as shown above) or a flat-to-deck mount.

Our approach to your project

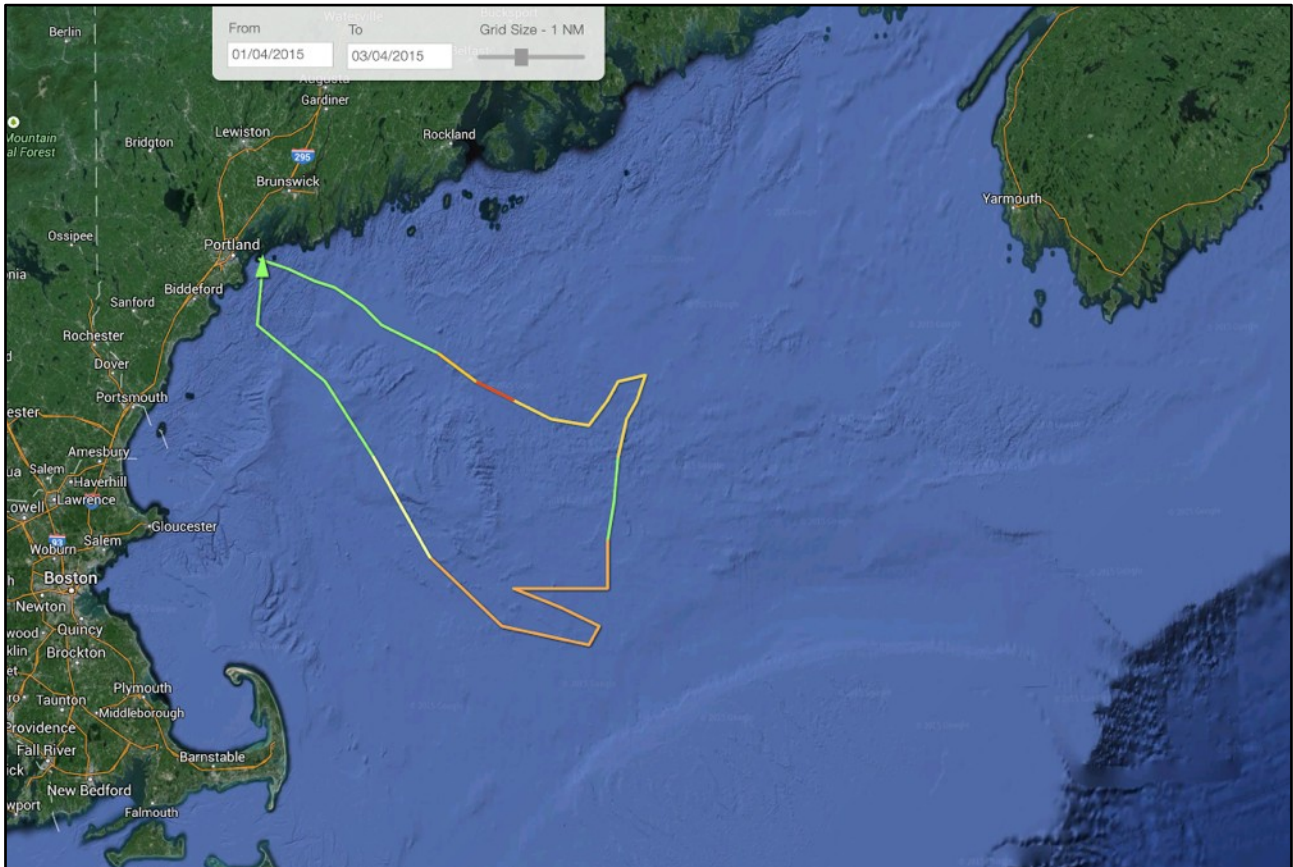
Tracking Data

RockFLEET units can transmit at various rates. The fastest the units can record GPS fixes is every 5 seconds and transmit once per minute, the slowest is once every 12 hours. It is understood that for the extension project you would like continue with the same transmission frequency as used to- date, obtaining GPS fixes once per minute, and transmitting every 15 minutes. This gives a balance between cost and accuracy.

All data is sent over Iridium satellite (which has truly global coverage) and is stored in our management system for later review. The average latency (time between the unit sending data, and it being received in our system) is typically about 10 seconds. In reality, if you were collecting positions every minute, and transmitting them every 15 minutes, this would result in the management view being a maximum of 15 minutes and 10 seconds off real-time.

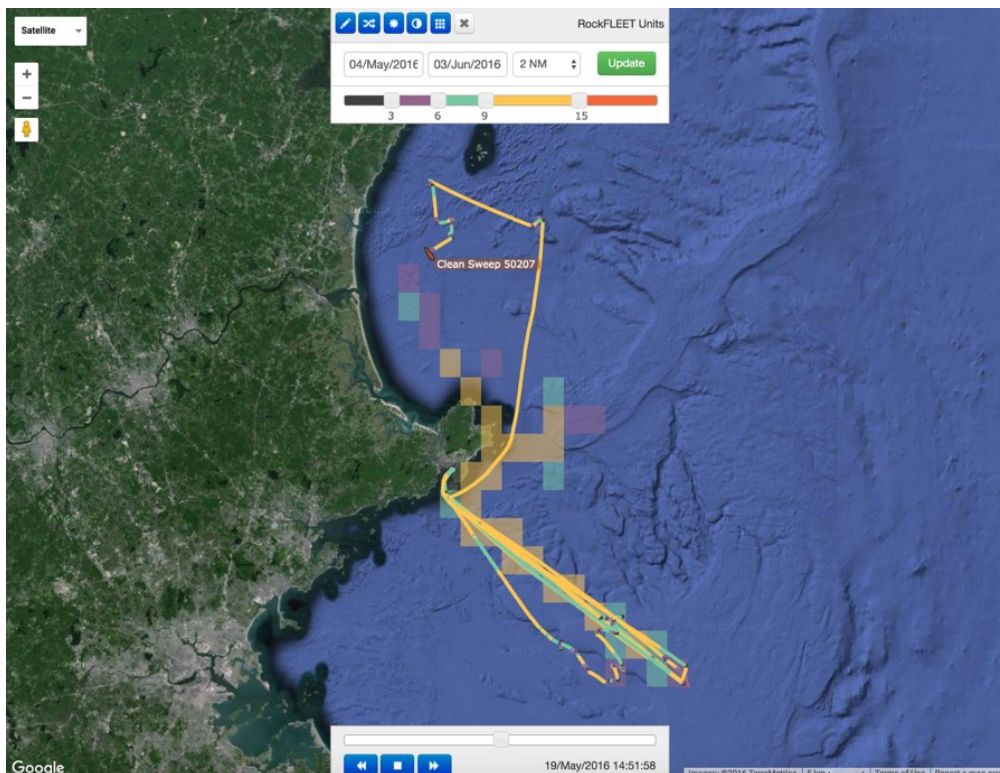
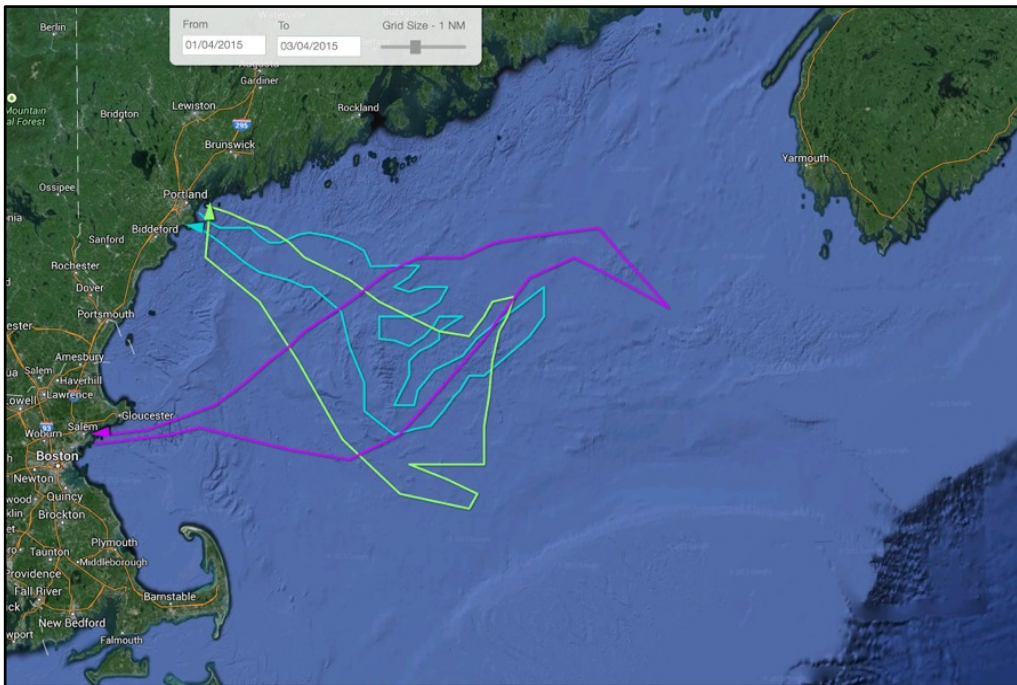
From the fisherman's perspective

Each fisherman/boat will have access to their own data, and will be able to review this data visually whenever they wish. They will be able to choose a date range for which to show data, and the boat tracks will then be shown on a map. The tracks will be colour coded showing the speed at which the boat was travelling at any given point. An example screenshot is shown below:



From a manager's, enforcement and science perspective

Managers would have access to view the entire fleet, and would be able to see time/speed in areas. Enforcement would have a similar view, but would also be able to create specific geo-fences (or zones) and receive alerts if boats enter/leave these areas.



From a science perspective, much more data will be made available. Graphical representations will be available showing the amount of time boats spend at certain speeds, and giving a heat-map on the grid showing how much ‘slow’ time has been spent across the grid, in any given timeframe.

All data will also be downloadable in CSV/XLS format, which can then be used in external analysis tools for reporting as you wish. However, the ideal would be to include as much reporting inside the system as possible, to make everyone’s lives easier, and to give one consistent platform.

Swipecard/Landing Integration

We have proposed to integrate the swipe card system into the tracking data, which would allow the heat maps to be ‘filtered’ by the species type.

From a technical perspective, we are currently collecting track data, but at the time of collection we do not know what species the boat is fishing for. When the boat lands their catch, they will swipe their card, and our system will then be told what species the last portion of track represented.

Based on this data, it will then be possible to filter ‘trips’, and display heat maps for ‘just lobster’ or ‘just scallops’ etc.

We would propose to work with the swipe card development company and provide them with an API they can use to ‘push’ us this data. We will need to agree on a fixed ID number for each vessel, ideally something common to both companies such as the boat’s MMSI.

We expect that this work will take around 3 man-weeks to complete, including discussions and testing.

Costs

Capital Expenditure

Qty	Item	Unit	Total
40	RockFLEET units, with flat hull mounts	\$640.00	\$25,600.00
1	Integration with swipe card reader (3 weeks work)	\$13,000.00	\$13,000.00

Example Running Costs (per month)

We understand the length of the trial extension may be variable depending on funding source, and so the costs below have been quoted on a monthly basis for 40 boats. You can therefore multiply to however many months you achieve funding for.

For the purposes of this, we have assumed that boats will be operating for 12 hours per day (transmitting every 15 minutes), with 12 hours per day in port (transmitting every 2 hours).

Qty	Item	Unit	Total
1	Months Line Rental	\$22.80	\$ 912.00
64,800	Transmissions (15 minute, with 1 min fixes)	\$0.13	\$8,424.00

Transmissions calculated as follows: 40

boats x 30 days = 1200 days

1200 x (48 transmissions at 15 mins + 6 transmissions at 2 hours) = 64,800 transmissions

Running costs would therefore be \$ 9336.00 per month

NOTE: If you were to collect a position every 2 minutes, and transmit every 10 minutes, the running costs would nearly halve. This would give less accuracy of the track though.

It is worth noting that we charge for what is actually **used**, so these running cost estimates are just that - estimates. If it ends up that boats actually only operate for 10 hours per day, on average, over a period, then your actual running costs will be lower.

Summary

Rock Seven is the ideal partner for The Bureau of Marine Sciences in this project. We already have the equipment, and specific experience doing what you require. As you have seen in the last 6 months, we are an agile company, can react quickly where bespoke reporting work is needed, and fully control the entire product - from the manufacture of the devices, to the delivery of the platform to monitor them with.



Nick Farrell, Director

Summary of Proposal for ACCSP Ranking

Proposal Type: New Project

Primary Program Priority and Percentage of Effort to ACCSP modules:

Catch and Effort (10 points): 100% of licensed dealers must report trip level information on 100% of species they purchase from harvesters.

Project Quality Factors:

Regional Impact (5 Points): all partners will benefit, as all the data collected will be uploaded to ACCSP. Regional management organizations, such as ASMFC, will benefit from the trip level information from Maine. Partners may also benefit from the technologies/procedures created with a swipe card/mobile app reporting project.

Funding transition plan (4 Points): After the initial programmatic costs associated with this program the DMR will pay for the ongoing monthly maintenance fee associated with this program. The DMR will be paying for all associated equipment for the swipe card program and DMR staff funded by the State of Maine will be responsible for implementing this reporting system.

In-kind Contribution (4 Points): the partner contribution is listed on page 20.

Improvement in Data Quality/Timeliness (4 Points): DMR is able to audit data at a more detailed level, including checking dealer reported data against harvester reported data. DMR encourages reporting timeliness through outreach with dealers and is working with Marine Patrol to ensure industry understands the importance of submitting accurate and timely information. DMR mandated electronic reporting through a swipe card system for the elver fishery in 2014, which improved timeliness and data quality and the DMR wants to expand to the sea urchin and scallop fishery.

Potential Secondary Module as a By-Product(0 points): None

Impact on Stock Assessment (3 Points): Regional management organizations which carry out stock assessments will benefit from the detailed, timely, and complete landings data reported from Maine. This information is used in stock assessments for many species that are managed by regional agencies. Better catch location information will support finer scale assessments and appropriate re-focusing of survey effort.

Innovative (5 points): Once finished this reporting tool will be first of its kind to link harvester and dealer reporting to a tracker. New technology being developed allows for the creation of this project. The savings associated with data entry and staff time spent monitoring the fishery will be significant. Allowing harvesters to utilize more grounds because of more finite spatial data might impact the fisheries bottom line and increase profitability.

Properly Prepared (5 Points): DMR followed ACCSP guidelines and pertinent documents when preparing this proposal.

References Cited

Johnson, T.R., J. A. Wilson, C. Cleaver, and R. L. Vadas. 2012. Social-ecological scale mismatches and the collapse of the sea urchin fishery in Maine, USA. *Ecology and Society* **17**(2):15. <http://dx.doi.org/10.5751/ES-04767-170215>

Johnson, T.R, J.A. Wilson, C. Cleaver, G. Morehead, and R. Vadas. 2013. Modeling fine scale urchin and kelp dynamics: implications for management of the Maine sea urchin fishery. *Fis. Res.* **141**:107–117. <http://dx.doi.org/10.1016/j.fishres.2012.05.008>

Robert B. Watts II
Maine Department of Marine Resources
(207) 633-9412
rob.watts@maine.gov

June, 2016

PROFILE:

- Knowledge of Maine and federal regulations pertaining to commercial fishing and associated reporting requirements through working with the Department of Marine Resources and the National Marine Fisheries Service.
- Knowledgeable of Maine's fishing industries and how they operate.

EDUCATION:

B.S. Marine Science, Maine Maritime Academy, Castine, ME 2002

EMPLOYMENT EXPERIENCE:

May 2016 – Present **Marine Resource Scientist III**
Maine Department of Marine Resources
West Boothbay Harbor, ME

- Manages daily operations of Maine's Commercial Landings Program, which collects, compiles and distributes commercial fishery statistics for Maine's commercial fisheries.
- Supervises Landings Program personnel.
- Maintain Microsoft Access databases for licensing information, compliance and data entry.
- Communicates with industry regarding reporting requirements, monitors reporting compliance and works with the licensing division in order to ensure all mandatory reporting requirements are met and licenses are issued accordingly.
- Oversees DMR's landings suspension authority and process.
- Oversees DMR's swipe card reporting program.
- Maintains dealer and harvester auditing databases.
- Oversees Maine's Interactive Voice Response (IVR) reporting program.
- Oversees Maine's Environmental Monitoring Program.
- Serves as key contact for Maine commercial landings information.
- Promotes Maine's partnership with Atlantic Coastal Cooperative Statistical Program (ACCSP), serving on the Commercial Technical Committee, Information Systems Technical Committee and Outreach Committee; working to bring the Landings Program into compliance with ACCSP standards.

Jan 2014 – Jan 2016 **Marine Resource Scientist III (Acting Capacity)**
June 2015 – Apr 2016 **Marine Resource Scientist II**
Maine Department of Marine Resources
West Boothbay Harbor, ME

- Manages daily operations of Maine's Commercial Landings Program, which collects, compiles and distributes commercial fishery statistics for Maine's commercial fisheries.
- Supervises Landings Program personnel.
- Maintain Microsoft Access databases for licensing information, compliance and data entry.
- Communicates with industry regarding reporting requirements, monitors reporting compliance and works with the licensing division in order to ensure all mandatory reporting requirements are met and licenses are issued accordingly.
- Oversees DMR's landings suspension authority and process.
- Oversees DMR's swipe card reporting program.

- Maintains dealer and harvester auditing databases.
- Oversees Maine's Interactive Voice Response (IVR) reporting program.
- Serves as key contact for Maine commercial landings information.
- Promotes Maine's partnership with Atlantic Coastal Cooperative Statistical Program (ACCSP) through serving on the Commercial Technical Committee, Information Systems Technical Committee and Outreach Committee; working to bring the Landings Program into compliance with ACCSP standards.

Feb 2012 – Apr 2015 **Marine Resource Scientist I**
Maine Department of Marine Resources

- Manages daily operations of Maine's Commercial Landings Program, which collects, compiles and distributes commercial fishery statistics for Maine's commercial fisheries.
- Supervises five Landings Program personnel.
- Maintain Microsoft Access databases for licensing information, compliance and data entry.
- Communicates with industry regarding reporting requirements, monitors reporting compliance and works with the licensing division in order to ensure all mandatory reporting requirements are met and licenses are issued accordingly.
- Oversees outreach to industry
- Maintains dealer and harvester auditing databases.
- Oversees Maine's Interactive Voice Response (IVR) reporting program.
- Serves as key contact for Maine commercial landings.

Oct 2007 – Jan 2012 **Marine Resource Specialist II**
Maine Department of Marine Resources

- Oversee daily operations of the harvester landings program.
- Notify new harvesters about reporting requirements.
- Maintain databases used for data audits and data entry.
- Monitor reporting compliance database and notifies harvesters if they are delinquent.
- Supervise two Landings Program personnel.
- Oversees IVR reporting.
- Prepare data requests from various sources

Jul 2005 – Oct 2007 **Marine Resource Specialist I**
Maine Department of Marine Resources

- Interviewed marine recreational anglers all over the Maine coast to help determine fish stocks. Identified, weighed, measured and recorded fish caught by anglers.
- Created publications, updated regulation handouts and updated the recreational fishing website as needed.

May 2001 – Jun 2005 **Conservation Aid**
Maine Department of Marine Resources

- Interviewed marine recreational anglers all over the Maine coast to help determine fish stocks. Identified, weighed, measured and recorded fish caught by anglers.
- Acted as a liaison between the State of Maine and the recreational anglers, answered anglers questions about fishing regulations.

Lessie White Jr.
Maine Department of Marine Resources
(207) 633-9412
lessie.l.white@maine.gov

August, 2016

PROFILE:

- Knowledge of tracking systems and applications to retrieve fishing intensity.
- Knowledge of and working relationship with many fishing industries in Maine.

EDUCATION:

M.S. Marine Biology, University of Maine/Orono Campus, Orono, ME 2000

B.S. Marine Science/Biology, Long Island University/Southampton Campus, Southampton, NY 1997

EMPLOYMENT EXPERIENCE:

Jul 2016 – Present **Marine Resource Scientist II**
Maine Department of Marine Resources
West Boothbay Harbor, ME

- Manages daily operations of Maine's Commercial Landings Program, which collects, compiles and distributes commercial fishery statistics for Maine's commercial fisheries.
- Supervises Landings Program personnel.
- Maintain Microsoft Access databases for licensing information, compliance and data entry.
- Communicates with industry regarding reporting requirements, monitors reporting compliance and works with the licensing division in order to ensure all mandatory reporting requirements are met and licenses are issued accordingly.
- Oversees DMR's landings suspension authority and process.
- Oversees DMR's swipe card reporting program.
- Maintains dealer and harvester auditing databases.
- Oversees Maine's Interactive Voice Response (IVR) reporting program.
- Serves as key contact for Maine commercial landings information.

Jul 2000 – Jul 2016 **Marine Resource Scientist I**
Maine Department of Marine Resources
West Boothbay Harbor, ME

- Implemented the RockSeven tracker project; Tracked boats using GPS trackers to determine fishing activity; Worked with Rock Seven to develop application to show fishing intensity at different speed ranges; Managed the funds;
- Participated in Locus Traxx project; Tracked boats using GPS trackers to determine daily movement and fishing activity; Checked for daily trip reports of fishing activity; Called fishermen to confirm fishing activity; Constructed a spreadsheet to show the performance of the on board reporting system.
- Responsible for implementation of the sea urchin and shrimp port sampling programs; Coordinating sampling schedule; Supervised employee during winter months; Conduct interviews; Collect samples; Process samples in the field and in the lab; Run data quality checks; Maintaining sampling gear; Train other scientists in urchin and shrimp procedures for working up sample; Data analysis on Maine, Massachusetts and New Hampshire's shrimp data; Participate in the stock assessment for shrimp.
- Participated in scallop, quahog and sea cucumber port sampling program; Sample catches at the docks; Interview the vessel captains for fishing and effort information; Process samples.

- Participated in a Fishing Gear Technology Working Group trying to look at all gear technology advancements for all fisheries; my primary focus was shrimp and lobsters.
- Participated in a Trawl Gear Workshop entitled “Working Together to Improve Fishing Technology”. This workshop looked at different ways to improve otter trawl selectivity through technological advances in materials and trawl designs.
- Participated in Bycatch in Northeast Fisheries: Moving Forward Workshop, where I participated at observing the roadblocks facing researchers and fishermen in trying to get new gear technology into fisheries management.
- Was responsible for shrimp logbook program; Distributing logbook forms; Developing a database to track compliance; Direct contact with fishermen to obtain correct entries; Answer any question the fishermen may have related to the logbook program.
- Participate in lobster sea sampling and ventless survey trips; Measure carapace length; Determine sex; Determine cull code; Determine V notch code; Determine egg classification code; Determine molt; Determine shell disease prevalence; Interviewing the vessel captains for fishing and effort information; Enter data into database.
- Participate in the summer shrimp trawl survey as lead shrimp biologist to assess the status of the stock; Train other scientists in shrimp identification, sex and stage identification, and procedures for working up samples; Work on a limited basis with FSCS (Fisheries Scientific Computing System).
- Implemented whiting gear research; Supervised two contract positions; Observed and sorted the catch; Processed catch; Analyzed data.
- Acted as DMR liaison and lead scientist on the NEC New Generation Trawl groundfish gear project. This included supervising four contract positions and two observer positions, overseeing data collection, collecting data, data entry, data checking, data analysis and writing the final report.
- Implemented the shrimp combination grate and cod end research; Sorted, identified, and measured the catches; Data analysis; Partial report writing; used underwater camera to video shrimp grate in action. Supervised one contract position.
- Participated as a member of the New England Fishery Management Council’s Plan Development Team for deep-sea red crabs; Assisting in the initial development of a Fishery Management Plan for deep-sea red crabs.
- Participated as an observer in the experimental Atlantic halibut fishery; Conducted a literature search on the tagging methods in the halibut fishery.
- Implemented a green crab trapping experiment looking at catchability, retention and cost of five different traps; Looked at converting current gear with the least amount of effort and cost; Set up sampling schedule and area; obtained the equipment; ran the experiments; partial data analysis.

Oct 1997 – Dec 2000

**Graduate Student Research
University of Maine/Orono Campus
Orono, ME**

- Graduate research project on cod energetics; Ran a small closed water aquaculture system; Raised larval and juvenile cod; Raised live food for larval cod; Conducted water quality tests; Gave presentations; Analyzed data; Did minor repairs and cleaned system; Gave tours.

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

**Northeastern US Black Sea Bass (*Centropristis striata*) Otolith Age Validation and Otolith
Micro-Chemical Investigation using Marginal Increment Analysis and LA-ICP-MS**

Submitted by:
Elise R. Koob
Massachusetts Division of Marine Fisheries
Annisquam River Marine Fisheries Station
30 Emerson Ave.
Gloucester, MA 01930
elise.koob@state.ma.us

Applicant Name: Massachusetts Division of Marine Fisheries
Annisquam River Marine Fisheries Station
30 Emerson Ave
Gloucester, MA 01930

Project Title: Northeastern US Black Sea Bass (*Centropristis striata*) Otolith Age Validation and Otolith Micro-Chemical Investigation using Marginal Increment Analysis and LA-ICP-MS

Principle Investigator(s): Elise R. Koob, Fisheries Technician II
Scott Elzey, Aquatic Biologist II

Project Type: New Biological Sampling

Requested Award Amount: \$18,033

Requested Award Period: September 1, 2017 through August 31, 2018

Objective:

1. Assess annuli on black sea bass otoliths in the northeast US using marginal increment and micro-chemical analyses to resolve errors and validate ageing practices.
2. Analyze otolith micro-chemistry to better understand black seabass stock structure.
3. Verify the accuracy of the ageing method used to generate data supplied to the stock assessment process.

Need:

Black sea bass (*Centropristis striata*) support extensive commercial and recreational fisheries in the northeastern United States. Their unique characteristics (e.g. protogynous hermaphroditism) create challenges for management due to deficiencies in understanding their life history. **The Atlantic States Marine Fisheries Commission (ASMFC), the Mid-Atlantic Fishery Management Council (MAFMC) and the Atlantic Coastal Cooperative Statistics Program (ACCSP) have all prioritized black sea bass as a species of importance and stress the need for further understanding of life history, particularly growth, age, sampling, migration, and stock structure (ASMFC 2008; ASMFC 2015; ACCSP 2015).** We propose a research project that addresses these priority areas. This study will validate and collect new information requested by these organizations.

Black sea bass are managed as a northern and southern stock, separated at Cape Hatteras, NC. The northern stock is currently assessed using a statistical catch at length model due primarily to insufficient data on age structure. A preliminary catch at age stock assessment model was proposed and subsequently rejected due to a lack of age data (NEFSC, 2012). A number of agencies have recently started to age black sea bass (ages 0-8+), including the Massachusetts Division of Marine Fisheries (MA DMF), Virginia Institute of Marine Science (VIMS), and Rhode Island Department of Environmental Management - Division of Fish and Wildlife (RI DEM DFW). **Collectively, these agencies have the ability to supplement age data for stock assessments.** However, despite this increase in direct **ageing**, determining the age of black sea bass otoliths can be challenging because the opaque and translucent layers are occasionally difficult to interpret (ASMFC 2013). Given the importance of this species, the difficulty in ageing them and a **push towards an age-based stock assessment, age validation, along with precision and accuracy, is of critical importance.** There have been some unpublished studies on black sea bass tetracycline tagging as well as marginal increment analysis of scales, but, “there really has been little done in validating the ageing in the northeast” (Shepherd, G., pers. comm. 2016).

Age validation can be accomplished a number of ways, but the most common is through marginal increment analysis. Given the time intensive, difficult, and controversial process of tetracycline tagging, marginal increment analysis of otoliths can be done with relatively modest amounts of time and effort. We also propose using laser ablation inductively coupled mass spectrometry (LA-ICP-MS) as a way to corroborate the results of our marginal increment analysis. This technique has been used to help identify annuli in a number of species (Gauldie et al., 1995; Townsend et al., 1995;

Sherwood et al., 2012) leading to a better understanding of the temporal deposition of banding in species with otoliths that have poor clarity between opaque and translucent bands. This process would be especially helpful for discerning between **growth zones** and identifying problem areas or sources of error during black sea bass ageing.

In addition to supporting the validation of black sea bass otoliths, LA-ICP-MS will allow us to test for a suite of elements important for dissecting information about stock structure. Black sea bass are migrating farther north than they have historically, which introduces many questions about their movements through these waters. Micro-chemical analyses have been done to recreate migration patterns, categorize nursery grounds, assist with stock identification, infer temperature history, and analyze life history variations within a population (Campana 1999; Elsdon et al., 2008; Kerr et al., 2007; Thorrold et al., 1997). There is an inherent need for more life history information on this species, and this methodology will allow us to gather data relevant to these considerations.

This project could have an important regional impact by validating the ageing systems that supply accurate data to future stock assessments for this high priority species. Providing accurate age data is essential because error stemming from inaccurate age determinations can have serious effects on age-structured calculations, i.e. growth rate, mortality rate, and productivity parameters, leading to stock assessments that do not correctly reflect the population (Campana, 2001). In addition, further information will be collected about black sea bass age, growth, and stock structure in the northeast, an area where knowledge is currently lacking, but where black sea bass are likely to become more abundant given recent trends in ocean warming along the U.S. east coast.

ASFMC states in the 2015 Action Plan: “[Our] goal encompasses the development of new, innovative scientific research and methodology, and the enhancement of the states’ stock assessment capabilities.” **Using laser ablation, we have the opportunity to execute an approach that has not been utilized for black sea bass in this region.** Through marginal increment analysis and laser ablation techniques, we plan to accomplish this goal by validating age data for black sea bass.

Approach, Results & Benefits:

Sample Collection & Preparation:

Black sea bass samples used in this study will include aged archived otoliths dating from 2013 to the present. Archived samples were collected on both the MA DMF Research Resource Assessment Trawl Survey as well as the MA DMF Ventless Trap Survey. Future samples from these surveys will be included in this study as they are collected. **In addition, we will incorporate an interstate sampling exchange to include samples outside of Massachusetts and reflect the range of the northern black sea bass stock. We are anticipating to acquire otoliths from both fisheries dependent and independent sources from agencies participating in the sample exchange.** This project will require year-round **samples** and the incorporation of otoliths from known juvenile nursery areas. Samples selected for analysis will include a range of lengths, ages, capture dates and locations, representative of the local black sea bass population. **We will analyze approximately 300**

samples for laser ablation analysis, ~150 from MA DMF archived sources and ~150 from the interstate exchange. A larger sample size will be used for marginal increment analysis and can primarily be supplemented with otoliths from MA DMF archived samples. Whole black sea bass will be purchased if there are any gaps the exchange and MA DMF archived samples do not cover.

A 0.5mm thick section, containing the core, will be removed from the otoliths using a low speed Buehler Iso-Met® diamond blade saw and mounted on glass slides using Crystal Bond®. Prior to micro-chemical analysis, sectioned samples from the archive will need to be polished using a Buehler Eco-Met 3000 Polisher®, to remove Flo-Texx® adhesive originally used to mount sections onto slides. Protocol for prepping samples for laser ablation technique will follow recommendations from the literature (Campana et al., 2005) as well as from the processing laboratory.

Two independent readers will age black sea bass that are not part of the previously aged, archived sample (differing results will require a third, consensus reading) before marginal increment and laser ablation analyses are performed. All samples will be aged without reader knowledge of fish size, capture location, or previous age determinations.

Marginal Increment Analysis:

Marginal increment analysis will be performed on black sea bass otoliths prior to micro-chemical analysis as the primary method for age validation. Otolith age determination is based on the concept that one translucent and one opaque band (alternating and forming seasonally) equate to one year of growth. Black sea bass are generally aged by counting the opaque bands from the otolith core to the edge (under reflected light). If these bands are formed regularly and laid down at the same time of year, then measurements from the last opaque annuli to the edge should vary depending on the time of year collected (Fowler 1990). For example, if annuli are laid down in June, a fish collected in September will have a smaller measured distance to the edge than a fish collected in March (measuring translucent band growth from the last opaque band).

To complete black sea bass marginal increment analysis, we will measure the distance from the last annulus to the edge of the otolith for samples across consecutive months. Measurements from the core to the edge will also be made to show that scale increases with body size. We will complete the measurements using a microscope and camera set-up, along with ImagePro® Plus software V9.1 (MediaCybernetics). These data will allow us to confirm that only one translucent and one opaque band are deposited within a one year timespan. Previous marginal increment studies have run into problems with sampling and measurement errors; therefore, we will complete this work with regard to the recommendations laid out by Campana (2001) in order to avoid these issues.

LA-ICP-MS Analysis:

There is a recent, growing trend in the employment of otolith micro-chemical analysis to discern more information about migration patterns, natal regions, life histories, and population dynamics. Though these analyses can be done using a variety of techniques and instrumentation, LA-ICP-MS has been one of the most commonly used methods due to the rapid, accurate, and wide range of

elemental assays (Campana 1999). This project proposes to use the data gleaned from this method in two different ways:

1. to help identify common ageing errors (e.g. checks) and verify annuli (i.e. validation).
2. to contribute information about life history and stock structure.

Several studies have used the ratio between strontium and calcium to test current ageing techniques due to the inverse relationship between strontium and temperature (Gauldie et al., 1995; Granzotto et al., 2003; Sherwood et al., 2012). When this relationship is analyzed (standardized to calcium) in an otolith, a sinusoidal relationship can be seen across the growth axis. The peaks correspond to higher levels of strontium during the winter and should align with the winter annuli (opaque). Black sea bass experience changes in water seasonally as they move offshore in the winter, therefore, this same pattern should be detectable through LA-ICP-MS. Additional micro-chemical analyses are commonly executed using trace elements that are incorporated into otoliths based on environmental factors (Elsdon and Gillanders 2002). These elements are assimilated during different life stages and can be identified and used as unique chemical tags. We can use those tags to compare different age classes/groups of fish or environments as stock markers (Campana et al., 2005; Elsdon et al., 2008; Kerr et al., 2007). By analyzing a suite of elements in black sea bass, we will be able to identify similar markers and discern varying stock structure information from this data.

Samples will be processed on the LA-ICP-MS instrument at the Environmental Analytical Facility at the University of Massachusetts – Boston. We will test for a suite of elements, (Sr, Mg, Ca, Na, K, S, Li, Mn, Cu, and Ba) in order to gain as much information as possible for analysis. The areas of interest on the black sea bass otoliths are the core (natal history), as well as a transect running from the core to the edge (chronological life history). The specs that will be used for the LA-ICP-MS instrument will follow the literature and recommendations from the laboratory.

Analysis of this data will be used to generate Sr:Ca sinusoidal plots for comparison to our age estimations and marginal increment analysis. This technique allows us to discern annuli more easily than the naked eye due to the ability to sample repeatedly and chronologically. In addition, we will be able to identify annuli in areas of the otolith that are prone to checks, making it difficult to get an accurate age. This is particularly important during the first 2-3 years, as that is where much of the imprecision is focused. A second round of analysis will be done to identify and compare micro-chemical data from the cores and transects completed on the otoliths. Unique, natural chemical markers can be found from the first year of life on an otolith and compared to the corresponding ‘adult’ years. This can give us information about natal origins and movements of adults in a population.

Geographic Location:

Samples that will be used in this project will all come from state waters all along the northeast. The Resource Assessment Trawl Survey runs transects throughout state waters in statistical areas 514, 521, 526, 537, and 538, and the Ventless Trap Survey in statistical areas 537 and 538. **Organizations**

participating in the interstate sample exchange should provide us with samples ranging from Maine to North Carolina, including fisheries dependent samples. Marginal increment analysis and data analysis will be conducted at MA DMF in Gloucester, MA. Micro-chemical analysis (LA-ICP-MS) will be done at the Environmental Analytical Facility at the University of Massachusetts – Boston.

Milestone Schedule:

Task	2017				2018								
	S	O	N	D	J	F	M	A	M	J	J	A	
Inter-Agency Sample Exchange Request		X	X	X	X	X	X	X					
Resource Assessment													
Sample Collection	X												
Ventless Sample Collection	X												
Sample Processing		X											
Ageing New Samples		X	X										
Marginal Increments				X	X	X	X	X					
LA-ICP-MS								X	X	X			
Data Analysis						X	X		X	X	X		
Final Report												X	

Project Accomplishments Measurement:

Project progress will be monitored by adhering to the above *Milestone Schedule* table and completing each task during its allotted time.

Cost Summary:

Description	Calculation	Funding Source	
		MADMF In-Kind	Requested from ACCSP
<i>Personnel (a)</i>			
Fisheries Research Technician	50% yr salary x 1 yr	\$22,171	
Graduate Student	fees/credit x # credits		\$10,147
<i>Fringe (b)</i>			
Technician	30.83% of technician salary	\$6,835	
<i>Travel (c)</i>			
Mileage for sample processing	Estimate 648 miles (11 trips) x \$0.45/mile		\$401
Conference travel	Flight + rental car + hotel + per diem (\$30/day)		\$1,610
<i>Supplies (e)</i>			
Sample processing supplies	E.g. slides, vials, crystalbond®, saw blades, etc	\$1,100	
<i>Contractual (f)</i>			
Umass Contract Total			\$5,875
LA-ICP-MS training day	ICP-MS/data analysis training		\$800
LA-ICP-MS sample processing	ICP-MS/day x 10 days		\$3,900
Umass overhead	25%		\$1,175
Totals			
Total Direct Charges (i)		\$30,107	\$18,033
Indirect Charges (j)	25.90% of technician salary	\$5,742	
Total (Sum of Direct and Indirect)		\$35,849	\$18,033
Total Project Cost		\$53,882	
Percentage Contribution by Source		67%	33%

Cost Details:

A. Personnel

The Fisheries Technician is a recognized Civil Service position within the Commonwealth of Massachusetts Personnel Administration System. The pay rates are established by the Commonwealth according to collective bargaining agreements with the respective state employee unions. **In-kind employee time for this project will be at 50% of total time for the entirety of this project (1 year).**

One graduate student will be supported by this project by way of paying coursework fees. Total cost is based off University of Massachusetts Boston rates for in-state graduate coursework: \$563.7/credit, 18 credits.

B. Fringe

Fringe Charges (in-kind) are applied to the budget according to rates and terms calculated with the concurrence of the Secretary of the Executive Office of Administration and Finance and the U. S. Department of Health and Human Services. See separately attached Fringe Rate Agreement.

C. Travel

Travel costs for trips made to the Environmental Analytical Facility to process samples are estimated for 11 roundtrip travel days (1 LA-ICP-MS training day, 10 processing days). Approximately 648 miles at the employee's union mileage rate \$0.45/mile = \$401. Conference travel estimated in order to present current findings at the American Fisheries Society (AFS) meeting in Atlantic City, August 19-23, 2018. Flight 1 person = \$200 (Boston to Philadelphia); rental car for 6 days = \$300; hotel room (1person, 5 nights) = \$150/night = \$750; per diem (based on collective bargaining agreements) = \$30/day for 6 days = \$180; AFS registration fee = \$180; Total = \$1,610.

E. Supplies:

Cost of processing/prepping samples in the Age and Growth Laboratory at MA DMF (in-kind): slides, storage vials, CrystalBond®, mineral oil, saw blades, etc. = \$1,100. The Age and Growth Laboratory at MA DMF will be in charge of ageing previously unaged samples used in this project. This lab handles about 14,000 samples per year and is fully equipped with the supplies, machinery, and viewing systems needed to process the samples in this project for ageing and marginal increment analysis.

F. Contractual – University of Massachusetts, LA-ICP-MS:

Cost estimates based on the University of Massachusetts Environmental Analytical Facility's procedural rates to process samples for this project. One training day is necessary for LA-ICP-MS processing and data analysis.

ICP-MS training = \$246

Data analysis training = \$164

ICP-MS/day = \$390

Training day total = \$800

Sample processing total (10 days) = \$3,900

Overhead (25%) = \$1,175

Total UMass Contract = \$5,875

I. Direct

MA DMF In-Kind = **\$30,107**

Requested from ACCSP = **\$18,033**

J. Indirect

Indirect Charges (in-kind) were applied to the budget according to rates and terms negotiated in accordance with OMB Circular A-87 in agreement with the U.S. Dept. of Commerce for the Massachusetts Division of Marine Fisheries. See separately attached Indirect Rate Agreement.

MA DMF In-Kind = \$5,742

K. Total Direct and Indirect

MA DMF In-Kind = \$35,849

(67% total project cost)

Requested from ACCSP = \$18,033

(33% total project cost)

Co-Principal Investigators:

Elise Koob, Fisheries Technician II

Scott Elzey, Aquatic Biologist II

ACCSP Proposal Summarized Ranking Criteria

Biological Sampling

This work will improve the accuracy and precision of black sea bass ageing practices by validating the annuli found on otoliths, the most reliable ageing structure. Age determinations from current biological sampling have not been properly validated. This has the potential to introduce error into the stock assessment. Black sea bass' high priority ranking and move towards age-based stock assessments necessitates verified ageing practices. There is a push for increased sampling and ageing of black sea bass, however, age data that has not been validated can have far-reaching negative effects on the stock assessment.

Multi-Partner/Regional Impact

The interstate exchange planned in this proposal creates the opportunity for states from Maine to North Carolina to participate in this study. Collected samples will range in variables (e.g. fish size, location, capture date, etc) to ensure a diverse and representative sample base is created for analysis. These samples are expected to be from both fisheries dependent and independent sources. Additionally, this project will affect the entire Northeastern US by helping current and future agencies age black sea bass accurately, ensuring that the data is valuable for stock assessments.

Defined End Point

The project will reach completion once all samples have been processed, aged and analyzed. It is anticipated to be completed within the one year timeframe. The results of this project will be presented at the 2018 American Fisheries Society conference in Atlantic City, NJ and subsequently published in a peer-reviewed journal.

In-kind Contribution

The Massachusetts Division of Marine Fisheries will be paying for the technician's salary as well as providing laboratory supplies. This contribution totals to 66% of the total project cost.

Improvement in Data Quality

In addition to age validation, this project will help elucidate some of the problems that are encountered while ageing black sea bass otoliths. These answered questions will lead to higher accuracy and precision for both current and future ageing agencies.

Impact on Stock Assessment

Length-based models cannot as accurately reflect changes in maturation as age-based models can, which is vital to the accuracy of a stock assessment. The validation done in this project will allow movement towards an age-based stock assessment. Additional information gathered from micro-chemical analyses will lead to improved black sea bass life history information, which can be used in stock determinations and management decisions.

Innovative

Otolith age validation and micro-chemical analysis has not been completed for the northern black sea bass stock. This project gives the opportunity to apply innovative technology to explore new areas, which should result in useful data applicable to many areas of interest.

Properly Prepared

This project proposal has been written as per the Funding Decision Document outline.

Literature Cited

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Appendix A: Curriculum Vitae

Elise Koob

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Education

B.S. Marine and Freshwater Biology - University of New Hampshire 2007-2011

Ageing Experience

Massachusetts Division of Marine Fisheries - Laboratory Technician II June 2014 - Present

- Determining age and growth for recreational and commercial: river herring, striped bass, black sea bass, tautog, shad, scup, winter flounder, bluefish, and fluke (otoliths, scales, fin spines, opercula).

Gulf of Maine Research Institute - Fisheries Technician II Feb. 2012 – June 2014

- Determined age and growth of bluefin tuna in the NW Atlantic to provide updated data for age-based assessment models and to assist in characterizing the stock compositions of catches.

Australia's Scientific and Industrial Research Org. - Research Intern May 2010 – July 2010

- Age, growth and maturity of golden trevally (*Gnathanodon speciosus*) in Australian waters.

Other Research Experience

Dauphin Island Gulf Coast Seafood Lab., U.S. FDA - Research Intern Aug. 2011 – Dec. 2011

- Performed extraction of *Gambierdiscus* spp. ciguatoxins from fish tissue and isolate cell cultures.

Isle of Shoals Marine Laboratory - Research Intern Jul 2011 – Aug. 2011

- Reorganization and application of protocol for NE Temperate Network Monitoring program.

Dr. Elizabeth Fairchild Laboratory, UNH - Student Research Assistant Sept. 2010–May 2011

- Assessment of species composition and distribution of benthic prey available for juvenile winter flounder (*Pseudopleuronectes americanus*) release along the NY, CT and MA coasts.

Isle of Shoals Marine Laboratory – Research May 2009 – Jul 2009

- Effects of chemical signals of an invasive crab (*Carcinus maenas*) on intertidal whelks (*Nucella lapillus*) from Newfoundland and the Gulf of Maine.

Large Pelagics Research Center, UNH - Student Research Assistant Sept. 2007–Dec. 2009

- Analysis of the somatic condition (percent composition) of Atlantic herring (*Clupea harengus*).

Awards

Summer Undergraduate Research Fellowship, UNH May 2010 – Jul 2010

- Awarded for 2010 research project at CSIRO in Cleveland, Australia: \$5,000

Publications

Busawon, D. S., et al. (2014). Evaluation of an Atlantic bluefin tuna otolith reference collection. SCRS/2014/038.

Freeman, A., et. al. (2014). Biogeographic contrast of *Nucella lapillus* responses to *Carcinus maenas*. *Journal of Experimental Marine Biology and Ecology*.

Pershing, A.J., Mills, K.E., Record, N.R., Stamiezkin, K., Wurtzell, K., Byron, C., Fitzpatrick, D., Golet, W., Koob, E. (2014). Trophic Cascades are an Unlikely Driver of Open Ocean Regime Shifts. *Philosophical Transactions of the Royal Society B*.

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Secor, D.H., et al. (2013). Conversion factors for Atlantic bluefin tuna fork length from measures of snout length and otolith mass. SCRS/2013/085.

Koob, Elise. (2011) The Quest for Fisheries Sustainability: Age, Growth and Maturity of Golden Trevally (*Gnathanodon speciosus*) in Australia. *Inquiry Journal 2011*. Paper 10.

Scott Elzey

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EDUCATION

University of New Hampshire - B.S. Marine and Freshwater Biology, May 2003

University of New Hampshire - M.S. Zoology, May 2006

PROFESSIONAL EXPERIENCE

2009 – Present Aquatic Biologist II, Massachusetts Division of Marine Fisheries

Duties include- Oversight of the Age and Growth Lab, sample preparation and ageing, performing quality assurance and quality control procedures, data processing, manuscript preparation.

2007 – 2009 Aquatic Biologist I, Massachusetts Division of Marine Fisheries

2006 – 2007 Fisheries Supervisor, Massachusetts Division of Marine Fisheries

AGEING EXPERIENCE

Experience with:

Atlantic Wolffish, Atlantic Cod, Alewife, Blueback Herring, American Shad, Striped Bass, Black Sea Bass, Scup, Tautog, Rainbow Smelt, Winter Flounder, Summer Flounder, Bluefish, White Perch

Structures and Techniques used:

Scales - Sandwiched between slides, Acetate pressing
Otoliths - Whole, Baked, Thin sectioned, Daily Growth
Vertebrae - Whole, Sectioned
Opercula - Whole
Fin spines - Cross sectioned

QUALIFICATIONS

ASMFC introduction to stock assessment class

SELECTED PUBLICATIONS

Elzey, Scott P., Kimberly J. Trull. 2016. "Identification of a Non-Lethal Aging Method for Tautog (*Tautoga onitis*). *Fishery Bulletin* 114 (4): 377-385.

Fairchild, Elizabeth A., Shelly Tallack, Scott P. **Elzey**, and Michael P. Armstrong. 2015. "Spring Feeding of Atlantic Wolffish (*Anarhichas Lupus*) on Stellwagen Bank, Massachusetts." *Fishery Bulletin* 113 (2).

Elzey, Scott P., Katie A. Rogers, and Kimberly J. Trull. 2015. "Comparison of 4 Aging Structures in the American Shad (*Alosa Sapidissima*)." *Fishery Bulletin* 113 (1): 47-54. doi:10.7755/FB.113.1.5.

Elzey, Scott P., Kimberly J. Trull, and Katie A. Rogers. 2015. "Division of Marine Fisheries Age and Growth Laboratory: Fish Aging Protocols." Technical Report No. 58. Massachusetts Division of Marine Fisheries.

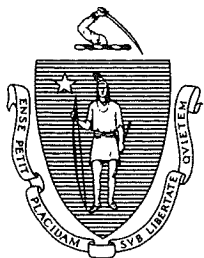
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Sulikowski, J. A., J. Kneebone, S. **Elzey**, J. Jurek, W. H. Howell, and P. C. W. Tsang. 2006. "Using the Composite Variables of Reproductive Morphology, Histology and Steroid Hormones to Determine Age and Size at Sexual Maturity for the Thorny Skate *Amblyraja Radiata* in the Western Gulf of Maine." *Journal of Fish Biology* 69 (5): 1449–65.

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Ayer, Matthew H., Christopher Benton, William King, Jeffrey Kneebone, Scott **Elzey**, Marcos Toran, Katherine Grange, and David L. Berlinsky. 2005. "Development of Practical Culture Methods for Rainbow Smelt Larvae." *North American Journal of Aquaculture* 67 (3): 202–9.



The Commonwealth of Massachusetts

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MARTIN J. BENISON
COMPTROLLER

December 17, 2014

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Mr. Brian Kelter
Department of Fish and Game
251 Causeway Street, 9th Floor
Boston, MA 02114

Dear Mr. Kelter:

The enclosed negotiation agreement involving the FY2016-FY2017 indirect cost rates for the Massachusetts Department of Fish and Game's (FWE) Division of Fisheries and Wildlife, Marine Fisheries and the Riverways Program represents an understanding between the Commonwealth and the U.S. Department of the Commerce concerning the rate that may be used to support a claim for Federal payment of indirect costs incurred for the performance of a Federal grant or contract. This rate was negotiated in accordance with OMB Circular A-87 and with regulations promulgated by the Secretary of Administration and Finance under Administrative Bulletin #5 (A&F5), dated May 1, 2008, entitled: "Fringe Benefits, Payroll Taxes and Indirect Costs".

The automated indirect cost recovery program used to assess the Division's Federal Grants and other non-budgetary accounts will be updated to reflect the approved rate of 25.90% for FY2016-FY2017 of the modified total direct costs (subsidiary AA, CC, HH, JJ, and UU excl. U07 object code expenditures) beginning with the closing of Period 01, BFY2016. The last approved rate of 23.94% will expire at that time.

Also enclosed with this agreement is a schedule identifying the positions that have been included in the approved indirect cost rate. Since these positions have been approved for reimbursement through this rate, they may not be allocated under the Labor Cost Management System (LCM) or any other agency labor distribution plan without prior authorization of this office. Additionally, these positions may not be used to meet Federal matching requirements. The above-referenced administrative regulations prohibit indirect costs from being budgeted on federal grants and trusts at any rate or amount less than that approved under this agreement without prior authorization of this office.

Jerry Stephenson is available at 617-973-2638 to answer any questions that you may have regarding this agreement.

Sincerely,

A handwritten signature in black ink, appearing to read "T. Simmons".

Taneka Simmons, CPA
Director, Federal Grants &
Cost Allocation

Enclosure

cc: Comptroller's Payroll Unit
Kris McCarthy, Division of Fisheries and Wildlife
Kevin Creighton, Marine Fisheries
Eileen Goldberg, Riverways Program



U.S. Department of Commerce

SSMC2 of A62 – 9th Floor

1325 East West Hwy

Silver Spring, MD 20910

Attn: Indirect Cost Program

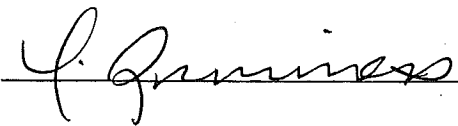
CERTIFICATE OF INDIRECT COSTS

This is to certify that I have reviewed the indirect cost rate proposal prepared and maintained herewith and to the best of my knowledge and belief:

- (1) All costs included in this proposal dated December 17, 2014 to establish indirect cost billing rates for 7/1/2015 - 6/30/2017 are allowable in accordance with the requirements of the federal award(s) to which they apply and OMB Circular A-87, "Cost Principles for State, Local, and Federally-recognized Tribal Governments". This proposal does not include any costs which are unallowable as identified in the applicable federal cost principles. For example, advertising contributions and donations, bad debts, entertainment costs or fines and penalties.
- (2) All costs included in this proposal are properly allocable to federal awards on the basis of a beneficial or causal relationship between the expenses incurred and the agreements to which they are allocated in accordance with applicable requirements. Further, the same costs that have been treated as indirect costs have not been claimed as direct costs. Similar types of costs have been accounted for consistently and the Federal Government will be notified of any accounting changes that affect the rate.
- (3) The indirect cost rate calculated within the proposal is 25.90%, which was calculated using an indirect cost rate base type of Modified Total Direct Costs (MTDC). The calculations were based on actual costs from fiscal year FY2014, to obtain a federal indirect cost billing rate for fiscal year FY2016-FY2017.

Subject to the provisions of the Program Fraud Civil Remedies Act of 1986, (31 USC 3801 et seq.), the False Claims Act and False Claims Amendments Act of 1986 (18 USC 287 and 31 USC 3729); and the False Statements Accountability Act of 1996 (18 USC 1001), I declare to the best of my knowledge that the foregoing is true and correct.

Organization Name: Commonwealth of Massachusetts
Office of the State Comptroller
On behalf of
Department of Fish and Game

Signature: _____

Name of Authorized Official: Taneka Simmons, CPA

Title: Director, FGCA

Date of Execution: December 17, 2014

COMMONWEALTH OF MASSACHUSETTS
OFFICE OF THE STATE COMPTROLLER

**FY2016 FRINGE BENEFIT RATE
BASED ON FY2014 ACTUAL COSTS FOR ROLL FORWARD**

Fringe Benefit and Payroll Tax Rate Summary

	General Employee	Uniformed Employee	Salaries Subject to Assessment
Group Insurance	18.77%	18.77%	A01, A07, A09, AA1
Retirement	9.45%	17.70%	A01, A07, A09, AA1
Terminal Leave	0.95%	0.95%	A01, A07, A09, AA1
	29.18%	37.43%	Applicable to Regular and Uniformed Employees
Unemployment Insurance	0.30%	0.30%	AA & CC*
Universal Health Insurance	0.06%	0.06%	AA & CC*
Medicare Tax	1.29%	1.29%	AA & CC*
	1.65%	1.65%	Applicable to Regular, Uniformed, and Contract Employees

*Exceptions noted below

Rates represent both the "6B" rate mandated by M.G.L. C.29, s.6B and applicable to federal grants, federally funded contracts, and claims for federal reimbursements; and the "5D" rate mandated by M.G.L. C.29, s.5D and applicable to non-budgetary accounts and budgetary funds. See Executive Office of Administration and Finance Administrative Bulletin A&F5, dated May 1, 2008, entitled, *Fringe Benefits, Payroll Taxes and Indirect Costs*.

Group Insurance, Retirement and Terminal Leave rates apply only to regular employees and are assessed against object codes A01, A07, A09 and AA1 to determine these fringe benefit costs.

Unemployment Insurance, Universal Health Insurance and Medicare Tax rates apply to regular and contract employees and are assessed to all AA and CC object codes with the exception of A75, A90, CC5, C33, C75, C90, and C98. These rates will be used to assess costs on all account types.

The General Employee rates are applicable to all contract employees and regular employees other than uniformed employees.

The Uniformed Employee rates are applicable only to judges, the uniformed employees of Sheriffs departments, POL, DOC, ENV, prosecutors in the District Attorneys Offices, state firefighters (DCR), parole officers (PAR), investigators of ABCC and DOR, and other employees under Retirement Groups 3 and 4.

Proposal for Funding made to:
Atlantic Coastal Cooperative Statistics Program
Operations and Advisory Committees
1050 North Highland Street, Suite 200 A-N
Arlington, VA 22201

Pilot Study: Characterization of Bycatch and Protected Species Interaction in the New Jersey Delaware Bay Inshore Gillnet Fishery

Submitted by:
Thomas Baum
New Jersey Division of Fish and Wildlife
P.O. Box 418
Port Republic, NJ 08241

Revision Notes

-NJ state specific comments have been highlighted in yellow with NJ number corresponding to the comment made, i.e. (NJ X). NJ revisions can be found on pp. 3 (NJ 4); 4 (NJ 2); 5 (NJ 5); 6 (NJ 1); 8,9;11 (NJ 3).

Revised August 15, 2016

Applicant Name: New Jersey Division of Fish and Wildlife (NJDFW)

Project Title: Pilot Study: Characterization of Bycatch and Protected Species Interaction in the New Jersey Delaware Bay Inshore Gillnet Fishery

Project Type: New

ACCSP Program Priorities: Bycatch/Species Interaction (50%), Biological Sampling (40%), Catch and Effort (10%)

Principal Investigator: Thomas Baum, Supervising Biologist (NJDFW)

Requested Amount: \$ 88,466

Requested Award Period: January 1, 2018 to December 31, 2018

Objective: To conduct a pilot study to characterize catch, effort, bycatch and protected species interactions within New Jersey's Delaware Bay Gillnet Fleet to assist federal and state fisheries managers for future management and stock assessment, and improve data quality of trip level reporting.

Need: The collection of accurate data is critical to both fisheries scientists and managers. Specifically, by better understanding catch, effort, bycatch, and species interaction fisheries managers can use real time data to better manage commercial fisheries. Establishing an observer program is an important tool for use in fisheries management, and provides a platform to collect more accurate fisheries-dependent data for use in stock assessments and maintaining sustainable harvest of commercial fish species.

The purpose of the proposed study is to characterize bycatch (protected species and finfish), collect biological data to develop conversion factors, and validate reported harvest from the commercial harvester trip reports (observed trip data versus reported data) within the New Jersey Delaware Bay commercial gillnet fleet. Data collected through the proposed project is integral to regional management organizations and the NJDFW to ensure sustainable harvest of target species and protection of endangered and threatened species.

Description of fishery

The NJDFW has issued Delaware Bay Gillnet licenses to 135 individual fishermen. Among the fishermen there are 653 staked and anchored gillnets and 126 drifting gillnets permitted.

Page 2

NJ Division of Fish and Wildlife

Pilot Study: Characterization of Bycatch and Protected Species Interaction in the New Jersey Delaware Bay Inshore Gillnet Fishery

Items highlighted **gray** aid in referencing the ranking criteria found on pages 9-10. Items highlighted **yellow** reference changes to the original proposal based on the initial proposal comments.

Fishermen using gillnets less than 3.25 inches are classified as small mesh and are permitted under the Gillnet Mesh Exemption Permit (GNMEP). As of 2015, the NJDFW has distributed 20 GNMEP, with the majority of the permittees fishing out of Delaware Bay.

Protected species interaction

Establishing an observer program for the inland gillnet fleet is vital in the characterization of protected species interaction. The proposed study will help fisheries scientists and managers quantify the amount and disposition of protected species interactions within Delaware Bay. Data collected can be used by both federal and state fishery managers to better understand the interactions of protected and threatened species listed under the Marine Mammal Protection Act (MMPA 1972) and the Endangered Species Act (ESA 1973).

Characterizing protected species interaction within the gillnet fleet is paramount to state and federal fisheries management agencies. In 2012, the National Marine Fisheries Service (NMFS) declared 4 out of 5 distinct population segments (DPS) of Atlantic sturgeon to be listed as endangered under the ESA. The New York Bight endangered DPS contains the Delaware River and its tributaries. According to the Atlantic Sturgeon Plan Review Team (ASPRT) bycatch characterization of sturgeon by gear and season is a high importance as a fishery independent priority (ASMFC 2016). The Atlantic States Marine Fisheries Commission (ASMFC) has also identified as part of Amendment 1 to the FMP that quantitative bycatch estimates will be an important component of the upcoming 2017 benchmark stock assessment (ASMFC 2016). While data from this project may not be completed before the 2017 Stock Assessment, the quantitative bycatch data collected may be used for future Atlantic Sturgeon stock assessments (NJ 4). In addition to Atlantic sturgeon bycatch data, the proposed observer program will collect supplemental data on marine mammal and sea turtle interactions within the gillnet fleet. Data collected through this project will assist fisheries managers and biologists in quantifying protected species interactions within the fleet.

Along with protected species, there are a number of species prohibited from harvest that are of interest to state agencies partners, the ASMFC, and the NFMS. Specifically, species of importance to state and federal partners within Delaware Bay include river herring, striped bass, coastal sharks, horseshoe crab, and Diamondback terrapin. The proposed study will help fisheries managers better understand seasonal and spatial interactions and the condition of restricted species impacted by gillnets.

Finfish discards

Beginning in January 2016, the NJDFW Bureau of Marine Fisheries has implemented a commercial harvester trip reporting system for all state managed fisheries. Although the new reporting system collects catch and effort data, bycatch and disposition data (dead discard, released alive) is unknown.

A major problem to overcome in regard to accurate data collection is to establish conversion factors for both retained harvest and discards in line with ACCSP standards. Through the New Jersey Commercial Harvester Trip Reporting System discards within each fishery are reported in numbers versus pounds. As a result, harvester trip report data feeds to the ACCSP become less accurate due to unknown conversion factors for reported discards. This project will supply ample data to develop and improve NJDFW conversion factors.

According to harvester trip reports, 10 regionally managed species have been identified to have some level of interaction with gillnet gear fished within the Delaware Bay. These species include Atlantic croaker, Atlantic menhaden, bluefish, weakfish, spot, American Shad, black drum, river herring, horseshoe crab, and striped bass. Of these species, the commercial harvest of striped bass, river herring, and horseshoe crab is prohibited in New Jersey.

The proposed at-sea observer coverage will fill trip level data gaps for the ACCSP that are not captured through the New Jersey commercial harvester reports. Data collected through this study will ensure accurate data feeds are provided to the ACCSP from commercial harvester trip reports, and assist in developing conversion factors for species retained and discarded. Information gathered by this project is critical to both the collection of accurate data and assisting fisheries managers in better understanding species interaction within the gillnet fleet of Delaware Bay.

Currently there is no inland gillnet observer program for state only fishermen. As a result, the expanded observer coverage combined with existing federal observer coverage will collect invaluable data and help characterize bycatch and protected species interactions for use in stock assessments and future management. The Mid-Atlantic Inland Gillnet fleet (9) ranks in the top quartile of the Bycatch Sampling Priority Matrix. Atlantic menhaden (9), American shad (16), and river herring (8) rank in the top quartile of the Biological Prioritization Matrix.

This pilot project addresses the bycatch and biological sampling ACCSP priorities previously addressed on pages 2 and 3 (NJ 2).

Results and Benefits

The proposed observer program will collect catch, effort, and discard data seasonally and spatially within Delaware Bay for an otherwise data poor fleet. The data collected by this project will be used by regional management organizations to aid in future management and stock assessment. This pilot study will greatly improve the accuracy of data feeds to the ACCSP, and help characterize the commercial inland gillnet fleet within Delaware Bay. Data collected through this project will be invaluable to fisheries managers throughout the Atlantic coast and will help understand species interactions in relation to certain gears characteristics, areas, and seasons that can aid in bycatch reduction.

Data Improvement

Data collected in the proposed project will prove beneficial to both state and federal partners. Benefits include improved accuracy of discards, establishing species conversion factors, and validating accuracy of reported data through the commercial harvester trip reports. Information on species interactions with gillnet gear types will be greatly improved through this project. Data collected through this project will help characterize the level of bycatch within the fleet, and allow fisheries managers to better understand the size, number, and condition of protected species impacted by the fleet. This proposal will also provide metadata relating to the seasonal and spatial characterization of bycatch, discards and protected species interactions.

ACCSP has funded *The Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries* since 2006 and will continue through FY2016. In unison with the maintenance project, this pilot will enhance the quality of fishery-dependent data collected by the NJDFW.

Conversion Factors

Establishing conversion factors of discarded species is important to the quality of data collected by the NJDFW and provided to the ACCSP. Currently, through the NJ Commercial Harvester Trip Reports, species discards are reported in numbers opposed to pounds. This reporting methodology has created a data gap for both the NJDFW and the ACCSP making it difficult to quantify the amount of discards within state fisheries. Along with collecting catch and effort data, the proposed study will improve biological data provided to the ACCSP by establishing conversion factors for all discarded species within the fishery. Using the conversion factors, the NJDFW will develop translation tables for discarded species and will improve the quality of trip data submitted to the ACCSP.

Approach:

At-Sea Observer Coverage: An ACCSP Fisheries Specialist will be hired in January 2018. Hired staff will complete observer trips aboard commercial gillnet vessels within New Jersey state waters of Delaware Bay, and will target 50 trips from March through November. Based on NJDFW Shad Logbooks, GNMEP and Atlantic menhaden harvester reports, the trip target will provide 5% coverage of the fleet.

Prior to the fishing season, the selected Fisheries Specialist will contact vessel captains and owners of willing fishery participants. After compliant fishermen have been identified, observer trips will be completed cooperatively aboard the commercial gillnet vessels. A portion of requested funds for the project will include fisherman incentives of \$150 per trip. Outreach to commercial Delaware Bay gillnet fishermen has already begun, with mixed interests. The budgeted incentives will insure an increased desire of participation from the fishermen who were

hesitant to accommodate an observer. Commercial fishermen were more interested to participate with some extent of monetary compensation (NJ 5).

The Fisheries Specialist will be trained to properly collect and record data, following protocols closely related to NMFS guidelines. The focus of the Fisheries Specialist will be to collect bycatch data (length/weight) and document protected species interactions. The fisheries specialist will also be responsible for data entry and analysis when observer trips are not being completed. Data will be coded and made available according to ACCSP standards.

For species in which New Jersey does not have conversion factors for, samples will be sorted by grade code. Species will additionally be sorted by ACCSP standard market categories, where applicable. (i.e. striped bass bycatch has a wide range of sizes depending on gillnet mesh size). With new commercial reporting requirements in the state of New Jersey, the Division of Fish and Wildlife has come across the issue of not having conversion factors for quantity units not previously encountered. By being able to convert these unknown units into usable poundage, NJDFW will be able to better analyze catch data, as well as meet ACCSP requirements for data feeds. These conversions factors will be used for New Jersey specific finfish and shellfish species for use in the ACCSP data feeds (NJ 1).

Data Entry and Validation:

Data collected from each observed trip will be entered according to ACCSP data standards into an observer database. Data will then be checked for accuracy and validated by the Fisheries Specialist. After QA/QC is performed, all data collected will be provided to the ACCSP bi-annually via data feeds.

Geographic Location: A NJDFW Supervising Biologist will serve as the principal investigator, assisted by a hired ACCSP Fisheries Specialist serving as project staff. The project will be administered through the New Jersey Department of Environmental Protection (NJDEP) by the New Jersey Division of Fish and Wildlife Bureau of Marine Fisheries at the Nacote Creek Research Station in Port Republic, New Jersey.

The primary location of observer coverage will be based within New Jersey state waters of Delaware Bay and its tributaries. Observer areas of focus will include statistical areas 171- Delaware Bay, 185 - Cape May Point to Fortescue, 186 - Fortescue to Hope Creek, and 187 - Hope Creek to Com. Barry Bridge, as displayed in Figure 1.

Milestone Schedule:

The NJDFW Supervising Biologist will oversee the implementation of the project. NJDFW staff will hire and supervise the ACCSP Fisheries Specialist, manage the project budget, and submit

all progress reports to the ACCSP. The hired ACCSP Fisheries Specialist will coordinate and complete observer trips, enter and check collected data, code and submit data feeds to the ACCSP, and develop conversion factors for all harvested species. The timeframe for carrying out this project is listed below.

Milestone Schedule

Description of Activity	Month														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Staff Hiring	X														
Observer training	X	X													
Purchase supplies		X													
Observer coverage			X	X	X	X	X	X	X	X	X				
Data Entry, data coding, data submissions, QA/QC				X	X	X	X	X	X	X	X	X			
Report Writing							X						X		X
Data Analysis							X						X	X	X

Budget Summary (NJ 3):

Item		Calculation	Total NJ DFW in-kind support	
Salaries (NJDFW)				
Supervising Biologist 5% in-kind		\$96,416 x 5%	\$4,821	
Senior Biologist- 25% in-kind (current FTE)		\$58,906 x 25%	\$14,727	
Clerical 10%		\$53,640 x 10%	\$5,364	
Fringe benefits (46.35% on FTEs)		(\$4,821 + \$14,727 + \$5,364) x 46.35%	\$11,547	
Department Network account (OIRM)		\$1,500	\$1,500	
NJ DFW indirect costs (20.29% of salaries)		\$4,821 + \$14,727 + \$5,364 + \$11,547	\$36,458	
Subtotal NJ funds		\$4,821 + \$14,727 + \$5,364 + \$11,547 + \$49,823	\$74,416	
Append to ACCSP Administrative Grant				
	Units	Description	Cost	Explanation
Salaries (NJ ACCSP Staff)				
(a) 1 ACCSP Fisheries Specialist (ASMFC employee)	1	(2080hrs x 20.50/hr)	\$42,640	1 Full time Fisheries Specialist for observer trips, data entry analysis, QA/QC
(b) Benefits 25%	1	25% of total salary	\$10,660	
Travel Expenditures				
(c) Travel (mileage and tolls)		7,142 Miles x \$0.54/mile	\$3,525	50 Trips at estimated 125 miles round trip (Nacote Creek to Delaware Bay) + tolls encountered
(d) Supplies				
Safety Supplies	1	PFDF(\$225), Gloves (\$30)	\$255	Personal Flotation Device for safety
Clothing	1	Rain gear (\$200/set), Boots (\$100)	\$300	Rain Gear and Boots for safety
Sampling Supplies (Measuring boards, bushels, misc. sampling equipment)		Measuring boards, bushels, misc. sampling equipment	\$500	Sampling apparatus to record catch data, and transport samples.
GPS Units	1	GPS Unit (\$150)	\$150	Observer will carry GPS to log location of gear and endangered species interactions
(e) Other				
Fishermen Incentives		\$150/day x 50 Observer Trips	\$7,500	
* ACCSP Overhead (35%)		35 % of the sum of budget items a, b, c, d, & e	\$22,936	
Total to append to ACCSP Administrative Grant			\$88,466	
Total Project Costs = Subtotal NJ Funds + Total to append to ACCSP Admin Grant			\$162,882	

NJ Division of Fish and Wildlife

Pilot Study: Characterization of Bycatch and Protected Species Interaction in the New Jersey Delaware Bay Inshore Gillnet Fishery

Items highlighted gray aid in referencing the ranking criteria found on pages 9-10. Items highlighted yellow reference changes to the original proposal based on the initial proposal comments.

Budget Narrative:

(a) Salary: NJ ACCSP Staff

(1) ACCSP Fisheries Specialist annual salary

(b) Benefits of above employee

25 % of the annual salary for the ACCSP Fisheries Specialist

(c) Travel expenditures

Miles traveled based on an estimated round trip of 125 miles from the Nacote Creek Research Station to Delaware Bay, plus tolls encountered for 50 trips.

125 miles round trip x 50 trips = 6,250 miles

6,250 miles x \$0.54/mile = \$3,375

\$3,375 + (50 trips x \$3.00 in round trip tolls) = \$3,525

(d) Supplies

A list of gear and safety devices needed to adequately sample while observing. Items include: rain gear, a GPS, PFD, gloves, and miscellaneous sampling equipment.

(e) Other

Includes cost of incentives for fishermen who partake in the observer program

\$150/ day x 50 trips = \$7,500

Also included is ASMFC overhead listed at 35% of a, b, c, d, & e
($\$42,640 + \$10,660 + \$3,525 + \$1,205 + \$7,500$) x 0.35 = \$22,936

The budget for the new project is in two components consisting of the NJDFW in-kind match and the requested ACCSP Administrative Grant Total. **The total cost of the requested funding plus in-kind contributions is \$162,882 (NJ 3).** Included in the requested ACCSP Administrative Grant is the cost of 1 full time ACCSP Fisheries Specialist plus employee benefits. The remaining amount of requested funding will be used for sampling supplies, safety equipment, travel expenditures, and fishermen incentives to carry at-sea observers.

The in-kind funding provided by the NJDFW includes; salaries for NJDFW full time employees under the title of Supervising Biologist, Senior Biologist, and Clerical; as well as department network support and computer support for staff working under the ACCSP Project. Sources of in-kind funding come from the annual state appropriation for the NJ Bureau of Marine Fisheries.

Proposal Summary for Ranking Criteria

Proposal Type: *New*

Primary Program Priorities:

This project will fulfill data needs for two of the ACCSP modules: Bycatch/Species Interaction (50%), and Biological Sampling (40%).

Bycatch/Species Interaction: To characterize and document bycatch and protected species interactions within New Jersey's inland gillnet fleet through at-sea observer coverage. (See page 3)

Biological Sampling: Collect biological data to establish conversion factors for both retained harvest and discards in line with ACCSP standards. (See page 3)

The Mid-Atlantic Inland Gillnet fleet (9) ranks in the top quartile of the ACCSP Bycatch Sampling Priority Matrix. Bycatch data will be collected on protected species including Atlantic sturgeon, marine mammals and turtles. (See Page 4)

Through this project the NJDFW will collect biological discard data on 10 regionally managed species including Atlantic croaker, Atlantic menhaden, bluefish, weakfish, spot, American shad, black drum, river herring, horseshoe crab, and striped bass. River herring (8), Atlantic menhaden (9), and American shad (16) rank within the top quartile of the ACCSP Biological Prioritization Matrix. (See Page 4)

Project Quality Factors (Partners, Funding, and Data)

Multi-Partner/Regional impact including broad application: Through this project data will be collected on 10 regionally managed species including Atlantic croaker, Atlantic menhaden, bluefish, weakfish, spot, American Shad, black drum, river herring, horseshoe crab, and striped bass. Thus, state partners, federal agencies and regional management organizations will benefit from this project. Data collected on protected species will further benefit state and federal agencies. All data collected will be documented according to ACCSP Standards and will be submitted via data uploads. (See Page 5)

Funding Transition Plan: The initial funds requested through this pilot program will go directly to the salary of an ACCSP Fisheries Specialist and administering the at-sea observer coverage. (See Page 7) Presently, NJ's Marine Fisheries Administration's (MFA) Strategic Plan is going through a departmental review, after which it will be made available to constituents for comment. Included in the draft Strategic Plan is to include an observer position for the fishery dependent unit.

In-kind Contribution: The NJDFW is providing 46% of the total project costs (NJ 3). (See Page 7)

Improvement in data quality/quantity: This proposal will help characterize bycatch, discards, and protected species interactions within the Mid-Atlantic Inland Gillnet Fleet. This project will improve the accuracy and timeliness of bycatch and biological data feeds provided to the ACCSP as well as expand the breadth of information available within a data poor fleet. This project will expand both data quantity and quality to assist federal and state fisheries managers with future management and stock assessments. (See Page 4)

Secondary module as a by-product:

Catch and Effort (10%): This proposal will help characterize catch and effort within the Mid-Atlantic inland gillnet fleet. Data obtained through observer coverage will be used as a cross reference with the already established NJ Commercial Harvester Trip Reports to improve the accuracy of fisheries-dependent data feeds to the ACCSP. (See Page 4)

Metadata: Data collected through this project will be made available as metadata relating to seasonal and spatial characterization of bycatch, discards and protected species interactions. (See Page 4)

Impact on Stock Assessment: Biological and discard data collected through this project will aid in the future management and stock assessment of 10 regionally managed species including Atlantic croaker, Atlantic menhaden, bluefish, weakfish, spot, American shad, black drum, river herring, horseshoe crab, and striped bass. This project will also obtain bycatch information for protected and prohibited species encountered within NJ's Delaware Bay Inland Gillnet Fleet. (Pages 3-4)

This proposal was prepared and formatted following the ACCSP standards for the FY2017 Funding Decision Guideline.

Literature Cited:

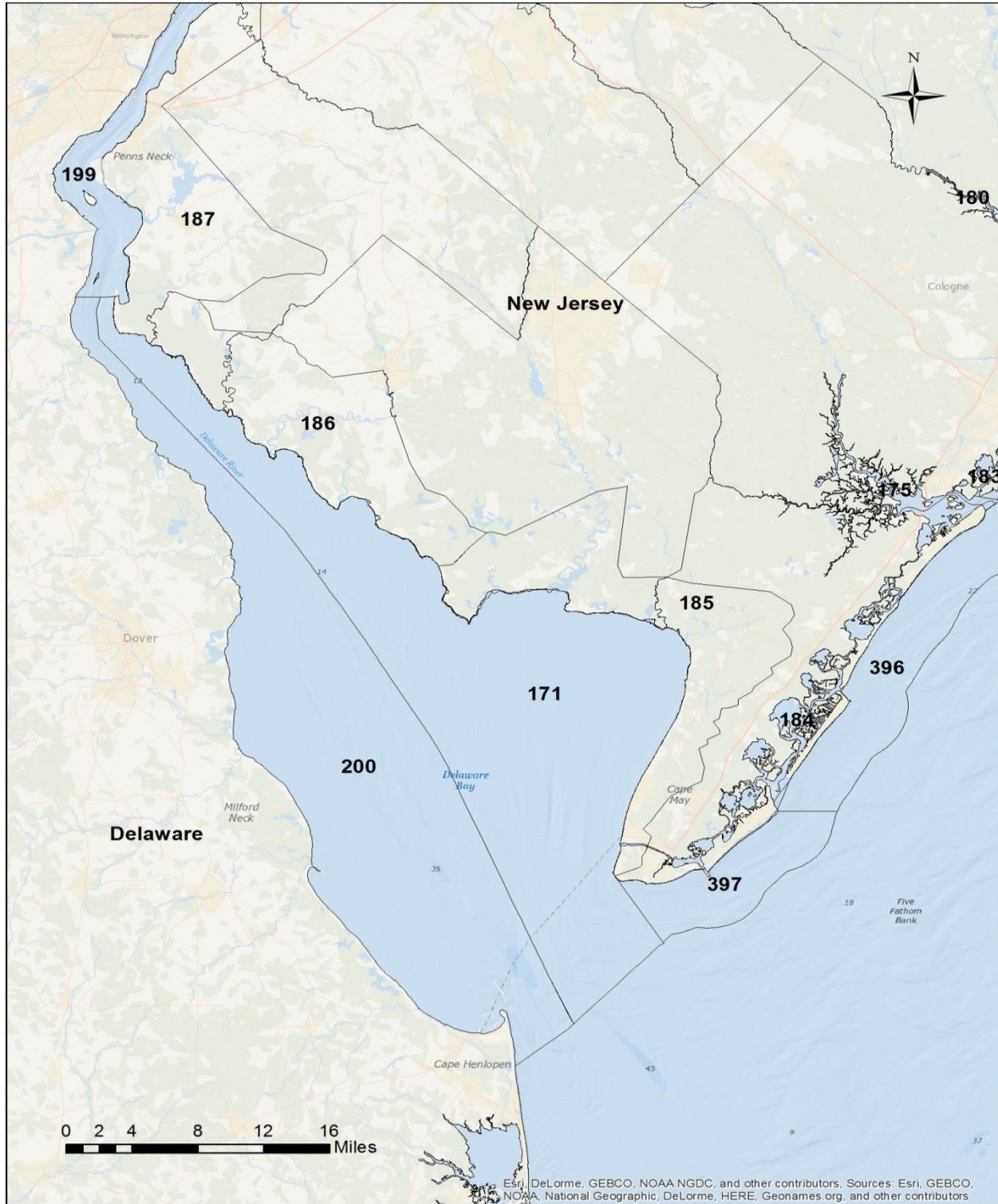
Atlantic Sturgeon Status Review Team. 2007. Status Review of Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*). Report to National Marine Fisheries Service, Northeast Regional Office. February 23, 2007. 174 pp.

Atlantic Sturgeon Plan Review Team. 2016. 2016 Review of the Atlantic States Marine Fisheries Commission Fishery Management Plan for Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*) for fishing year 2013 and 2014. Report to the Atlantic States Marine Fisheries Commission. February 2016.

Endangered Species Act of 1973. 16 U.S.C. Sections 1531-1544. December 28, 1973

Marine Mammal Protection Act of 1972. 16 U.S.C. 1361-1407. October 21, 1972

Figure 1. Sampling locations within the NJ state waters of Delaware Bay



Thomas A. Baum, Jr.

P.O. Box 418 Port Republic, NJ 08241
(609) 748-2020 | tom.baum@dep.nj.gov

OBJECTIVE: To ensure the wise use of New Jersey's fisheries resources by conducting sound, scientific research surveys of various fish populations throughout the state.

EDUCATION Stockton College; BS in Marine Science, Magna Cum Laude, May 1981

EMPLOYMENT

April 2012 to present	New Jersey Department of Environmental Protection	Port Republic, NJ
Division of Fish & Wildlife, Bureau of Marine Fisheries <i>Supervising Fisheries Biologist:</i> Serve as proxy for NJ Division of Fish & Wildlife Director on various ASMFC Management Boards and as the State Designee on the Mid-Atlantic Fishery Management Council. Prepare proposals, budgets and progress and annual reports for federal aid grants. Draft state fishery regulations for review NJ Marine Fisheries Council and Marine Fisheries Administrator.		
August 1999 to April 2012	New Jersey Department of Environmental Protection	Port Republic, NJ
Division of Fish & Wildlife, Bureau of Marine Fisheries <i>Principal Fisheries Biologist:</i> Serve as NJ's representative on various interstate technical committees. Provide input into management plans. Co-investigator for the Division's Striped Bass Monitoring and Compliance Project. Identify data needed to be collected for stock assessment of various species.		
Dec. 1991 to Aug. 1999 Sept. 1986 to Dec. 1991	NJDEP, Div. of Fish & Wildlife, Bureau of Marine Fisheries	Port Republic, NJ
<i>Senior Fisheries Biologist</i> <i>Assistant Fisheries Biologist:</i> Assisted in the development and implementation of management programs for the State's fisheries resources. Conducted surveys of estuaries and coastal waters and sampled fish populations using various types of gear, including gill nets, trap nets, fyke nets, trawls, seines and dredges.		
Nov. 1984 to Aug. 1986	E.A. Engineering, Science & Technology, Oyster Creek Power Plant	Forked River, NJ
<i>Environmental Specialist:</i> Design and conduct studies to determine the immediate and latent effects that the Oyster Creek Power Plant has on impinged and entrained organisms. Collect fish and shellfish specimens for a Radiological Environmental Monitoring Program. Supervise and train technicians in proper sampling procedures. Participated in a fluorometric dye study of treated effluent discharged from the Ciba-Geigy Chemical plant into the Atlantic Ocean.		
Jan. 1984 to Jan. 1985	National Marine Fisheries Service,	Gloucester, MA
<i>Fisheries Compliance Inspector:</i> Live aboard foreign fishing vessels to ensure that the captains comply with US regulations as defined by the Magnuson-Stevens Act of 1976. Kept daily, weekly and cumulative catch logs. Estimate catch in metric tons for each trawl. Take weights of frozen blocks of fish to determine amount of catch more accurately. Act as a liaison between American and foreign ships. Take random biological samples consisting of length frequencies, weights, sexual maturity stages and otoliths.		

NJ Division of Fish and Wildlife
Pilot Study: Characterization of Bycatch and Protected Species Interaction in the New Jersey Delaware Bay Inshore Gillnet Fishery

Items highlighted **gray** aid in referencing the ranking criteria found on pages 9-10. Items highlighted **yellow** reference changes to the original proposal based on the initial proposal comments.

April 1982 to Feb. 1984	NJDEP, Div. of Fish & Wildlife Division, Bureau of Shellfish	Port Republic, NJ
<i>Senior Fisheries Worker:</i> Sample shellfish and invertebrate populations using dredges, rakes and tongs.		
May 1980 to August 1980	Marine Biologicals Inc.	Marmora, NJ
<i>Lab Technician:</i> Collect Horseshoe crabs and extract their blood employing and produce raw Limulus Amebocyte Lysate. Analyze Lysate to determine its sensitivity.		

COMMITTEES Atlantic States Marine Fisheries Commission (ASMFC)

- Summer Flounder, Scup, Black Sea Bass Management Board (2013 – present)
- Bluefish Management Board (2013 – present)
- Coastal Sharks Management Board (2013 – present)
- Spiny Dogfish Management Board (2013 – present)
- Winter Flounder Management Board (2013 – present)
- American Lobster Management Board (2013 – 2016)
- Atlantic Herring Section (2013 – present)
- Striped Bass Technical Committee (1996 - 2006)
- Striped Bass Stock Assessment Sub-Committee (1993 - 2003)
- Striped Bass Tagging Sub-Committee (1993 - 2006)
- Summer Flounder, Black Sea Bass & Scup Technical Committees (2006 – 2013)

Atlantic Coastal Cooperative Statistics Program (ACCSP)

- Coordinating Council (2013 – present)
- Operations Committee (2006 - 2013)
- Recreational Technical Committee (2003 – 2013)
- Computer Technical Committee (2000 - 2006)
- Biological Review Panel (2006 –2009)
- By-Catch Committee (2006 - 2009)

Mid-Atlantic Fisheries Management Council

- New Jersey State Designee for NJ Division of Fish & Wildlife Director (2013 – present)
- Summer Flounder, Black Sea bass, Scup & Bluefish Monitoring Committees (2006 – 2013)

PUBLICATIONS

- Weisberg, S.B., P. Himchak, T. Baum, H.T. Wilson and R. Allen;
Temporal trends in Abundance of Fish in the Tidal Delaware River Estuaries, Vol. 19, No. 3 – September 1996; pages 723 – 729.

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

Ensuring Accountability in Maryland's Pilot Electronic Reporting Program using Dockside Monitors

Submitted by:
Bradley Walters
Maryland Department of Natural Resources
580 Taylor Ave, B-2
Annapolis, MD 21401
Bradley.Walters@maryland.gov

Applicant Name: Maryland Department of Natural Resources

Project Title: Ensuring Accountability in Maryland's Pilot Electronic Reporting Program using Dockside Monitors

Project Type: New Project

ACCSP Program Priorities: Catch and effort (100%)

Principal Investigator: Bradley Walters

Requested Award Amount: \$138,386

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

Original Date Submitted: June 13th, 2016

Objective:

To ensure the accountability of our E-Reporting with FACTS™ program by implementing a pilot dockside monitoring program to verify reported harvest.

Need:

Maryland law requires that every licensed commercial fisherman report their catch on forms provided by the Department of Natural Resources (Maryland Annotated Code 4-206). Maryland's paper report forms are accepted on a monthly basis, but reflect trip-level harvesting. While some license holders use SAFIS to report harvest, it is still only required to be entered on a monthly basis. This frequency of reporting prohibits verification of harvest. Several perceived incentives exist that promote misreporting of harvest: fear of harvest history being used to determine future access to the fishery results in over-reporting, while under-reporting stems from the idea that more can ultimately be harvested. Both approaches are detrimental to fishery participants due to increased management uncertainty. Maryland DNR and the industry, together, have identified the ability to verify harvest information as one of the most important factors contributing to the confidence and usability of self-reported landings.

Verification of landings data provides a significant improvement in the quality of landings data. Without verification, sources of misreporting and the incentives to misreport will continue regardless of the platform used to self-report. Incentives to misreport are often a response to management decisions (or expected management decisions); as more species such as menhaden and, likely, eels fall under rigid management controls both industry and managers will benefit from harvest verification. Increased certainty in harvest numbers and the resulting transparent management decisions can provide industry with the information necessary to make better business decisions.

Beginning in 2012, Maryland started a pilot project with stakeholders to improve blue crab harvest accountability and enhance management. An essential finding of the 2012 and 2013 blue crab pilot was that verification was the best way to improve user accountability (Slacum et al. 2013 and 2014). The pilot reporting process includes the submission of a start hail and end hail; this hailing component is fundamental to the ability of dockside monitors to verify harvest and provides for improved accountability. The pilot tool we provide fishermen to report their fishing activity and harvest is a responsive web design, and is known as FACTS™ (fisheryfacts.com). The program is currently voluntary, and we provide incentives to encourage license holders to use the system; more accountability means we can allow some limited flexibility in the existing harvest rules.

Maryland has expanded the pilot to include blue crab and all finfish harvested in Maryland state waters, as of January 1, 2016. As of June 3, 2016, we have 219 active crabbers and 91 active finfish account holders in FACTS™; in 2015 3,411 trips were reported, in 2016 1,821 have been reported in FACTS™ to date. Since 2014, we have not had funding to pay for dockside monitors, and Maryland's enforcement officers are not staffed at levels significant enough to provide harvest verification on the water.

This proposal details a previously-used approach to harvest verification, which will provide Maryland and our data partners improvements in the quality of our landings data.

Approach:

The approach to harvest verification was identified in the 2014 pilot (Slacum et al. 2013 and 2014) and will be used and modified here. We will continue to expand upon the work done in the previous pilot by modifying the protocol to incorporate finfish trips. We will also explore methods to integrate information obtained from dockside monitoring. Harvesters of managed species such as menhaden and

eel will be incentivized or required to use FACTS™ in reporting their harvest such that the majority of these species harvest will be reported electronically and subject to spot checks. This was very successful in monitoring 2016 yellow perch harvest.

Dockside “roving” monitors will conduct random spot checks; they will not be present to verify each trip, nor will they be available at the same locations each day. Scheduling will be designed to ensure that monitors can be present across multiple harvest locations on a daily basis and that all watermen have equal probability of being monitored during a monthly monitoring cycle. Random spot checks will be confirmed and potentially modified based on fishing activity, and watermen will be intercepted while they offload daily harvest from their vessels.

Watermen participating in the Pilot E-Reporting Program, are required to send a start hail and an end hail, with the estimated landing time and location. If conditions change on the water, best management practices dictate that they revise the state hail information. They are also required to comply with spot checks. Landing locations where spot checks occur consist of public landings, public and private marinas, and private residences. Offload locations will be grouped geographically into specific regions for planning and scheduling of daily spot checks. Monitoring regions may be defined around county boundaries or sub-county delineations, depending on reported locations. A list of counties and the number of trips occurring in each of the counties in 2015 is presented in Table 1.

Table 1. Landing location by county. Counties are in Maryland, unless otherwise indicated.

Landing Location County	Number of Blue Crab Trips	Number of Finfish Trips
Anne Arundel	372	25
Baltimore County	192	54
Baltimore City	0	2
Calvert	588	1
Caroline	4	6
Cecil	12	35
Charles	155	86
Dorchester	63	27
Harford	1	58
Kent	277	52
Prince George	10	11
Queen Anne	405	0
Somerset	651	0
St. Mary's	131	0
Sussex, DE	103	0
Talbot	667	95
Wicomico	19	0
Worcester	16	0

Data Collection

Six to eight roving monitors will conduct spot checks; each monitor will be responsible for monitoring harvest offload locations within one region into which the watermen are grouped. Monitors will attend training and be provided a manual to instruct them in the conduct of spot checks. Training will also include a visit to a harvest offload location where monitors will witness and document harvest as it is offloaded from a vessel. Staff will accompany each monitor on their first two scheduled spot checks to ensure the monitors are proficient with protocols. Monitors will be issued a tablet, and provided a unique monitor account within the electronic reporting system (FACTS™) to schedule daily spot checks and to document harvest. The data elements collected by the monitors are available in Table 2. When Maryland harvest data are supplied as part of semi-annual data feeds to the ACCSP Data Warehouse, the data collected by monitors will be included as metadata for the trips sampled. DNR electronically transmits all finfish, crab, and shellfish harvest data (paper reports and electronic submissions) for the previous year in March and September to ACCSP.

Table 2. Data elements collected by the dockside monitors.

Trip Details	Blue Crab Harvest Details	Finfish Harvest Details
Date	Quantity of #1 Males	Species Name
Trip Start	Quantity of #2 Males	Unit (lbs, bushels, boxes, baskets)
Time of Arrival at Landing Location	Quantity of Females	Species Quantity
Time Spot Check Occurred	Quantity of Mixed Males	
Fisherman Name	Quantity of Peelers	
Spot Check Location	Quantity of Soft Crabs	
Spot Check Conducted (Yes/No)	Quantity of Eels	
Trip ID#		
Comments		
Fisherman's E-signature		

Scheduling

Spot checks will be scheduled so that 10% of all trips can be monitored in each region. All FACTS™ pilot participants will be ranked into three categories based on their level of activity: very high priority with trips between 0-20 days, medium-high priority with trips between 21-52 days, and low priority with trips between 53-208 days. Watermen with fewer trips reflect a higher priority because they are harder to encounter randomly. Watermen will be chosen to be monitored based on the priority list. The number of days each monitor will be scheduled to work will be dependent on the number of watermen with offload location in their region.

Monitors will access trip start hails to determine who is actively fishing each day. A priority list will be generated for each day in each region. For each day of monitoring, all watermen in each priority group will be randomly ordered and the orders will be merged into a single priority list for the day. This process ensures that all watermen within a group have equal probabilities of being monitored, that watermen from a lower priority group cannot be monitored before one of higher priority group, and that monitoring is random.

If a spot check on the highest priority waterman is successful, the monitor will spot check the next available waterman on the priority list if there is enough time to travel where the offload location is occurring. Watermen will be removed from the priority list as successful spot checks occur. All the

priority lists will be updated and reset after each four week period to account for new participating watermen and changes in effort for an individual waterman.

Sampling

Monitors will be expected to arrive a half hour prior to a scheduled offload so they will not miss an offload if a waterman arrives early. Monitors will conduct spot checks by observing the harvest on the deck of the vessel or as it is offloaded from the vessel. Watermen will be asked about harvest details, which will be entered into a tablet computer while they are onsite; when cellular service is poor, details will be documented on a data sheet to be entered later in the day. Monitors will not board vessels and will not sort through waterman’s harvest. Once all the information is collected, each waterman will be asked to corroborate what had been documented by signing the log to verify information.

QA/QC

Quality assurance and quality control checks will be conducted on a portion of spot checks to determine if monitoring protocols are being followed and to evaluate overall spot check reporting accuracy. Three QA/QC officers will conduct all checks. QA/QC checks will be randomly scheduled and consist of observing the monitor while they are conducting a spot check. QA/QC officers will also document harvest information separately from the monitor so that it can be used to evaluate reporting accuracy by roving monitors and watermen. Ten percent of spot checks will be targeted for QA/QC checks.

Results and Benefits

Independent verification techniques such as at-sea observers and dockside monitoring can be integrated into self-reporting to establish cross-checking and auditing of self-reported data and to increase incentives for industry to provide accurate self-reported data (Lowman et al. 2013). Ninety-five percent of the watermen surveyed during the 2014 Pilot stated that the roving monitors did not interfere with daily activity. Ninety-seven percent of watermen during that pilot agreed or strongly agreed that roving monitors conducting spot checks are required to maintain industry reporting accuracy and accountability. **This proposal expands upon electronic reporting efforts by increasing accountability of the information the MD DNR makes available to all partners of ACCSP.**

Although this proposal only covers the activities of current pilot participants (about 5% of the crabbers and finfish harvesters in Maryland’s Chesapeake Bay), the program is continuing to expand daily. Future expansions are planned to include the charter boat industry and the oyster fishery.

Geographic Location

The location and scope of the project would cover all of Maryland Chesapeake Bay watershed tidal landing locations.

Table 3. Milestone Schedule

	Month																
Task	-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Hiring	X	X							X	X							
Training			X								X						
Data Collection			X	X	X	X	X	X	X	X	X	X	X	X			
Reporting									X						X		X

Due to the hiring process, work will start two months after receipt of funds. Reporting 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 the time of the grant award.

Project Goals and Metrics

The goal of this project is to spot check 10% of all fishing and crabbing trips reported in FACTS™. This will be monitored and effort will be adjusted on a monthly basis. Overall, the goal of MD DNR is to improve the quality of our landings data state and fisheries-wide such that all landings are reliable and accountable. We will use the information collected during this pilot to evaluate the costs of monitoring 10% of all Maryland commercial fishing trips in the future.

Cost Summary and Outlook on Future Funding

The Pilot E-Reporting Program is currently funded through state general funds. Dockside monitoring in previous pilots was funded through NOAA disaster funds. We no longer have allocated funding for monitoring, and with the data collected here, we will be evaluating the costs associated with 10% trip monitoring. We will continue to work with our partners in E-Reporting and our partner agencies to find additional sources of funding to cover dockside monitoring.

In-Kind Costs

In-kind costs include the administration and maintenance of the FACTS™ system for E-Reporting. This includes any licensing fees. The state E-Reporting coordinator is responsible for recruitment and transitioning of watermen to E-Reporting with FACTS™. This includes any incentives for harvesters, tracking accountability, and providing customer service to all users. We will also need to adapt the previously used monitoring interface into the current version of the system, which includes adapting it to the finfish interface. These costs do not include the addition of major new functionality, such as coastal fisheries, shellfish harvesting, charter fishing, or dealers. These will be addressed from other funding sources.

Project Costs

Project oversight and support costs include developing a new process for finfish monitoring. This is different than adapting the FACTS™ interface for use by the monitors. Project costs also include the management of the monitors; hiring, training, and scheduling. Contract management costs are also included for activities such as QA/QC follow up and reporting project results.

Table 3. Cost Summary for Ensuring Accountability in Maryland’s Pilot Electronic Reporting Program using Dockside Monitors.

Item	Funding Source			
	MD DNR In-Kind		Requested from ACCSP	
	Personnel	Other	Personnel	Other
Electronic Reporting System Maintenance and Recruitment				
Electric Edge MD DNR	\$132,000	\$27,000		
E-Reporting Coordinator ¹ (100%)	\$85,362			
Database Programmer ² (50%)	\$49,420			
Program Manager ³ (30%)	\$33,995			
Oyster Recovery Partnership	\$80,000			
Materials (Tablets: \$50 and Service Plans: \$10/month)		\$680		\$850
Transportation 75 miles/assignment @0.56/mile for 700 assignments				\$29,400
Field Staff, \$13/hr, 20hr/wk			\$58,136	
2 Natural Resource Technicians, 10 months			\$22,360	
2 Natural Resource Technicians, 8 months			\$17,888	
4 Natural Resource Technicians, 4 months			\$17,888	
Project Oversight and Support ⁴				
• Contract Management – reporting, QA/QC			\$10,000	
• Monitor Management (hiring, training, scheduling)			\$15,000	
• Develop New Processes			\$25,000	
Column Totals	\$380,777	\$27,680	\$108,136	\$30,250
Funding Source Grand Totals	\$408,457		\$138,386	
Total Project Cost	\$546,843			
Percentage Contribution by Source	75%		25%	

¹Includes 56% fringe

²Includes 51% fringe

³Includes 47% fringe

⁴ Includes 35% fringe

References:

Lowman, DM, R Fisher, MC Holliday, SA McTee, and S Stebbins. 2013. *Fishery Monitoring Roadmap*.

Slacum, H.W. JR, H. Dew-Baxter, R. Corbin, and B. Richkus. 2013. Pilot Project to Test and Evaluate Rapid and Accountable Commercial Blue Crab Reporting in Maryland. Prepared for the Blue Crab Industry Design Team and the Maryland Department of Natural Resources. May 2013. Versar, Inc., 9200 Rumsey Rd., Columbia, MD. 21045.

Slacum, H.W. JR, H. Dew-Baxter, R. Corbin, and B. Richkus. 2014. Year 2: Pilot Project to Test and Evaluate Rapid and Accountable Commercial Blue Crab Reporting in Maryland. Prepared for the Blue Crab Industry Design Team and the Maryland Department of Natural Resources. December 2014. Versar, Inc., 9200 Rumsey Rd., Columbia, MD. 21045.

Summary of Proposal for Ranking Purposes

Proposal Type: New

Primary Program Priority: Catch and effort (100%)

Catch and Effort, 10% of all trips reported through the E-Reporting Program will be verified, although the potential for an intercept is known to improve reporting practices fleet-wide. We anticipate improved accountability for approximately 8,000 (7,000 crab trips, and 1,000 finfish) trips in the twelve month period covered by the requested funds.

Project Quality Factors:

Multi-Partner/Regional Impact including broad applications:

While this plan addresses E-Reporting harvest verification in Maryland, it includes the harvest of many regionally important species, including blue crabs, striped bass, and menhaden among others. Additionally, this approach to verifying self-reported harvest using an E-Reporting tool has applications across all commercial fisheries. Improved data quality impacts fisheries management partners such as ASMFC and associated states. This project is a partnership with Maryland DNR, Oyster Recovery Partnership (ORP), and Electric Edge (makers of FACTS™).

Funding Transition Plan

We will continue to determine the level of work required and seek additional funding for monitoring.

In-kind Contributions

75%

Improvements in Data Quality

Overall, the goal of MD DNR is to improve the quality of our landings data state and fisheries-wide such that all landings are reliable and accountable. This proposal provides the verification that drives the accountability of our E-Reporting Program.

Potential secondary module as a by-product

Socio-Economic: *Appendix L: Social & Economic Data Considerations* identifies the need to address latent effort within fisheries. This verification and accountability was designed to more clearly identify those license holders that may be considered latent: either their license reflects zero harvest (when they may or may not be fishing) or they have harvest history while, in reality, they are not harvesting. This ability to identify the true latent harvesters because we can verify who is or is not on the water, addresses this concern.

Innovative:

We are not aware of any state that uses an E-Reporting Program with a hailing component to improve harvest accountability.

Bradley C. Walters

Profile

- Developed a diverse background with 4 years in marine biology, 23 years in business systems development (insurance, accounting, payroll, purchasing, car dealerships, medical logistics, marine industry, MD DNR commercial fisheries), and 6 years in marine sales.
- Completed new systems development efforts in a variety of environments: IBM System 34, IBM mainframe 370, IBM AS/400, Client/Server, and PC.
- Demonstrated proficiency with COBOL, JCL, CICS, MS Access, SQL, SQL Server, HTML, CSS, JavaScript, Visual Basic, ASP, and ADO.
- Solved business problems integrating emergent technologies such as: optical character recognition, bar coding, EDI (Electronic Data Interchange), CASE tools, and databases.
- Provided project management for 12 years, supervising projects through all life cycle phases of development to successful implementation and operational support.
- Implemented CMM recommendations achieving SEI level 2+ resulting in business improvements stabilizing the development process. Also completed study of PMP processes.

Education BA, Computer Sciences, Dean's List, University of West Florida
BA, Marine Sciences, University of West Florida

History

Database Programmer, MD Dept of Natural Resources, 2012-Curr

- Provide programming support to existing Crab, Finfish, and Shellfish commercial data entry applications. Installed system enhancements streamlining old processes and increasing data integrity.
- Created system for administrating Oyster Aquaculture leases.
- Developed database model for allocating Striped Bass fishing quotas to individual watermen.
- Implemented standardized technical infrastructure.
- Developed Striped Bass Individual Quota Management System. Also combined applications for managing 6 other permitted species into a single system.
- Helped facilitate the development of an electronic harvest reporting system for all fisheries and supported the data interchange between DNR and the contractor.

Consultant 2008-Curr

- Developed a prototype marina slip management system using Visual Basic and Excel. Then created a production application using Access. Constructed a web & SQL server version.
- Providing technical consulting to US Yacht Shows. Used Access and Visual Basic to create or update renewals, contracts, invoices, specialized queries for accounting and web site data loads. Resulted in a significant reduction of manual processes, improved accuracy and research capability.
- Created a course registration system for a boat show featuring marine education.
- Created an HTML presentation for Flexible Solutions in support of a multi-million dollar law suit.

Systems Engineer & Supervisor, EDS, DC, Dallas, & Detroit 1984-1998

- Flood Insurance account: developed Optical Character Recognition bill reading front end for a multi-company lock box system feeding a mainframe system. Promoted to Systems Engineer.
- Car Insurance account: led development in accounting, billing & collections, policy administration, reinsurance, conversion, document management on mainframes. Promoted to SE Supervisor.
- GM Dealer Systems account: supervised Rapid Application Development of systems for prospecting, inventory, finance & insurance systems on AS/400's. Utilized CASE tools with RAD methodology including facilitated JAD sessions
- DOD Medical Logistics account: supervisor for Prime Vendor system, Database Administration, System Administration, & Business Objects in a client/server environment. This effort created a single system used by each of the armed forces which supports inter-operability, especially critical during war. The project earned several government commendations in addition to reducing costs. Also provided internal support to EDS' Government Systems division with the implementation of SLIM estimating and CMM level II recommendations.

Proposal for Funding made to:
Atlantic Cooperative Statistics Program
1050 N. Highland Street, Suite 200
Arlington, VA 22204

Data Entry and Management of Commercial Fisheries Paper Trip Tickets in Georgia

Submitted by Julie Califf
Georgia Department of Natural Resources
Coastal Resources Division
One Conservation Way
Brunswick, GA 31525

Applicant Name: Georgia Department of Natural Resources

Project Title: Data Entry and Management of Commercial Fisheries Paper Trip Tickets in Georgia

Project Type New

Principle Investigator Julie Califf

Requested Award Amount \$92,036

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

Date Submitted: June 13, 2016
Revision submitted August 17, 2016

Updated or additional text highlighted in yellow

Atlantic Coastal Cooperative Statistics Program

Project Narrative

Project Title: Collection, Entry, and Management of Commercial Fisheries Paper Trip Tickets in Georgia

Applicant Name: Georgia Department of Natural Resources, Coastal Resources Division

Principal Investigator: Julie Califf

Project Objective:

To collect, enter, and edit commercial fisheries effort and landings data from paper-based trip tickets

Need:

Since 2000, the Georgia Department of Natural Resources (GADNR) has collected ACCSP-compliant standardized trip-level data for 100% of all marine and diadromous commercial fisheries in Georgia. With the exception of Federal dealer data, all of Georgia's commercial trip tickets currently require data entry by GADNR staff.

Georgia was recently awarded an ACCSP grant to develop and pilot web-based and mobile reporting. At the end of the grant period (June 2017) GADNR will make electronic reporting available to all of Georgia's commercial seafood dealers. However, the Department does not anticipate all of the dealers will be early adopters. Some dealers do not have access to the technology or otherwise are not capable of reporting electronically while others may choose to take a "wait and see" approach. It should be noted GADNR currently lacks the authority to require dealers to report electronically and has no plans to pursuing legislation to make e-reporting mandatory in the near future. As noted above, access to broadband and other technology is still limited in parts of Coastal Georgia. Should electronic reporting become mandatory some dealers would be out of compliance through no fault of their own. As such, the Department must continue to accommodate the submission of paper tickets.

The State of Georgia does not have a funding source to fully support the collection of commercial landings data. Increases in the fringe rate set by State Personnel Administration coupled with decreases in other Federal funding for data collection have put commercial data collection in Georgia in jeopardy. During 2015 and 2016 GADNR attempted to secure funds from other sources including:

- National Fish and Wildlife Foundation (NFWF)
- Legislation to re-structure commercial fishing licenses and license fees

The NFWF grant was not funded as it did not fully fit the program's funding priorities. The Georgia General Assembly chose not to pass the proposed legislation even though it would have

resulted in a much-needed increase in revenue. It is not known if or when the Department will attempt to have the legislation re-introduced.

Approach:

Collection and entry of paper-based trip level landings reports in compliance with ACCSP standards.

- All of Georgia's commercial dealers will record harvest, effort, and value for each trip and submit the trip-level records to GADNR by the 10th of the subsequent month. Trip records not entered electronically will be mailed, faxed, or emailed to project staff. There are approximately 250 dealers and harvester-dealers in Georgia.
- Incoming tickets will be proofed for completeness and accuracy. Staff will reach out to dealers for clarification and corrections as needed.
- Paper trip ticket data will be entered in the GADNR landings database within 10 days of receipt.
- Data quality checks will be conducted regularly and suspect records will be flagged for follow-up and correction.
- A report will be made monthly to the Law Enforcement Division (LED) with a listing of dealers in arrears.
- Data will be uploaded to the ACCSP data warehouse weekly. All data will be transmitted with the appropriate ACCSP codes and formats.
- Project staff will work with other state agencies, the fishing community, local municipalities and utilize web searches and social media to identify new seafood dealers.
- Dealers will be encouraged to utilize electronic reporting.

Results and Benefits:

The Georgia trip ticket program is comprised of three staff with a combined 51 years of experience working with Georgia's trip ticket data (the project leader and two marine technicians). All tasks of the program related to commercial data collection, entry, and editing are carried out by these three individuals. They include seeking out new dealers to insure all landings are captured (Georgia does not have a dealer's license), entering data, proofing and editing data, tracking compliance and alerting Law Enforcement of reporting arrears, insuring

weekly data uploads to ACCSP are successful, fulfilling data requests, and biological sampling. Should this grant be funded, it will allow GADNR to continue performing all of these tasks in a timely and efficient manner. If funding is not secured, at least one of these three positions will be eliminated thereby, increasing the work load per staff member. This will impact the timeliness of data entry and availability, the ability to report data to both internal and external customers, and reduced effort in seeking out new dealers to insure 100% reporting coverage. Without funding the *lack* of results and benefits are extreme and severe due to the loss of 1/3 of the program staff.

Geographic Location:

The location and scope of this project covers coastal Georgia and inland counties with anadromous fisheries.

Table 1. Milestone Schedule

Task	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Data collection and Entry	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Data QA/QC	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Weekly uploads to ACCSP	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Report Writing							X								X

Project Goals & Metrics:

The goal of this project is to collect, enter, edit, and supply ACCSP accurate trip-level data from commercial seafood dealers in Georgia who submit landings via paper tickets. The goal will be considered to be met if all identified dealers have complied with reporting requirements, fully edited data has been transferred to the ACCSP data warehouse, and data are available to GADNR’s internal and external customers.

Cost Summary & Outlook on Future Funding:

The GADNR trip-ticket program is primarily funded by the State-Federal Cooperative Statistics Program (CSP). GADNR offers limited in-kind support in the form of IT and supervisory personnel, administrative support, fuel costs, telecommunications and facilities use. Decreased CSP funding coupled with the State shifting more costs to the Federal projects including higher fringe rates, file storage, IT fees, and computer rental has severely impacted the program budget. For example, the fringe rate has increased from 4.225 % in FY 2010 to 62.914 % expected in FY

2017. The Department will continue to pursue other grants and legislative changes but the outcome of these efforts is impossible to predict. It is likely GADNR will continue to seek ACCSP funding but the amount needed may decrease over time as expenses are reduced with electronic reporting. Quantifying the decrease is not possible at this point as we cannot predict the percentage of harvesters that will adopt electronic reporting. However, it is only logical that project costs will decrease as a portion of the data entry, printing of forms, and postage expenses are eliminated. To date, ACCSP has funded three trip-ticket related proposals for Georgia (Table 3)

Table 2. Cost Summary

	Requested from ACCSP		GADNR In-Kind	
	Months	Salary	Months	Salary
Personnel Expenses: All current staff				
Commercial Statistics Project Leader (Catch and Effort)	3	\$13,228		
Marine Technician II (Catch and Effort)	6	\$19,918		
Marine Technician I (Catch and Effort)	7	\$21,075		
Oracle Programmer/IT Support (Catch and Effort)			3	\$19,518
Statistics Unit Program Leader (Catch and Effort)			0.5	\$2,571
Chief of Marine Fisheries (Catch and Effort)			0.5	\$3,628
Administrative Support (Catch and Effort)			0.5	\$1,535
Total Salary Cost		\$54,221		\$27,252
Fringe Cost (62.914 %) GA does not charge overhead (1)		\$34,114		\$17,145
Total Personnel Expenses		\$88,336		\$44,397
Miscellaneous Expenses				
Vehicle Fuel Travel to seafood dealers for outreach, delivery of material, and training of new dealers				\$1,540
Office Space Rent \$1.66 per sq. ft. x 146 sq.ft x 3 full time employees (2)				\$3,877
Postage business reply mail , incoming and outgoing mail (3)		\$1,650		\$1,750

Printing: trip tickets (2500 3- part carbon-less forms @ \$0.53 each)		\$1,325		
Office Supplies : Envelopes, large mailers, file folders, file storage boxes, pens, markers, printer paper		\$725		
Total Miscellaneous Expenses		\$3,700		\$7,167
Total Costs		\$92,036		\$51,564
Total Project Cost	\$143,600			
Percentage Contribution		65%		35%

1. Fringe Rate as set by the State. Although the fringe rate is high it should be noted Georgia does not charge an indirect or overhead rate.
2. Calculation based upon Government workspace standards and GADNR calculated annual cost per square foot of office space.
3. Georgia offers postage-paid reply envelopes for dealers to submit landings. Postage expenses are also incurred when returning incomplete reports and sending non-compliance letters to dealers. For FY 2015 the trip-ticket program spent \$955 on outgoing mail and \$3,600 on incoming business reply mail.

Table 3. Georgia commercial fisheries trip ticket related grants funded by ACCSP

Funding Year	Title	Funded Amount	Description
1999	Implementation of Georgia's Trip Ticket Program	\$191,378	Launched mandatory trip-level reporting for all fisheries in Georgia and conducted socio-economic studies for the crab fishery. \$97,900 of the grant was spent directly on trip-ticket related activities
2011	Validation of Commercial Finfish and Shellfish Conversion Factors	\$43,086	Conducted sampling to verify and update conversion factors
2016	Piloting Electronic Data Collection and Data Sharing	\$46,584	Develop and pilot mobile and web reporting of commercial trip tickets

	System in Georgia		
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Summary of Proposal for Ranking Purposes

Proposal Type: New

Primary Program Priority:

Catch and Effort: 95%

- 100% of Georgia’s commercial seafood dealers and dealer-harvesters will report trip level catch and effort data. As noted in the ACCSP “Twenty Years in Review” Georgia was the first partner to begin collecting trip level reports for all fisheries.

Multi-Partner/Regional impact including broad applications:

- Regionally managed species are collected via the trip-ticket program and made available to fishery managers via ACCSP.

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

- Program costs such as printing and postage should decrease as more dealers utilize electronic reporting
- GADNR will continue to pursue other funding sources including non-ACCSP grants and legislative efforts to increase license revenue

In-kind contribution:

- 35% (Table 2)

Improvement in data quality/quantity/timeliness:

- Should this proposal not be funded the timeliness and quality of Georgia’s trip ticket data will be negatively impacted. Due to reduced staff, the lag time between receipt of data and entry will increase and data QA/QC checks will be delayed. This will affect the availability of data to the ACCSP data warehouse.

Potential secondary module as a by-product:

- Social and Economic 5% - The value of seafood products landed will be collected for each trip.

Impact on stock assessment:

- Lags in data availability and quality could negatively impact stock assessments.

Properly Prepared:

- This proposal follows the guidelines under the ACCSP Funding Decision Process Document.

Appendix A: Curriculum Vitae for Principle Investigator

Julie Ross Califf

Georgia Department of Natural Resources
One Conservation Way
Brunswick, GA 31520
(912) 264-7218
Julie.Califf@gadnr.org

Education:

Georgia College
Milledgeville, GA
B.S. Biology, 1991

Related Career Experience:

November 1997 – present, Georgia Department of Natural Resources, Brunswick, GA

Project Leader for the Coastal Cooperative Statistics Program: Supervise all aspects of the collection, entry, verification, and transmission of commercial catch and effort data. Serves as Georgia's representative to the Commercial Technical, Information Systems, and Outreach committees.

March 1995 – November 1997, Georgia Department of Natural Resources, Brunswick, GA

Commercial Fisheries Port Agent: Collected commercial landings data from seafood dealers, performed data entry and data edits.



United States Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southeast Fisheries Science Center
3500 Delwood Beach Rd
Panama City, FL 32408
850-234-6541 ext. 221

August 12, 2016

Elizabeth Wyatt
Program Coordinator | Atlantic Coastal Cooperative Statistics Program
1050 N. Highland St., Suite 200 A-N
Arlington, VA 22201

Dear Ms. Wyatt,

Please find attached a revised new project proposal entitled, “Estimation of bycatch in the South Atlantic Snapper-Grouper fishery: a comparison of self-reported logbooks and on-board observers” for consideration for the 2016 Atlantic Coastal Cooperative Statistics Program. The proposal seeks to collect catch, bycatch, discard information and biological samples from commercial vessels targeting mid-water and deep-water reef fish species in the U.S. South Atlantic vertical and longline fishery via on-board scientific observers and provide comparisons with self-reported logbook data to determine the associated level of bias. The funding requested reflects the sampling days needed to carry out 2% observer coverage based on the current level of fishing effort. However, the proposal is scalable and the number of sea days can be reduced or increased depending on the review committee’s recommendation.

Please let me know if you have any questions and thank you for your consideration.

Sincerely,

John K. Carlson, Ph.D.
Research Fish Biologist

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

Estimation of bycatch in the South Atlantic Snapper-Grouper fishery: a comparison of self-reported logbooks and on-board observers

Submitted by:
John Carlson
NOAA Fisheries Service-Southeast Fisheries Science Center
3500 Delwood Beach Rd
Panama City, FL 32408

Applicant Name: NOAA Fisheries Service-Southeast Fisheries Science Center

Project Title: Estimation of bycatch in the South Atlantic Snapper-Grouper fishery: a comparison of self-reported logbooks and on-board observers

Project Type: New

Principal Investigator(s): John K. Carlson, Beth M. Wrege, Jennifer Potts

Requested Award Amount: \$333,000 (scalable)

Requested Award Amount Including NOAA Grants Administration Fee:

Requested Award Period: July 2017-June 2018

Original Date Submitted: June 10, 2016

Revised Date Submitted: August 12, 2016

Objective: To collect information on discards (quantity and size and age samples) from commercial vessels targeting reef fish species in the U.S. South Atlantic vertical line fishery via on-board scientific observers. The results will be used to develop essential inputs to stock assessments. NOAA Fisheries Service-Southeast Fisheries Science Center (SEFSC) will be conducting a review of sampling approaches for commercial fisheries in the South Atlantic and Gulf of Mexico during 2017-2019. These observer data will be critical for designing future observer programs for the primary fisheries in the South Atlantic. Comparisons between these data and other data sets (self-reported discards, earlier random observer sampling (year to year variability) and earlier non-random sampling) will be conducted.

Need:

Observer coverage of the US south Atlantic reef fish fishery has been limited (Table 1). The Gulf and South Atlantic Fisheries Foundation conducted at-sea sampling of the vertical line fishery using a small number of selected highliners (about 30 vessels) which were not necessarily representative of the fleet (approximately 450 vessels) (Helies and Jamison 2013). No biological samples (e.g. otoliths, gonads) were collected during those surveys. In 2014, the Southeast Fisheries Science Center conducted a randomized survey of the south Atlantic vertical line fishery using 62 days at sea to record information on catch, bycatch and collecting biological samples at a rate of 4.0 samples per sea day from vermilion snapper, red porgy, red snapper, gag grouper, and gray and yellowtail snapper (Enzenauer et al. 2015).

Comparison of self-reported discard rates and observed discard rates from the commercial snapper-grouper (2014 survey) indicate that observed discard rates are roughly 5x to 100x higher than self-reported (Table 2). Inclusion of substantially increased commercial discards in stock assessments for many of the snapper grouper stocks has the potential to impact estimates from most stock assessments and the management advice for U.S. South Atlantic species (SAFMC 2006). The exact impacts will depend on several factors including the degree of change, the level of total discards relative to total catch, the discard mortality rate, and whether there is a time trend in the discard data. Depending on the combination of factors it has the potential to affect the scale of population estimates (e.g. changes in MSY, ABC, ACL, etc.), as well as changes in relative stock status (e.g. overfished or overfishing). For instance, both commercial and recreational landings of red snapper (overfished and overfishing) have been prohibited for the last two years and red porgy (overfished) landings have been restricted for several years. In order to use the logbook data in bycatch estimates, the level of under or over reporting in logbooks relative to the observer data must be determined. Increased observer effort at any level would improve bycatch estimates and provide more accurate data. In addition, estimates of bias in self-reported discards will benefit future assessments and provide guidelines for appropriate management.

The proposed sampling will also result in size observations and age tissue samples from discarded fish that will also provide essential information for the stock assessments. Those samples will be processed by SEFSC within 2 years after collection.

The SEFSC will be conducting a review of its commercial fisheries sampling programs in the South Atlantic and Gulf of Mexico over the next three years. The information from this survey will be used with the information from the 2014 MARFIN supported survey to develop a

sampling design for future at-sea observer coverage. The 2014 survey covered a broad area with a relatively small number of sea days. The proposed survey will roughly double the number of observations and will greatly increase the ability of statisticians to develop useful designs for future surveys.

Table 1. Historical observer programs for the South Atlantic Reefish Fishery.

PROGRAM	FUNDING SOURCE	PERIOD	NUMBER OF FISHING EVENTS	BIOLOGICAL SAMPLES COLLECTED
Gulf & South Atlantic Fisheries Foundation, Inc.	Cooperative Research Program	Jan 2007-Feb 2008	1679	0
Gulf & South Atlantic Fisheries Foundation, Inc.	Cooperative Research Program	Aug 2008-Jul 2009	966	0
Gulf & South Atlantic Fisheries Foundation, Inc.	Cooperative Research Program	Nov 2010-Dec 2011	734	0
NOAA Fisheries-Panama City Observer Program	MARFIN	Feb 2014-Jan 2015	408	226

Table 2. A comparison of average discard rates (number per hook hour on trips which discarded that species) and average size discarded for the vertical handline fishery targeting reefish as recorded by on-board observers and those reported to the Coastal Fishery Logbook Program by vessel Captains. Data are from Feb 2014-Jan 2015 for observers and logbooks.

Species	Observer recorded discards	Average size (cm FL)	Logbook recorded discards	Average size (cm FL)
Vermillion Snapper	3.03	37.6	0.23	n/a
Red porgy	1.18	30.4	0.25	n/a
Gag grouper	0.52	28.3	0.02	n/a
Red snapper	0.55	56.3	0.12	n/a
Greater Amberjack	1.52	78.1	0.04	n/a
Scamp	0.55	47.0	0.02	n/a
Black sea bass	0.93	23.4	0.15	n/a
Almaco jack	0.77	76.1	0.08	n/a

Approach:

We proposed to continue observer coverage following Enzenauer et al. (2015). The sampling design would entail stratified random sampling with quarter (1, 2, 3, 4) and fishery (handline, bandit rig and bottom longline) with region (north or south of 30° N latitude) as an additional variable for the handline bandit rig fisheries as the stratification variables. The sample for each stratum would be selected as follows:

- 1) Prior year's logbook data for a stratum are used to estimate the total sea days (over all trips) for all trips by vessels (longline or vertical line) in that stratum (geo-region in the south Atlantic and during that quarter);
- 2) Trips are randomly selected from the list frame of trips recorded from the prior year; and,
- 3) The vessel owners/captains are notified that trips taken this year will include an observer until a minimum number of days fishing (usually 7) are observed.

A contract statistician (3 months) will evaluate the current design and modify where necessary based on the results from the previous MARFIN award and data from the Coastal Fisheries Logbook programs from vertical line and longline vessels with snapper/grouper permits. The contract statistician would provide analysis of the temporal, geographic and fishery stratification and also the design of the sampling so that sufficient samples would be obtained from fisheries of shorter duration due to management effects such as the bag limits and quotas. Priority will be placed on the bandit and handline snapper-grouper fisheries north of 30°N, then the bandit and handline snapper-grouper fisheries south of 30°N and lastly on the bottom longline fishery.

Observer methods will be followed as described for the Panama City Longline Observer Program (Hale et al. 2012, Enzenauer et al. 2015), as appropriate. Contracted observers will be trained prior to deployment on vessels to record detailed information concerning gear characteristics, location and time the gear is set and retrieved, environmental conditions, status and action of the marine life caught by the gear (alive or dead, kept or discarded), as well as morphometric measurements (length and weight) and sex identification of each animal. Observers will be instructed to enumerate numbers of fish discarded, obtain lengths of the entire catch, to focus age sampling on discarded catch and to focus reproductive sampling on the full size range. Observers will also record incidental interactions with marine mammals, sea birds, sea turtles, and smalltooth sawfish using methods outlined by SEFSC/Protected Resource Division. Collections of biological samples will be performed at sea with a target of a minimum of 5 samples per sea day from a randomly selected pool of reef fish. Otoliths will be stored in envelopes, while gonads will be fixed in a solution of 10% formalin until the vessel returns to port and samples can be processed.

To estimate the level of under or over reporting, pairwise comparisons on a trip by trip basis will be made using the Coastal Fisheries Logbook data and observer data collected as part of this study. Comparisons will be made for the dominant reef fish species measuring bias associated with discards (live vs dead) over a temporal (season) and spatial (statistical grid) scale.

Results and Benefits:

The results of the proposed study will provide critical information to assess vital stocks of reef fish in U.S. South Atlantic waters. Specifically, data collected estimate the levels of under or over reporting of reef fish discards in the mid-water and deep-water reef fish fisheries. In addition, essential life history information will be collected from catch and discards in a spatially stratified manner. Robust information on ages and reproductive schedules of snappers and groupers throughout their range in the U.S. South Atlantic is a primary component of the planned stock assessments. Snowy grouper, blueline tilefish, gray triggerfish, red grouper, and tilefish are identified in the Atlantic Coastal Cooperative Statistics Program (ACCSP) FY 2016 Biological Priority Matrix. Species in the upper 25% of the priority matrix will be considered for funding

and sampling projects that cover multiple species within the upper 25% are highly recommended. All of these species are caught in the south Atlantic reef fish fishery.

The South Atlantic Snapper Grouper Handline/Electric Reel fishery has been identified within the Top Quartile of Prioritization with the Matrix Bycatch Sampling Priority Matrix. The project will fulfill data needs for three of the ACCSP modules in order of priority: 1) Biological Data (50%), 2), Discards, Bycatch and Protected Species Data (45%) and 3) Catch and Effort, and Landings Data (5%).

Data will be stored on a centralized database that will be described in the InPort meta-data system. The centralized database will be accessible to individuals within the SAFMC, ASMFC and others with confidentiality agreements with NOAA Fisheries Service. As the data collection protocols and data standardization follow observer protocols the data can be merged with previous data collection efforts and provided for assessment usage.

References:

Enzenauer M.P., S.J.B. Gulak, B.M. Deacy, and J.K. Carlson. 2015. Characterization of the southeastern U.S. Atlantic mid-shelf and deepwater reef fish fisheries. NOAA Technical Memorandum NMFS-SEFSC-679, 18 p

Hale, L.F., S.J.B. Gulak, A.N. Mathers, and J.K. Carlson. 2012. Characterization of the shark and reefish bottom longline fishery, 2011. NOAA Technical Memorandum NMFS-SEFSC-634, 27 p.

Helies, F.C and J.L. Jamison. 2013. Continuation of Catch Characterization and Discards within the Snapper- Grouper Vertical Hook-and-Line Fishery of the South Atlantic United States. Gulf & South Atlantic Fisheries Foundation, Inc. Final Report. NOAA/NMFS Award Number NA10NMF4540102 (GSAFFI #113).

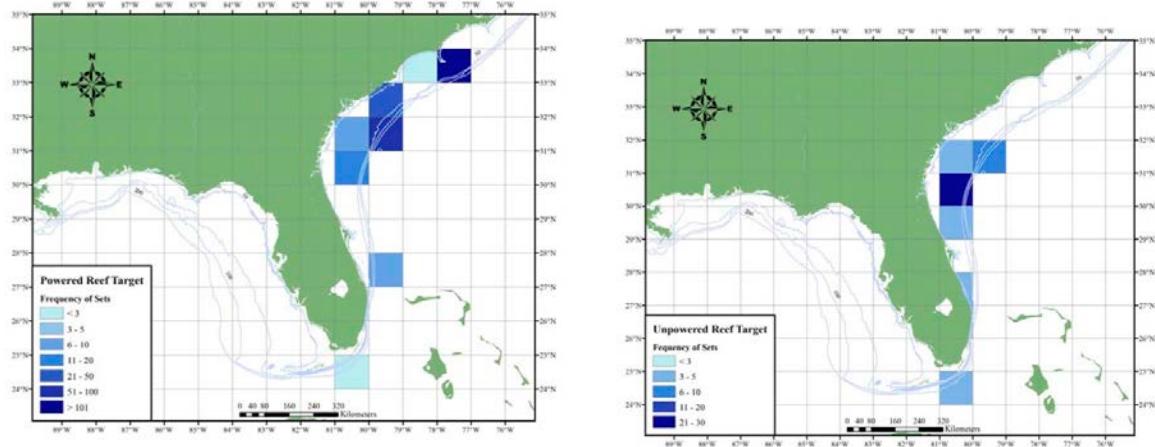
South Atlantic Fishery Management Council (SAFMC). 2006. Final Snapper Grouper Amendment 13C. South Atlantic Fishery Management Council, North Charleston, SC 29405.

Geographic Location:

The observer program will be coordinated from the NOAA Fisheries Panama City Laboratory in Panama City, FL. The location and scope of observer coverage will be in the US south Atlantic from about North Carolina to the Florida Keys. Figure 1 illustrates the distribution of observed hauls (electric powered reel and unpowered handline reel) in 2014 by gear in the southeastern U.S. Atlantic.

The NOAA Fisheries Service-Southeast Fishery-Independent Survey and the Marine Resources Monitoring, Assessment, and Prediction (MARMAP) conduct fishery-independent monitoring targeting reef fish in southeast U.S. continental shelf waters to support reef fish stock assessments and assessment of spatiotemporal distribution and habitat affiliation patterns of

reeffish. While overlap in sampling occurs in some areas of the southeast, these fishery-independent programs do not sample in depths beyond the shelf break. Moreover, as these surveys are fishery-independent no information is collected on discards or disposition fates of commercially caught fish.



**Milestone Schedule:
(Months following grant award)**

Task	Month													
	1	2	3	4	5	6	7	8	9	10	11	12	13-15	
Develop sampling frame	X													
Vessel selection	X			X			X			X				
Observer coverage		X	X	X	X	X	X	X	X	X	X	X		
Observer debriefing, data entry		X	X	X	X	X	X	X	X	X	X	X	X	
Database QA/QC		X	X	X	X	X	X	X	X	X	X	X	X	
Analysis/report writing														X
Final report														X

Budget Narrative:

Observers

Observer costs are based on an assumed randomized sampling procedure and are based on previous bottom longline costs of \$ 1.3 K per sea day (includes observer salary, travel, overtime, and overhead). A query of the Coastal Fisheries Logbook data for vessels fishing in the south Atlantic possessing an active reef fish permit indicates about 12,500 sea days occurred from July 2013-June 2014. A number of budget scenarios are provided among a series of observer coverage levels based on those estimated sea days. Reductions in expected sampling fractions ultimately lowers the level of precision when estimating bycatch rates.

In-Kind

In-kind contribution to this project includes the Principal Investigator(s) time in overseeing the project for both the observer portion and the sample processing and analysis. The SEFSC will be working with a statistician from the University of Miami on commercial fishery survey design.

In-Kind contribution is also being made for the resources of the Observer Coordinator (Enzenauer) to manage the day-to-day activities of the observer program and the Database manager for support of the InPort meta data system.

Percent coverage (%)	Sea days	Observer costs	Observer supplies	Sample processing and supplies	TOTAL
1	125	\$162,500	\$3,000	\$2,000	\$167,500
2	250	\$325,000	\$3,000	\$5,000	\$333,000
3	375	\$487,500	\$3,000	\$7,000	\$497,500

	ACCSP (Observer coverage 2%)	ACCSP (Observer coverage 1%)	NMFS In-Kind
Personnel			
PI salaries (33%)			\$91,800
Observer coordinator (33%)			\$27,621
Contract statistician			\$25,000
Observer costs	\$333,000	\$167,500	
Database management			\$20,000
TOTAL	\$333,000	\$167,500	\$164,061

Summary of Proposal for Ranking Purposes:

Proposal Type: New

Primary Program Priority:

Catch and Effort, Biological Sampling, Bycatch, and social and economic impacts:

Catch, age and reproductive samples and discard data will be directly collected by on-board observers. Data collected from species in this study and from this fishery are of high importance to ACCSP. The South Atlantic Snapper Grouper Handline/Electric Reel fishery has been identified within the Top Quartile of Prioritization with the Matrix Bycatch Sampling Priority Matrix. The project will fulfill data needs for three of the ACCSP modules in order of priority: 1) Biological Data (45%), 2) Discards, Bycatch and Protected Species Data (50%) and 3) Catch and Effort, and Landings Data (5%). Robust information on ages and reproductive schedules of snowy grouper, blueline tilefish, gray triggerfish, red grouper, and tilefish will be collected and are identified in the Atlantic Coastal Cooperative Statistics Program (ACCSP) FY 2016 Biological Priority Matrix.

Species in the upper 25% of the priority matrix will be considered for funding and sampling projects that cover multiple species within the upper 25% are highly recommended. All of these species are caught in the south Atlantic reef fish fishery.

Metadata: Data will be stored on a centralized InPort meta data system which will be accessible to individuals within the SAFMC, ASMFC and others with confidentiality agreements with NOAA Fisheries Service. As the data collection protocols and data standardization follow observer protocols the data can be merged with previous data collection efforts and provided for assessment usage.

Project Quality Factors:

Multi-partner/Regional impact: Data collection from this project will affect every data user to the assessment process in our region: NMFS, state agencies, commissions, ACCSP, etc.

Contains defined end-point: It will take approximately one year to implement the number of sea days funded. If weather or other issues precludes the projected sampling rate, the project will continue until all sea days funded have been observed. The proposal is to collect sufficient information to adequately characterize variability in discard rates and size/age composition of discards for use in developing future survey designs. It is anticipated that one year of sampling supported by ACCSP when combined with the 2014 MARFIN study will be sufficient for characterizing the discards of primary species from the vertical line fishery. If not, the SEFSC might request future funding for this project. The SEFSC anticipates conducting a similar pilot project for the reef fish bottom longline fishery and might submit future proposals for that effort.

In-kind contribution: NMFS is providing 98% of the total project costs under the scenario of one percent observer coverage and 49% of the total project costs under the scenario of two percent observer coverage.

Improvement in data quality/quantity/timeliness:

The current voluntary reef fish observer program in the south Atlantic is biased due to the spatial distribution of the sampled trips and the behavior of the sampled vessels. In addition, the observers in that program do not collect any biological samples. Using a new statistically robust strategy will improve sample design (and thus data quality), improve the level of information and biological samples from discarded fish and enhance the quality of inputs for stock assessment.

Impact on stock assessment

Critical to all future assessments is the accurate collection of data on catch, bycatch and life history for reef fish species. There is a definitive need for more information about mid and deep-water species in the south Atlantic vertical and bottom longline fishery with better on-board documentation of composition and disposition of commercial catch and biological sampling as needed for assessments.

Curriculum Vitae(s):

John K. Carlson

Current position and professional address:

Research Fish Biologist, National Marine Fisheries Service/Southeast Fisheries Science Center, 3500 Delwood Beach Rd., Panama City, FL 32408, 850-234-6541 ext 221, FAX:850-235-3559, e-mail: john.carlson@noaa.gov

Education:

Ph.D., 1998, The University Of Mississippi, Biological Sciences.

M.S., 1991, Southern Connecticut State University, Biology.

B.S., 1988, Southern Connecticut State University, Biology.

Special Assignments, Committees, Graduate Student Direction and Service.

Acting Laboratory Director, as needed. 2002-present.

Scientific Chair, Convention on Migratory Species Shark Memorandum of Understanding PMAC Scientific Evaluation Committee, NOAA/National Marine Fisheries Service. 2009-2015.

Acting Division Chief, Southeast Fisheries Science Center/Sustainable Fisheries Division. Feb-Apr 2009

Fishery Bulletin Editorial Committee 2008-

Marine Biology Editorial Committee 2014-

IUCN-Shark Specialist Group Regional Co-Vice Chairman, NW Atlantic Region, 2007-present

Team Leader, Smalltooth Sawfish Recovery Team, 2006-present

Graduate and undergraduate student mentoring and committee service, (3 post-doctoral, 6 Ph.D., 9 M.S., and 25 B.S. students from various universities).

Select Lectures and Symposia (Total presentations: 43)

Strategies for the recovery of smalltooth sawfish, *Pristis pectinata*. International Marine Conservation Congress. May 2011

Problems and solutions in the analysis of shark populations. North Carolina State University Seminar Series 2010.

Habitat use and movement patterns of bull sharks determined using pop-up satellite archival tags. Shark International Conference, Cairns, Australia. 2010.

The status of the sand tiger shark in the northwest Atlantic Ocean. American Society of Ichthyologist and Herpetologists/American Elasmobranch Society Annual Meeting. Portland, OR 2009.

Is the US population of night shark (*Carcharhinus signatus*) a species of concern to the Endangered Species Act? American Society of Ichthyologist and Herpetologists/American Elasmobranch Society Annual Meeting. St. Louis, MO. 2007.

Aspects of shark bioenergetic models and their role in fisheries assessment. Louisiana State University. Department of Oceanography and Coastal Fisheries Seminar Series.

Select internal and external competitive funding (total funding to date: \$2661.3 K):

Use of a video electronic monitoring system and archival satellite pop-off tags to estimate

smalltooth sawfish bycatch mortality in shrimp trawl fisheries in the Gulf of Mexico. 2013. NOAA/NMFS/Cooperative Research Program. \$271.1 K

The effect of circle hooks on shark catchability, at-vessel mortality and post-release survival rates in bottom longline fisheries. NOAA/NMFS/Cooperative Research Program. 2012. \$299.0 K.

Assessment of post-release mortality in sand tiger shark, *Carcharias taurus*, landed through Delaware's shore based recreational fishery. Office of Protected Resources-Species of Concern Program, 2011. \$33.9 K

Determination of alternate fishing practices to reduce mortality of prohibited dusky shark, *Carcharhinus obscurus*, in commercial longline fisheries. 2010 NMFS Bycatch Reduction Engineering Program \$88.1 K

Using meta-analysis to determine the status of the US population of sand tiger shark, *Carcharias taurus*. (co-P.I. Enric Cortés, Kate Siegfried). Office of Protected Resources-Species of Concern Program, 2007. \$35.0 K

Select Publications (of 71 total):

Carlson, J.K. and C.A. Simpfendorfer. 2014. Recovery potential of smalltooth sawfish, *Pristis pectinata*, in the United States determined using population viability models. Aquatic Conservation DOI: 10.1002/aqc.2434

Dulvy NK, Pardo SA, C.A. Simpfendorfer, J.K. Carlson. 2013. Diagnosing the dangerous demography of manta rays using life history theory. PeerJ PrePrints 1:e162v1 <http://dx.doi.org/10.7287/peerj.preprints.162v1>

Carlson, J.K., S.J.B. Gulak, C.S. Simpfendorfer, R.D. Grubbs, J.G. Romine and G.H. Burgess. 2013. Habitat use and movement patterns of smalltooth sawfish, *Pristis pectinata*, determined using pop-up satellite archival tags. Aquatic Conservation DOI: 10.1002/aqc.2382

Godin, A.C., J.K. Carlson, V. Burgener, 2012. The Effect of Circle Hooks on Shark Catchability and At-Vessel Mortality Rates in Longlines Fisheries. Bulletin of Marine Science 88:469-483.

Carlson, J.K., M.R. Heupel, D.M. Bethea, L.D. Hollensead. 2008. Coastal habitat use and residency of juvenile Atlantic sharpnose sharks (*Rhizoprionodon terraenovae*). Estuaries and Coasts DOI 10.1007/s12237-008-9075-2

Heupel, M.R., J.K. Carlson and C.A. Simpfendorfer. 2007. Shark nursery areas: concepts, definition, characterization and assumptions. Marine Ecology Progress Series 337:287-297

Carlson, J.K., E. Cortés and D. Bethea. 2003. Life history and population dynamics of the finetooth shark, *Carcharhinus isodon*, in the northeast Gulf of Mexico. Fishery Bulletin 101:281-292.

Carlson, J.K. and G.R. Parsons. 2001. The effects of hypoxia on three sympatric shark species: physiological and behavioral responses. Environmental Biology of Fishes 61:427-433.

Carlson, J.K., T.A. Randall and M.E. Mroczka. 1997. Feeding habits of winter flounder (*Pleuronectes americanus*) in a habitat exposed to anthropogenic disturbance. Journal of Northwest Atlantic Fishery Science 21:65-75

8700 FRONT BEACH RD, UNIT 7115 PANAMA CITY BEACH, FL 32407
PHONE 952-393-4612 • ENZEN004@GMAIL.COM
MICHAEL P. ENZENAUER

Objective

Expand my professional knowledge and passion for the environment by contributing high quality research for fisheries resource management.

Education

University of Minnesota, Minneapolis/St.Paul, MN

December 2010

B.S. Fisheries & Wildlife (Emphasis in Fisheries) Minor in Environmental Science Policy and Management

*Relevant Coursework: Aquatic Insects, Ecology, Biology of Fishes, Fish Physiology, Fisheries Ecology & Management, Limnology, Hydrology,

Biometry, GIS, general genetics, zoology, general biology and chemistry.

*Field Courses: Bimini Island shark ecology and marine habitat course in the Bahamas and Wildlife capture, immobilization and handling certification.

Normandale Community College, Bloomington, MN

December 2006

Associates of Arts

Experience

Riverside Technology Inc/IAP World Services

Shark Bottom Longline Coordinator

August 2012-Present

- * Provide administrative support to Southeast Fisheries Science Center (SEFSC) observer program and other senior biologists
- * Maintain a quality unbiased database by critiquing, organizing, proofing and entering observer data
- * Understand and process query manipulation, statistical analysis and technical writing for scientific reports
- * Provide up to date shark landings and monthly catch reports to HMS
- *Organize, oversee and dissect samples for diagnostic measurements
- * Competently communicate between observers, office staff, vessel owners, captains, coast guard, fish houses and other affiliated organizations as needed
- * Brief and/or debrief observers from fishing deployments and provide valuable feedback for improvement
- * Prepare training presentations, exercises and workshops for new or existing observers
- *Maintain, inventory, check-in and process logistical needs of field equipment
- *Update spreadsheets and documentation used for compliance reports, expenses, vessel selection, contact database and equipment

IAP World Services Pascagoula, MS

Bottom Longline and Gillnet Observer (117 seadays)

August 2011-August 2012

- * Complete 2 week NMFS Safety and southeast observer certification course
- * Live and Work as a fisheries observer on 1- 21 day trips around various locations in the Gulf of Mexico and southern Atlantic Ocean
- * Take species composition along with individual length and weight data of vessels catch
- * Collect biological samples such as otoliths, gonads, vertebrae, stomach and other various samples as needed
- * Successfully identify fishes and other species in the field
- * Monitor marine mammal and bird interactions
- * Record vessel fishing efforts such as coordinates, hook counts, gear types and soak times
- * Record and report all data to NMFS followed by detailed debriefing from a coordinator

Minnesota Pollution Control Agency, Saint Paul, MN

Field Technician/Student Worker

May 2011- July 2011

May 2010-August 2010

- *Fish collection using electro-fishing equip.
- *Macro invertebrates collection
- *Basic water-chemistry sampling techniques

- *Fish identification with dichotomous key
- *Assess biotic integrity
- *Investigate watershed and stream flow measurements
- *GPS navigation and site mapping

*Equipment maintenance

*CPR Certified

NWO inc. Edmonds, WA

Certified Groundfish Observer (90 day contract)

January 2011-April 2011

- *Complete 3-week NMFS training course for groundfish certification
- *Actively work on fishing vessels in the Bering Sea with extreme weather conditions
- *Provide independent catch estimates
- *Sample species composition
- *Provide fish identification and measurements
- *Collection of biological samples
- *Monitor marine mammal and bird interactions
- *Document fishing activity (set times, positions, gear performance, etc.)
- *Record and report all data to NMFS
- *Comply with all regulatory requirements
- *Carry out assigned special projects (eg. stomach collection, tagging, etc.)

Certifications

- *Marine Safety Instructor Training
February 2014
- *ATV Safety- License# 130069
April 2013
- *PADI open water dive- License# 13020N4703
February 2013
- *CPR, AED and Basic First Aid
January 2013

Beth Marie Wrege, Ph.D.
Fisheries Biologist/Spatial Data Analyst
Southeast Fisheries Science Center
75 Virginia Beach Drive
Key Biscayne FL 33149
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Beth.Wrege@noaa.gov
August, 2016

Education:

Ph.D. 2009 Wildlife and Fisheries Science, Clemson University.
M.S. 2007 Wildlife and Fisheries Biology, Clemson University.
M.C. 2000 Geographic Information Science, North Carolina State University.
B.S. / B.A. Biology / Geology, University of Wisconsin.

Professional Experience:

2015 – Fisheries Biologist, Fisheries Statistics Division, NOAA NMFS, Southeast Fisheries Science Center, Miami, FL 33249

2010 – 2013 Fisheries Biologist / Hydrologist, NOAA, NMFS, Protected Resources, San Joaquin River Restoration / Bay Delta, Sacramento, CA 95814

2009 – 2010 Post-Doctoral NSF-SEAGEP Fellow, Age and Growth of Loggerhead Turtles. Clemson University, Clemson, SC 29637.

2006 – 2009 Fisheries (Acoustic) Graduate Research Assistant, Forestry and Natural Resources, Clemson University, Clemson, SC 29637.

2006 Hydrologist, US Geological Survey, Raleigh, NC 1995-2006; Hydrologist - Langley AFB, 1992-1995; Denver, CO 1989-1992; Tempe, AZ 1983-1989; St. Paul, MN 1980-1983; Casper, WY 1979-1980

Publications:

Wrege, B.M., Duncan, M. S. and Isely, J. J. (2011), **Diel activity of Gulf of Mexico sturgeon in a northwest Florida bay**. Journal of Applied Ichthyology, 27: 322–326. doi: 10.1111/j.1439-0426.2010.01641.x

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Harper, C.J., Wrege, B. M. and Jeffery Isely, J. (2010), Striped Bass, *Morone saxatilis*, **Egg Incubation in Large Volume Jars**. Journal of the World Aquaculture Society, 41: 633–639. doi: 10.1111/j.1749-7345.2010.00404.x

Wrege, B.M., and Isely, J.J. (2009). **High-resolution hydro- and geo-stratigraphy at an Atlantic Coastal-Plain drillhole (CR-622)**. Stratigraphy Vol.6. Issue 1. p. 79-86. H

Hess, G. R., Daley, S.S., Dennison, B.K., Lubkin, S.R., McGuinn, R.P., Mori n V.Z., Potter K.M., Savage R.E., Shelton W.G., Snow C.M., Wrege, B.M., (2001). **Just what is sprawl, anyway?** Carolina Planning 26(2) (Summer 2001): 11-26. 2001

Wrege, B.H., Hasbrouck, W.P., and Schumann, H.H., **Seismic surface-waves attenuation across earth fissures in the alluvium, south-central Arizona**: in- Surface and borehole geophysical methods in ground water investigations: Second National Conference and Exposition (Barbara Graves, convener and others) Worthington, Ohio, National Water Well Assoc., p.121-131.

Schumann, HH, Tosline, DJ., and Wrege, B.M., **Occurrence and prediction of earth-fissure hazards caused by ground-water depletion in south-central Arizona**, U.S.A, in Repogle, IA, and Renard, K.G., eds., Water today and tomorrow, Specialty conference, Irrigation and drainage division of the American Society of Civil Engineers, Flagstaff, Arizona, July 24-26, 1984, Proceedings: American Society of Civil Engineers, p. 673.

Select Courses Taught:

GIS for Landscape Ecology (WFB442L/662L; 2008-2009). Clemson University.
Effective Scientific Posters (2000). Presented for NCWRA, AISES, ASPRS
Stormwater Pollution Prevention (1999-2004) Fort Bragg
Cultural Diversity, (2004) Distance Education, Menlo Park USGS
Introduction to Arc/Info (2002) Pamlico Community College, SC
Borehole Geophysics (2000–2006) NCWRD (NC Water Resources Division), EPA Philadelphia
Earth Science for Teachers and Students, (1989-2002) Pine Ridge Reservation (AISES)

CURRICULUM VITAE

Jennifer Chrestensen Potts
Research Fishery Biologist
NOAA/NMFS/SEFSC
101 Pivers Island Road
Beaufort, NC 28516-9722

EDUCATION

North Carolina State University B. S. 12/1988 Fisheries & Wildlife Sciences

East Carolina University M. S. 5/1997 Biology (Ecology)

PROFESSIONAL EMPLOYMENT

6/97 - present

Position: Research Fisheries Biologist.

NOAA/NMFS/SEFSC, Beaufort Laboratory, 101 Pivers Island Road, Beaufort, NC 28516-9722.

Responsibilities include Team Leader of Life History Team; collecting, cataloging, preparation and analysis of age samples; preparing manuscripts for peer review publication; Participation in SEDAR process – Life History Group Leader for South Atlantic assessments; training staff in ageing laboratory; reviewing proposals for federal government funding (i.e., MARFIN and S-K); reviewing manuscripts for peer review journals.

2/90 - 6/97

Position: Biological Technician (Fisheries).

NOAA/NMFS, Beaufort Laboratory, 101 Pivers Island Road, Beaufort, NC 28516-9722.

PUBLICATIONS

Burton, M. L., J. C. Potts and D. R. Carr. 2015. Age, growth and natural mortality of coney, (*Cephalophilis fulva*) from the southeastern United States. PeerJ 3:e825;DOI 10.7717/peerj.825.

Burton, M. L., J. C. Potts, D. R. Carr, M. Cooper, and J. Lewis. 2015. Age, growth and mortality of gray triggerfish (*Balistes capricus*) from the southeastern United States. Fishery Bulletin 113:27–39.

Burton, M. L., J. C. Potts, and D. R. Carr. 2014. Age, growth, and mortality of Yellowmouth Grouper from the southeastern United States. Marine and Coastal Fisheries: Dynamics, Management and Ecosystem Science 6:33-42.

- Burton, M. L., J. C. Potts, and D. R. Carr. 2012. Age, growth and natural mortality of rock hind, *Epinephelus adscensionis*, from the Gulf of Mexico. Bull. Mar. Sci 88(4).
- Palazón-Fernandez, J. L., J. C. Potts, C. S. Manooch, III, and C. Sarasquete. 2010. Age, growth, and mortality of toadfish, *Halobatrachus didactylus* (Schneider, 1901) (Pisces: Batrachoididae), in the Bay of Cádiz (southwestern Spain). Scientia Marina 74(1):121-130.
- Garcia, E. R., J. C. Potts, R. A. Rulifson, and C. S. Manooch III. 2003. Age and growth of yellowtail snapper, *Ocyurus chrysurus*, from the southeastern United States. Bulletin of Marine Science.
- Potts, J. C., and C. S. Manooch, III. 2002. Estimated ages of red porgy (*Pagrus pagrus*) from fishery-dependent and fishery-independent samples and comparison of growth parameters. Fishery Bulletin 100:81-89.
- Potts, J. C., and C. S. Manooch, III. 2001. Differences in the age and growth of white grunt from North Carolina and South Carolina versus southern Florida. Bulletin of Marine Science 68:1-12.
- Potts, J. C., and C. S. Manooch, III. 1999. Observations on the age and growth of graysby and coney from the southeastern United States. Transactions of the American Fisheries Society, 128:751-757.
- Potts, J. C., C. S. Manooch, III, and D. S. Vaughan 1998. Age and growth of vermilion snapper, *Rhomboplites aurorubens*, from the southeastern United States. Transactions of the American Fisheries Society 127:787-795.
- Manooch, C. S., III, J. C. Potts, D. S. Vaughan, and M. L. Burton. 1998. Population assessment of the red snapper, *Lutjanus campechanus*, from the southeastern United States. Fisheries Research 735:1-14.
- Manooch, C. S., III, and J. C. Potts. 1997. Age and growth of red snapper, *Lutjanus campechanus*, collected from North Carolina through east coast of Florida. Journal of the Elisha Mitchell Society 113(3):111-122.
- Manooch, C.S., III, and J.C. Potts. 1997. Age, growth, and mortality of greater amberjack from the southeastern U.S. Fisheries Research 30:229-240.
- Manooch, C. S., III, and J. C. Potts. 1997. Age and growth of greater amberjack from the Gulf of Mexico. Bulletin of Marine Science 61(3):671-683.



Atlantic Coastal Cooperative Statistics Program

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To the members of the Operations and Advisory Committees:

The FY2017 Administrative Budget request is similar to the FY2016 Administrative Budget request as we do not anticipate any significant changes in the Program's activities that are funded through the ACCSP Administrative Budget.

Changes to the FY2017 Administrative Budget request for this year includes an increase of approximately 5%. This is due primarily to planned staff salary increases and an increase of 25K in the contract support line needed to provide maintenance for eTrips/Mobile and eDR/Mobile.

Attachment 2 of the FY2016 Administrative Budget request contains the Implementation Plan and provides an overview of the high level tasks and milestones expected for the coming year.

Sincerely,

Michael S Cahall,

Director, ACCSP

**Funding Proposal
FY17 ACCSP Administrative Budget**

Applicant Name: Atlantic States Marine Fisheries Commission

Project Title: Administrative Support to the Atlantic Coastal Cooperative Statistics Program

Principal Investigator: Michael S. Cahall, Director, ACCSP

Requested Award Amount: **\$1,851,641**

Request Type: Maintenance/Administrative

Requested Award Period: March 1, 2017 through February 28, 2018

A. Goals

The Atlantic Coastal Cooperative Statistics Program (ACCSP) is a state-federal cooperative partnership between 23 entities responsible for fisheries management, and fisheries data collection on the Atlantic Coast: the 15 Atlantic coast states and the District of Columbia, two federal fisheries agencies (Commerce's NOAA Fisheries and Interior's U.S. Fish and Wildlife Service), three regional fisheries management councils (New England, Mid-Atlantic and South Atlantic), the Potomac River Fisheries Commission, and the Atlantic States Marine Fisheries Commission (ASMFC). Partner agencies are listed in the original [ACCSP Memorandum of Understanding](#).

The Program was established in 1995 to design, implement, and conduct marine fisheries statistics data collections programs and to integrate those data into a single data management system that will meet the needs of fishery manager, scientists and the general public.

By establishing and maintaining data collection standards and providing a data management system that incorporates state and federal data, ACCSP will ensure that the best available statistics can be used for fisheries management.

B. Objectives (based on the 2014-2018 Strategic Plan)

1. Manage and expand a fully integrated data set that represents the best available fisheries data;
2. Continue working with the program partners to improve fisheries data collection and management in accordance with the evolving ACCSP standards within the confines of limited funds;
3. Explore the allocation of existing Program funds and work with partners to pursue additional funding;
4. Maintain strong executive leadership and collaborative involvement among partners at all committee levels;
5. Monitor and improve the usefulness of products and services provided by the ACCSP;
6. Collaborate with program partners in their funding processes by providing outreach materials and other support to demonstrate the value of ACCSP products and the importance of maintaining base support for fishery-dependent data collection programs to state partners and their executive and legislative branches as well as to all other partner agencies
7. Support nationwide systems as defined in the Magnuson-Stevens Fishery Conservation and Management Act (MSA).

C. Need

Various state and federal fishery management agencies on the Atlantic coast collect data on the status and trends of specific fish populations and the fisheries that utilize these resources; however, it is often difficult to develop sound recommendations to fisheries managers due to inconsistencies in the way data are

collected and managed. The various data sets often cannot be integrated to provide accurate information at the state, regional, or coast-wide level. In addition, the disparate manner in which these data are collected and managed places duplicative burdens on fishermen reporting to multiple state and federal agencies and regions. Due to rapidly changing stock conditions, within-season regulatory changes and catch quotas have become common fishery management strategies. Timely and accurate harvest information for both recreational and commercial fisheries is required to determine the need for and effects of these management measures.

The [Atlantic Coastal Fisheries Cooperative Management Act of 1993](#) mandated a cooperative state-federal program for the conservation of Atlantic coastal fisheries. Section 804 of the Act requires the Secretaries of Commerce and the Interior to develop a program to support state fisheries programs and those of the ASMFC, including improvements in statistics programs. Since the mid-1990s, the ASMFC has provided administrative support for this coordinated effort to improve data collection and management activities.

In 1995 the states, the ASMFC, and the federal fishery management agencies on the Atlantic coast entered into a [Memorandum of Understanding \(MOU\)](#) to develop and implement a cooperative state-federal statistics program that will meet the management needs of all participating agencies. All program partners signed the MOU for the ACCSP at the Commission's 54th Annual Meeting in Charleston, SC. Following signing, an Operations Plan was developed to outline the specific tasks and timetables required to develop and initiate implementation of this program. Annual Operations Plans are developed by the ACCSP to provide guidance on further development and implementation of the Program.

D. Results and Benefits

The ACCSP developed and adopted 1999, 2004 and 2012 versions of the Program Design (now renamed [Atlantic Coast Fisheries Data Collection Standards](#)), which document the standards and protocols for collection and management of commercial, recreational, and for-hire fisheries statistics. Program partners developed and approved minimum data elements for collection of catch, effort, biological, social, and economic statistics. The ACCSP also developed standard codes and formats to ensure consistency of all data collected under the Program. These standards require periodic review and revision as the needs of fisheries managers and the state of the art of fisheries science changes.

In 2000, the first version of the [Data Warehouse](#) was made available to the program partners. Since then, it has grown to encompass a 50 plus year time series of fisheries-dependent catch and effort data. Loading of biological data has begun. These data are constantly reviewed and updated as needed.

In 2004, the first version of the [Standard Atlantic Fisheries Information System \(SAFIS\)](#) was deployed. This system is used to collect Program compliant data from commercial and recreational fishermen and dealers and is now deployed from Maine to Georgia. SAFIS is an ongoing and evolving system, requiring support, review and revision.

The ACCSP will continue to reduce duplication of effort by dealers and fishermen, make more efficient use of limited funds, promote education of resource users, and provide a more complete information base for formulating management policies, strategies, and tactics for shared resources. An integrated multi-agency program using standard protocols for reporting compatible information will lead to more efficient and cost-effective use of current federally and state funded data collection and management programs. The ACCSP will reduce the burden on the fishing industry to provide information in multiple formats to multiple agencies, and will provide more accurate and timely information to achieve optimum public benefits from the use of fishery resources along the Atlantic coast. The ACCSP will ensure the timely dissemination of accurate data on commercial and recreational fisheries for use in stock assessments and fisheries management through a comprehensive and easily accessible data management system.

E. Approach

The ACCSP is managed collaboratively by committee; the Coordinating Council, composed of high level fisheries policy makers from all the program partners, is the governing body, the Operations Committee

provides guidance in standards setting and funding priorities. An Advisory Committee provides industry input into the process. A number of other technical committees provide input into various aspects of the process.

Program planning builds on basic principles related to the goals stated in the ACCSP MOU, the 2006 Peer Review Report and the 2012 Independent Panel Review:

- Development of data collection standards and the implementation of data collection programs will be done cooperatively, across jurisdictional lines;
- Consistent coast-wide data collection standards will be implemented by all program partners that include data on all fishing activities -- commercial, recreational and for-hire fisheries;
- Once achieved, data collection improvements will be maintained;
- These data will be loaded and maintained in a central data repository and provided to data users through a user-friendly query system;
- Program planning will be done collaboratively, by consensus;
- The program will be responsive and accountable to partner and end-user needs; and
- Focus on activities that yield maximum benefit.

The FY17 Action Plan (Attachment 1) details activities to be conducted by ACCSP staff and committees under the FY17 Administrative Budget. Note that activities in support of the Marine Recreational Information Program are separately funded and therefore not included in this plan.

The ACCSP initially developed common standards collaboratively, by consensus, then began to work with program partners to implement the standards, according to a commonly agreed upon priority. All ACCSP technical committees, except for the Advisory Committee which is composed of industry and recreational representatives, are composed of managers and staff of the partner agencies and set policy by consensus. Only the Coordinating Council votes directly on motions.

The standards, known as the [Atlantic Coast Fisheries Data Collection Standards](#), for data collection and management are developed and maintained by ACCSP Technical Committees, with review and oversight by the Operations Committee, and advice from the Advisory Committee. The ACCSP Coordinating Council makes policy level decisions to adopt the program standards. The full-time ACCSP staff coordinates all activities conducted by the ACCSP.

The [Atlantic Coast Fisheries Data Collection Standards](#) documents all completed standards and provides the basic framework for full implementation of the ACCSP by all program partners. Administrative support of ACCSP activities is provided by the ASMFC and funded through overhead charges. The ACCSP is continuously evolving as technology and the needs of management and science change over time. Therefore the *Standards* and supporting systems are still in development. Support for the implementation of ACCSP modules is provided by staff in various jurisdictions. To this end, funding is required to provide for full-time staff for all ACCSP activities, as well as for travel and meeting expenses.

The ACCSP Director, reporting to the Executive Director of the ASMFC, provides leadership for the Program, overall programmatic management and guidance, and is responsible for the day-to-day operations. The ACCSP Program Coordinator provides assistance to the Director, coordinates Program activities and provides staff support for program and technical committees by drafting, maintaining and coordinating program documents. The Outreach Coordinator publicizes the availability and benefits of the Program. The Software Team Leader coordinates the development and management of ACCSP data management systems. The Systems Administrator manages the information systems infrastructure. The Data Team Leader provides guidance for all data related activities. The Information Systems Specialist, Data Coordinators and Fisheries Programmer provide programming capabilities and system support required to develop and fine-tune the data management system and assist users as they access the system. The Data Coordinators also directly participate in data intensive activities such as a stock assessment data workshop as needed. The Information System staff provides expert consultations to

partners as they implement new reporting and licensing/permitting systems. They also will continue to support development of SAFIS.

ACCSP staff will follow the FY17 Action Plan during FY17, in consultation with all partners. Specific tasks to be accomplished during the period include initiation and maintenance of Partner data feeds from the commercial, recreational, and biological modules; continued development and implementation of SAFIS; and support of other partner projects (such as the ASMFC lobster trap tag allocation system) by providing technical expertise as necessary.

The ASMFC has basic responsibility for the logistics of all committee meetings which support the development of the ACCSP, including: the ACCSP Coordinating Council, the ACCSP Operations Committee, the Advisory Committee, the Outreach Committees (one which is jointly administered with ASMFC), the Recreational and Commercial Technical Committees and Subcommittees, the Information Systems Committee, the Biological Review Panel, the Bycatch Prioritization Committee, the Standard Codes Committee, the ASMFC Assessment Science Committee (used by ACCSP), and the ASMFC Committee on Economic and Social Science (used by ACCSP). Full-time ACCSP personnel staff these committees for planning of work, providing minutes and other documents, and other follow-up.

The ACCSP has helped foster an improved atmosphere of cooperation among its partners. The Program has succeeded in establishing coast-wide fisheries data standards that all program partners have agreed to adopt. Data collection and management systems will be developed and deployed as the standards and Partner needs evolve. Program partners remain engaged in the process, and the program has made substantial progress towards its goals.

1. Geographic Location: Atlantic Coast (Maine through Florida)

2. Milestone Schedule: See FY17 Action Plan (Attachment 1)

This is a continuation from previous projects. Table 1 contains the base administrative budget amounts by year since implementation began in 1999.

Table 1. Administrative funding for ACCSP from 1999-2016

Year	Funding	Number of Staff
1999	\$907,902	3
2000	\$681,451	3
2001	\$1,054,466	5
2002	\$1,178,677	6
2003	\$1,302,768	7
2004	\$1,298,319	8
2005	\$1,409,545	8
2006	\$1,380,598	8
2007	\$1,489,189	8
2008	\$1,447,620	9
2009	\$1,527,996	9
2010	\$1,509,899	9
2011	\$1,530,699	9
2012	\$1,509,555	9
2013	\$1,582,780	9
2014	\$1,718,447	9.5
2015	\$1,731,666	9.5
2016	\$1,623,360	9.5

3. Cost Summary: The ACCSP requests \$1,371,586 for administrative support, committee travel and systems operations during FY17. The addition of the 35% overhead rate raises the request to \$1,851,641.

The funds used for the ACCSP shall be accounted for separately from all other ASMFC funds.

4. Personnel

Program personnel funded through this grant, except the Information Systems Manager are dedicated 100% to the ACCSP, and are full-time employees of the Atlantic States Marine Fisheries Commission. The Systems Manager is a shared position with the ASFMC under the joint supervision of the ACCSP Director and the ASMFC Director of Finance. Fringe benefits which include health care, vision, dental, annual and sick leave are calculated at 27%. Note that personnel associated with the APAIS are funded under separate authority and not accounted for in this document. ASMFC salaries are kept confidential, thus only totals are displayed. In addition an agreement has been put in place with NMFS Highly Migratory Species (HMS) to partially fund the Information Systems Specialist who is largely responsible for maintaining HMS data feeds.

- ACCSP Director - Michael S. Cahall
- Program Coordinator – Elizabeth Wyatt
- Outreach Coordinator – Alexandra Schwabb
- Information Systems Manager – Edward Martino
- Software Team Leader - Karen Holmes
- Fisheries Programmer – Nicolas Mwai
- Data Team Leader – Julie Defillipi
- Information Systems Specialist - Jennifer Ni
- Data Coordinator – Joseph Myers
- Data Coordinator – Heather Konell

Salaries and Wages	2017
Total Salary	\$ 793,622
Benefits @27%	\$ 214,278
Total Costs	\$ 1,007,900

5. Travel

Travel is broken down into two general categories; committee meetings and staff travel. The bulk of travel is in support of committee meetings. While significant savings have been achieved by using remote meeting technologies (such as online meetings), face-to-face meetings are often required to complete the tasks assigned. In general, each committee will have at least one face-to-face meeting during the year. In addition to staff travel to support committee meetings, staff travel is needed for implementation planning, data collection activities, outreach efforts, and information system development meetings with partners.

The Program funds fares to and from the meeting sight, per diem according to Office of Personnel and Management guidelines and facilities costs for the meeting itself. (The daily rate per meeting includes cost of airfare or mileage, lodging, meals and other travel related expenses.) Reimbursable participants include state fisheries directors and biologists, state and university scientists, law enforcement personnel and citizen advisors from Maine through Florida. Meetings will be held in various locations on the Eastern Seaboard, including but not limited to: Annapolis, MD; Norfolk, VA; Charleston, SC; Philadelphia, PA; Alexandria, VA; Providence, RI; Jacksonville, FL; Washington, D.C.

The travel budget is based on an estimated \$260 per day multiplied by meetings multiplied by days multiplied by membership plus staff.

Committee Travel	Meetings	Days	Membership	Total	Staff	Total	Grand Total
Advisory Committee	1	1.5	11	\$4,290	1	\$300	\$4,590
Biological Review panel	0	1	12	\$0	1	\$0	\$0
Bycatch Prioritization	1	1	14	\$3,640	1	\$200	\$3,840
Commercial Technical Committee	0	1	14	\$0	1	\$0	\$0
Coordinating Council (with ASMFC)	4	0.5	12	\$6,240	2	\$800	\$7,040
Operations Committee	2	2	12	\$12,480	2	\$1,600	\$14,080
Outreach	1	1	10	\$2,600	1	\$200	\$2,800
Recreational Technical	2	2	14	\$14,560	1	\$800	\$15,360
Information Systems Committee	1	1	13	\$3,380	1	\$200	\$3,580
Total Committees				\$47,190		\$4,100	\$51,480
Staff Travel							
Partner Coordination	4	2	2	\$4,160			
Data Support (Stock Assessment etc)	3	2	2	\$3,120			
IT Support	3	1	1	\$780			
Outreach	4	2	1	\$2,080			
GulfFIN Coordination	2	1.5	1	\$780			
Etrip Workshops	10	1	4	\$10,400			
Total Staff Travel				\$21,320			
Grand Total							\$72,800

Attachment 2 provides a tentative schedule of the funding cycle and calendar of meetings.

6. Supplies

Supply costs include supplies not covered by the ASMFC overhead. This includes ACCSP specific materials for outreach, smaller information systems items such as network switches and cables.

Supplies	2017
Misc Hardware (cables, network hubs etc)	\$2,000
Backup Tapes	\$986
Total	\$2,986

7. Equipment

ACCSP maintains several large server systems and related hardware in support of the Data Warehouse, website, SAFIS and administrative functions. These systems typically have a 5 year life cycle after which they require upgrade or replacement. In cases of the larger items, lease options have been explored, but it appears that, in part due to current staffing, it is more cost effective to own and maintain the equipment internally. Note that in 2017 the Program plans to replace the data warehouse server as it will reach its' end of life.

Included are the costs are normal life cycle replacements of laptop and desktop systems, assuming replacement of 3 systems annually. Costs are based upon current market surveys and an estimate of our needs. We assume the replacement of one major infrastructure component (server, router, firewall, etc.) yearly. We assume the replacement of three desktop/laptop systems per year.

Equipment	2017
Infrastructure Replacements (servers, UPS systems, etc.)	\$25,800
Desktop/Laptop Systems	\$4,000
Total	\$29,800

8. Other Costs

Hardware and software support are supplied by a number of different vendors and includes costs associated with licensing and maintenance fees (such as *Oracle* licensing).

The Program maintains two high speed internet connections and associated infrastructure in support of the server systems. The first is the primary connection used of all incoming and outgoing public traffic. The second is a dedicated line to the NOAA Fisheries Greater Atlantic Regional Fisheries Office (GARFO). This second line provides full time secure connectivity requested by the Region.

Outside vendors include Hewlett Packard for systems hardware and software support; Oracle for database management systems support; DLT Solutions and Trident Solutions for hardware support. All pricing is based on the GSA schedule.

Communications supports high-speed internet connectivity for ACCSP and related systems and a direct secure connection to the GARFO Data Center in Gloucester, MA. Costs are based upon negotiated contracts with Cogent Communications, Level 3 Communications and Verizon.

Software maintenance and development workload at times exceeds staff's resources. Contract services will be utilized to provide services that staff may be unable to perform.

E-Reporting Support

Funds are requested in anticipation of electronic reporting outreach and support activities. Interest among state Partners and harvesters has been steadily rising and a steady stream of new users are adopting the system where agencies will accept electronic reports through SAFIS. In addition, recent management actions indicate that both the Mid-Atlantic and South Atlantic Fishery Management Councils are likely to mandate electronic reporting for the for-hire sector effective June 2017.

Preliminary indications are that SAFIS eTrips in both the mobile and on-line versions are likely to be used by the majority of harvesters as the reporting tool. In addition, majority of trips will be reporting to the SAFIS system regardless of the tool selected. There does not currently exist a mechanism to provide consistent support for Partner agency and harvesters.

Funds requested include both costs associated with the initial deployment and ongoing support. Initial startup costs include but are not limited to in-person training workshops for harvesters and Partner Agency personnel and published training guides and videos that will be available via the ACCSP website. ACCSP is also proposing to contract for help desk support for eTrips/Mobile which would include 24/7 helpdesk support, a toll free number to contact support personnel and a helpdesk ticketing program designed to keep track of all requests and provide feedback to the Program.

Other Expenses	2017
Software Support	\$40,600
Hardware Support	\$7,500
Communications	\$27,500
Printing (outreach)	\$7,500
Contract Services	\$175,000
Total	\$258,100

Budget Summary

Budget Summary	2017
Personnel	\$793,622
Fringe Benefits	\$214,278
Travel	\$72,800
Equipment	\$29,800
Supplies	\$2,986
Other	\$258,100
Total Program	\$1,371,586
ASMFC Overhead	\$480,055
Total	\$1,851,641

FY17 Action Plan for the
Atlantic Coastal Cooperative Statistics Program

Purpose

This plan is intended to provide guidance in achieving the goals of the ACCSP in FY2017 (March 1, 2017 – February 28, 2018). References within this plan are to the ACCSP 2014-2018 Strategic Plan

Please note that some of the tasks to be accomplished during FY17 are funded from outside sources.

Strategic Plan Program Goals

1. Manage and expand a fully integrated data set that represents the best available fisheries data;
2. Continue working with the program partners to improve fisheries data collection and management in accordance with the evolving ACCSP standards within the confines of limited funds;
3. Explore the allocation of existing Program funds and work with partners to pursue additional funding;
4. Maintain strong executive leadership and collaborative involvement among partners at all committee levels;
5. Monitor and improve the usefulness of products and services provided by the ACCSP;
6. Collaborate with program partners in their funding processes by providing outreach materials and other support to demonstrate the value of ACCSP products and the importance of maintaining base support for fishery-dependent data collection programs to state partners and their executive and legislative branches as well as to all other partner agencies
7. Support nationwide systems as defined in the Magnuson-Stevens Fishery Conservation and Management Act (MSA).

2017 Planned Program Activities: Summary

Planned activities for Fiscal Year 2017 are targeted towards operation, maintenance and expansion of commercial dealer landing and fisherman catch reporting, expansion of the data warehouse to include biological data, deployment of electronic reporting in the for-hire fisheries, and the implementation of processes designed to improve the integrity of data in the Data Warehouse. These activities include: the continued maintenance and deployment of SAFIS based fisherman and dealer reporting, expansion of the hand held version of the SAFIS dealer and trips reporting (SAFIS/M) systems, expansion of existing QA/QC procedures and the loading of available legacy biological and bycatch sample data.

The Marine Recreational Information Program (MRIP) Access Point Angler Intercept Survey (APAIS) will be managed through the Program, but planning and execution are covered by a separate process. The Recreational Technical Committee serves as the advisory body for planning and execution of this NMFS program.

Program data staff, working with the appropriate partner staff, will maintain a 'best available' data set to be used where accurate totals are needed (an example might be Fisheries of the United

States), and an 'all available' data set to be used for detailed analysis. Staff will provide a yearly matrix showing data sources and suppliers for the combined data sets as preliminary metadata.

Data Warehouse

Catch/Effort

Current data feeds will continue to be maintained and enhanced. Staff will work with program partners to improve timeliness and resolve any data issues that may arise. A routine feedback loop for data will continue to be maintained, providing partners with the opportunity to review data stored in the warehouse. Quality assurance procedures will be implemented in accordance with recommendations from the appropriate committees.

Biological Data

Progress will be made in populating the biological tables in the Data Warehouse. Based on the recommendations of the Biological Committee, staff will work with program partners to feed biological sample data sets to the warehouse where it will be loaded. Use of the new biological query interface will be monitored and adjustments made based on user feedback.

Bycatch Data

Progress will be made in populating the Bycatch data set in the Data Warehouse. Staff will work with program partners to develop and implement routine Bycatch data feeds for priority data sets as identified by the Bycatch Committee.

User Interface (Data Queries)

The new query interface will be monitored and adjusted based on feedback from the end users and research conducted by staff and the Information Systems Committee.

Goal 2 – Data Collection

SAFIS System Maintenance and Enhancements

SAFIS will be maintained and enhanced based on requirements from the program partners. Additional partners will be brought on line as needed. The Program expects to continue to develop and modify handheld versions of both the dealer and trip reporting systems, additional deployments of voluntary angler systems, and electronic reporting in some for-hire fisheries.

A SAFIS redevelopment process will provide functional requirements for an integrated reporting system based on the prior year's visioning process. A redevelopment plan will be drafted based on these functional requirements and software development will begin.

Other Systems

- 1. Lobster Allocation System (LOBSTAH)** – The LOBSTAH system will be fully deployed and in maintenance mode. Staff expect to make minor enhancements as the system and management requirements evolve.
- 2. American Lobster Settlement Index (ALSI)** - ALSI will have additional functionality added to make it more user friendly and to give it the ability to perform basic summary analysis tasks.

Ensure that Data are Disseminated and Used (Goals 1, 5, and 6)

Part of the mission of the ACCSP is to facilitate the use of data and better acquaint fisheries managers and scientists with the data managed by the Program. To that end, the ACCSP plans to participate in stock assessment and data workshops whenever ACCSP data might be of

assistance to the process. The program will continue to provide custom queries as necessary, and provide access to end users through the on-line query tool

Manage and Execute Outreach

Established outreach processes will continue. These include: routine automated updates for meetings, changes and/or updates in data and significant events, quarterly newsletters, data sheets detailing the status of the Program, articles in 'Fisheries Focus', and the preparation and publication of the Annual Report. Additional opportunities to get the message out to Program constituents and the public will be sought out and exploited and are outlined in the 2014-2018 Communications and Outreach Strategic Plan.

Outreach will maintain a schedule of fisheries related events, reviewing them periodically to identify opportunities to establish or improve stakeholder communications. Appropriate staff will be detailed to these events to ensure that the ACCSP is represented.

The web site will continue to serve as a primary point for providing information to the general public and casual user. The new web site will be deployed and in use providing much better mechanisms to manage the end user experience.

Regional data workshops or presentations will be conducted to provide data consumers with up to date information on the Programs progress and capabilities, and to bring them up-to-date on the data available.

Appropriate Congressional staff and key stakeholders will be kept apprised of the Program through the routine distribution of informational materials.

Participate in Data Intensive Activities

Staff will track various stock assessments, conferences, and other data intensive activities with an eye towards participating as fully as possible. Data will be provided where appropriate. This task would include the presentation of papers or posters in support of Program objectives.

Monitor Program Review Recommendations (All goals)

Implemented recommendations of the Independent Program Review will be monitored and updates provided to the Operations Committee and Coordinating Council as needed.

Manage and Execute the ACCSP Processes (Goals 1, 2, 3 and 4)

Funding Process

As in all years, the ACCSP will continue to manage the funding process, track performance on funded projects, and report to its' constituents on progress towards Program goals. Revisions to the process will be made as needed based on the recommendations from the Independent Program Review or constituent input.

The funding subcommittee will continue to meet in order to refine the funding decision process with a focus on potentially shifting some Program priorities based on current progress. Additional sources of funding will continue to be sought out to fund short term needs (such as the SAFIS redesign).

Program Standards

The Program will conduct routine reviews of standards to ensure that they are both current and relevant. In addition, the Recreational Technical Committee will be working to continue revisions to the Recreational section of the Atlantic Coast Fisheries Data Collection Standards document in order to incorporate the results of the MRIP PSE project, MRIP For-hire project and lessons learned from, the APAIS transition.

Executive Engagement

The Coordinating Council will continue to meet in order to provide Executive level managers with the most up-to-date information and provide greater opportunities for input into Program related activities.

Metrics

Metrics will be monitored. These include the collection of system usage statistics, user surveys, and data load and availability statistics. The metrics will be distributed throughout the year, but will be summarized in the Annual Report.

Support the National Fisheries Information System (FIS) and Marine Recreational Information Program (MRIP) (Goal 7)

ACCSP will continue to participate in both the FIS and MRIP programs, providing resources as appropriate to the various committees of the programs. In accordance with the MSA, ACCSP will provide data for the Atlantic Coast to the FIS when requested.

Summary List of Major Tasks

Program Area – Program Management

- **Manage the funding cycle (Director, Program Manager, Operations Committee, and Coordinating Council)**
 - Manage and follow Funding Decision Process
 - Work with finance and funding committees as needed
- **Manage the ACCSP Process (Technical Meetings)**
 - Commercial Technical
 - Recreational Technical
 - Information Systems
 - Standard Codes
 - Biological/Bycatch
- **Participate in FIS and MRIP processes (Staff and Committees as needed)**
 - Participate in FIS and MRIP processes and meetings as necessary
- **Outreach and Education (Director, Outreach Coordinator, Staff, Committees)**
 - Monitor Program Success Metrics
 - **Publish relevant metrics (Program Manager)**
 - Newsflash
 - Quarterly newsletter
 - Annual report
 - Press Releases
 - Maintain the feedback loop to gauge the success of the Program in meeting the needs of its constituents
 - Participate in face-to-face meetings to increase awareness and support of ACCSP
 - Regularly meet or communicate with policy level constituents
 - ACCSP staff attends stock assessment data workshops
 - Contact partners to receive agendas for monthly advisory committee meetings and attend those that include relevant issues
 - Participate in Council and Commission meetings as needed
 - ACCSP Director will provide ACCSP updates to Coordinating Council
 - Exhibit at appropriate venues
 - Manage media relations to encourage news stories mentioning ACCSP
 - Contact partners to be added to their press release lists and public notices and state newsletter distribution lists

- Issue press releases when relevant
 - Maintain a media list
 - Publish in fisheries related publications and journals
- Promote the use of the Data Warehouse
 - Clearly identify to users data available
 - Provide end-user support for use of the query interface
 - Solicit feedback to improve the system
 - Quickly respond to data requests
 - Identify opportunities to offer training sessions or workshops

Program Area – Data Management (Data Team Lead, Data Coordinators)

- Continue catch/effort data quality review and reconciliation with supplying partners **(Data Team Lead, Data Coordinators, Appropriate Technical Committees, Partner Staff)**
 - Monitor data for quality issues and reconcile as necessary
 - Review current standard codes, and make adjustments as necessary.
 - Verify ACCSP data against source data sets
 - Implement data quality processes as recommended
- Support and improve partner catch/effort data loads **(Data Coordinators, Partner Staff)**
 - Complete loading of 2016 Commercial and Recreational Catch/Effort/Landings data into the data warehouse and make it available to the end-user query interface and Fisheries of the United States.
 - Continue work on identifying and loading legacy catch/effort data sets
- Biological Data **(Data Coordinators, Biological Committee, Partner Staff)**
 - Continue loading biological data sets as identified by the Biological Committee
 - Continue deployment of the Biological Query System
- Bycatch Data **(Data Coordinators, Bycatch Committee, Information Systems Committee)**
 - Begin loading legacy Bycatch data sets
 - Develop data use requirements
- Provide support for the following fisheries data intensive activities **(Data Coordinators)**
 - Stock Assessment Activities (SEDAR, SAW/SARC, ASMFC and state assessments)
 - Custom data requests
 - FUS
 - Others as necessary
- Maintain and update infrastructure **(Data Team Lead, System Administrator)**
 - Maintain existing infrastructure
 - Upgrade Data Warehouse server
 - Update software as needed
 - Acquire and deploy hardware and software for the MRIP APAIS

Program Area - Software Development and Maintenance

- Maintain SAFIS applications **(Software Team)**
 - eDR
 - eTRIPS
 - eLogbook
 - e1-Ticket
 - SMS
 - HMS
- Continue development of integrated reporting
- Deploy SAFIS mobile application
- SAFIS Auditing **(Software Team, Audit Subcommittee)**
 - Continue auditing enhancements as needed
- Maintain Simple Query Interface **(Software Team, Data Team, Technical Committees)**

- Internal Applications (**Staff**)
 - Enhance website
 - Maintain website
 - Administrative applications



Atlantic Coastal Cooperative Statistics Program

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This list includes dates for fiscal year 2017, including ACCSP committee meetings, relevant dates of the funding cycle, as well as meetings or conferences ACCSP typically attends or may be of interest to our partners. If you have any questions or comments on this calendar please do not hesitate to contact Elizabeth Wyatt, ACCSP Program Coordinator, at elizabeth.wyatt@accsp.org.

March 1:	Start of ACCSP FY17
March 6-10:	South Atlantic Fishery Management Council (SAFMC) Meeting - Jekyll Island, GA
Week of March 6:	ACCSP Executive Committee conference call
March 15:	ACCSP Commercial Technical Committee webinar
March 16:	ACCSP Information Systems Committee webinar
Week of April 3:	ACCSP Operations/Advisory Committee webinar
April 11-13:	Mid-Atlantic Fishery Management Council (MAFMC) Meeting – Avalon, NJ
April 18-20:	New England Fishery Management Council (NEFMC) Meeting (TBD)
May 8-11:	ASMFC Meeting/ACCSP Executive Committee Meeting and Coordinating Council Meeting; ACCSP issues request for proposals - Alexandria, VA
Week of June 5:	ACCSP Executive Committee conference call
June 6-8:	MAFMC Meeting - Norfolk, VA
June 12-16:	SAFMC Meeting – Ponte Vedra Beach, FL
June 20:	Initial proposals are due
June 20-22:	NEFMC Meeting (TBD)
June 27:	Initial proposals are distributed to ACCSP Operations and Advisory Committees
Week of July 10:	Review of initial proposals for ACCSP Operations and Advisory Committees (webinar)
Week of July 24:	Feedback submitted to principal investigators
July 31- August 3:	ASMFC Meeting/ACCSP Executive Committee Meeting and Coordinating Council Meeting - Alexandria, VA
August 8-10:	MAFMC Meeting – Philadelphia, PA
August 14:	Revised proposals due
August 21:	Revised proposals distributed to ACCSP Operations and Advisory Committees
Week of September 4:	Preliminary ranking exercise for Advisors (webinar)
Week of September 4:	ACCSP Executive Committee conference call
September 11-15:	SAFMC Meeting - Charleston, SC
Week of September 11:	FY2015 Proposal Review – Maintenance and New (webinar)
September 19-21:	NEFMC Meeting (TBD)
September 20-21:	Annual Advisors and Operations Committee Joint Meeting (TBD)
October 10-12:	MAFMC Meeting – Riverhead, NY
Week of October 30:	ASMFC Annual Meeting/ACCSP Executive Committee and Coordinating Council Meeting (TBD)
November 15-17:	NEFMC Meeting – Newport, RI

Our vision is to produce dependable and timely marine fishery statistics for Atlantic coast fisheries that are collected, processed, and disseminated according to common standards agreed upon by all program partners.

Week of November 27: ACCSP Executive Committee conference call
December 4-8: SAFMC Meeting - Atlantic Beach, NC
December 12-14: MAFMC Meeting - Annapolis, MD

RESUME

Michael Sheldon Cahall
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email: mcahall@comcast.net

Education:

- West Virginia University, Morgantown, WV
(Cum Laude) B.M. - Violin Performance
8/83
- Peabody Conservatory of Music, Baltimore, MD
Post Graduate (not completed)
8/84
- College of Southern MD, Leantonartown, MD
Paramedic Certificate
8/11

Skills:

Management

Experienced Project/Program Manager
Worked with widely coordinated/collaborative projects
Good personnel management skills
Able to deliver projects on time, on budget, in scope
Positive 'can do' attitude
Worked within budgets and budgeting processes
Managed IT budgets in numerous organizations
Experience in the budget formulation process

IT Related

Highly Proficient with Oracle RDBMS
16+ years of experience with Database Administration, Design, and Oracle development tools
Good grasp of database design and implementation in both warehousing and OLTP
System Administration/Management
Administered a wide variety of UNIX systems (AIX, HP, LINUX and Solaris)
Managed multiple server NT networks
Skilled with Online Analysis Applications
Functioned as Administrator and Designer
Very familiar with Microsoft Networking
10+ years of Microsoft Network design and management
Familiar with NT/Win200/WinXP networks and management
Able to respond quickly to changes in technology

Other Areas

Worked in a wide variety of subject specialties
Developed Fisheries Information Systems
Comprehensive Commercial/Recreational Data Warehouse
Commercial Data collection systems
Very familiar with Federal and DOD logistics systems (MIL 1388, MILSTRIP, FEDSTRIP)
Developed two logistics management and integration systems for NOAA/NWS
Knowledge of Supply and Logistics life cycle planning
Experience in Commercial Development

American Radiology Services – developed financial and customer tracking warehouse
Developed software to transfer data between disparate applications
Very familiar with federal Information Systems Policies
Managed Contract Efforts
Managed several large Federal Procurements
Contracting Officers Technical Representative Level II Certification
Worked with Various Medical Systems
HL/7 Communication Protocol
Managed Centralized Message System
Developed Patient Information Systems

Employment History (10 year, additional available on request):

Atlantic States Marine Fisheries Commission

Currently serving as the Director of the Atlantic Coastal Cooperative Statistics Program (ACCSP)

2/99 to 8/07

- Information Systems Manager
 - o Manage Information Systems for ACCSP
 - Manage budget, systems operations and system development
 - Manage in house and contract operations and development staff
 - Manage Development and Deployment of Fisheries Data Warehouse
 - Oracle for Solaris V 9.2, LINUX and NT (10.0.1)
 - Microsoft IIS 6.0
 - Business Objects Web Intelligence (OLAP)
 - Designed Data Warehouse for all Atlantic Fisheries Statistics
 - o Designed and Manage Development of Standard Atlantic Fisheries Information System
 - Multi-agency system includes all states on the Atlantic Coast and the NOAA/NMFS
 - Provides on-line data entry for commercial fisheries in the Mid-Atlantic and New England region
 - o Provide Technical Lead for Program
 - Serve as System Admin, Project Lead as required
 - o Assist State and Federal Agencies in advanced software implementations
 - o Consult with technical committees as required
 - o Coordinate between Program and State and Federal Agencies (NOAA/NMFS)