

Atlantic States Marine Fisheries Commission

Atlantic Coastal Cooperative Statistics Program Coordinating Council

*October 24, 2018
3:45 – 4:45 p.m.
New York, New York*

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1. Welcome/Call to Order (*L. Fegley*)
2. Council Consent (*L. Fegley*)
 - Approval of Agenda
 - Approval of Previous Meeting Minutes
3. Public Comment
4. Program/Committee Updates (*M. Cahall*)
5. Progress Report on SAFIS Redesign (*M. Cahall*)
6. Consider Approval of Recommendations for FY2019 Submitted Proposals (*L. Fegley*) **Action**
7. Clarify Funding Decision Process (*M. Cahall*) **Possible Action**
8. Discuss Formation of Data Reporting Committee on Data Accountability (*M. Cahall*)
Possible Action
9. Other Business/Adjourn

The meeting will be held at the Roosevelt Hotel, 45 East 45th Street & Madison Avenue, New York, NY; 212.661.9600

Vision: Sustainably Managing Atlantic Coastal Fisheries

**DRAFT PROCEEDINGS OF THE
ATLANTIC COASTAL COOPERATIVE STATISTICS PROGRAM
COORDINATING COUNCIL**

The Westin Crystal City
Arlington, Virginia
May 1, 2018

These minutes are draft and subject to approval by the ACCSP Coordinating Council.
The Council will review the minutes during its next meeting.

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1. **Approval of Proceedings of October 2017 by Consent** (Page 1).
2. **Move to accept the FY19 RFP Package as corrected** (Page 14). Motion by Mr. Jeff Brust; second by Mr. Robert Boyles. Motion carried (Page 14).
3. **Move to adjourn by Consent** (Page 20).

ATTENDANCE

Council Members

Cheri Patterson, NH
Dan McKiernan, MA
Jason McNamee, RI
Matt Gates, CT
Jim Gilmore, NY
Jeff Brust, NJ
Lynn Fegley, MD

Robert Boyles Jr., SC
Doug Haymans, GA
Bob Beal, ASMFC
Marty Gary, PRFC
Barry Clifford, GARFO/NEFSC
Sherry White, USFWS
Gregg Waugh, SAFMC

Staff

Mike Cahall
Geoff White

Julie Defilippi-Simpson
Ali Schwaab

The Atlantic Coastal Cooperative Statistics Program Coordinating Council of the Atlantic States Marine Fisheries Commission convened in the Jefferson Ballroom of the Westin Crystal City Hotel, Arlington, Virginia; Tuesday, May 1, 2018, and was called to order at 4:00 o'clock p.m. by Chairman Lynn Fegley.

CALL TO ORDER

CHAIRMAN LYNN FEGLEY: My name is Lynn Fegley; I represent the state of Maryland, and I am honored to have been elected your Chair. I want to thank Robert Boyles for his leadership over the past few years. We'll see how we go over the next few meetings that we have.

PUBLIC COMMENT

CHAIRMAN FEGLEY: The first item on the agenda is public comment. I don't know that anybody has any comment; but if there are, please let us know.

APPROVAL OF AGENDA

CHAIRMAN FEGLEY: Okay seeing none; the next agenda item is to seek approval of the agenda. But before I do that I wanted to propose an addition, a short addition to the agenda before Agenda Item Number 6 on Data Validation. Mike and Julie brought to my attention some issues; and I think Julie has a quick word, which I believe would be useful to the group. Is there any opposition to adding an agenda item? Seeing none; is there any opposition to the agenda? Seeing none; it is approved by consent.

APPROVAL OF PROCEEDINGS

CHAIRMAN FEGLEY: Moving on to approving the minutes from the meeting of October, 2017, this was sent out in your meeting materials.

Are there any comments, edits, additions, subtractions to those meeting minutes? Is there any opposition to approving the minutes as submitted? Seeing none; we'll roll right into our agenda and move this along.

ACCSP STATUS REPORT

MR. MIKE CAHALL: I'm going to do my best to have the staff present as much of this as I can; since they frankly know some of it in a good bit better detail than I do. Julie will go ahead and take the Commercial Data Team slides. Geoff will take the Recreational information.

MS. JULIE DEFILLIPPI-SIMPSON: The Commercial Data Team started out recently with the 2017 commercial data. Megan just mentioned herring that was recently released. It was a soft release on April 16, and then we did a public release on April 23. We just wanted to say thank you to everyone; because there was a lot of excellent coordination with all of our partners.

Everyone did a fabulous job of meeting deadlines this year; and coming up with all of the answers to last minute questions, like conversion factors and everything. Everyone came in and did a really great job; and some folks did things faster than they've ever done them before, and better than they've ever done them before. That is hugely appreciated on everyone's part. On the staff side we've been working over the last couple of years to automate and improve a lot of our processes, and also a lot of our QA/QC procedures. That really kind of came to fruition in this spring data load.

When we put out the data we put it to some of the folks who do a lot of validation

and QA/QC on their side when they're bringing it in, into the Northeast Fisheries Science Center and Headquarters, and the feedback that we got from them is up there. Those are actually direct quotes that the data look really good; and that this year the data are cleaner than any previous year.

We're really pleased by that and thanks to everybody for all the coordination you guys did with us. An improvement in the data warehouse is the Confidential Account Application and Approval Process Improvement. I'm sure that a lot of you have applied for confidential access, or been the person who has to approve all those applications.

We have actually worked to make that process electronic. Now when you do the application, we've improved the form a little bit; so there is additional help text, and there is a couple of additional questions so that will help to clarify for the folks approving what you're actually applying for, and why you need certain levels of access.

Then we've created a system behind the scenes where the approvers can go in and electronically do approvals. They can electronically put people on hold in sudden notifications. We're in the process now of having folks look at the version that we've got out there. They've given us feedback; and we're adding the improvements that they like.

Hopefully that process will be finished in the next month or so. We're really excited about doing that; because I know everyone is very excited to get away from the PDF form. Then the last one is just the current stock assessments. We actually have five current stock assessments that we're currently providing data for.

On the Commission stock assessment side there is the American lobster, the horseshoe crab, shad, Atlantic menhaden, and then we're also participating in the data workshop portion of the SEDAR 59 South Atlantic greater amberjack; and we're actually also panelists on that one. That is what I have for commercial.

MR. GEOFF WHITE: Great, thanks for having me for the recreational things. The recreational programs, including the state connect of APAIS data collection, the dockside interviews component of MRIP. We've been involved in a bunch of activities you may be aware of already, but I want to briefly touch on at the top here.

NOAA and ASMFC helped host the Recreational Fishing Summit in March. It was successful in bringing national recreational fishing constituents and even Secretary Ross was able to make the meeting to discuss improving opportunity and stability in recreational fisheries. The session topics were about innovative management alternatives and approaches; that included electronic reporting, social economics, angler engagement, and data collection and reporting, and also expanding recreational opportunity through conservation. One of the big messages was not just how to divide the pie differently; but to grow the pie. That was actually held right in this room; and was good at making progress on those topics. We at ACCSP also listened in on some MRIP activities; the FES, the Fishing Effort Survey presentations, which I believe is being given to the Policy Board on Thursday morning.

While there is a lot of great information in that presentation, my personal takeaway is that the tools will be available to measure the stocks in the same data currency as when it was collected. If there were an

assessment done in the past, you'll have the historical style numbers to compare that against and measure it.

If you move to a new assessment under the new FES calibrated data, then you would be able to use the entire time series with the new flavor, or new currency of data. That was my personal takeaway out of that and I thought that was really good. You look forward to Thursday; when you get to see that presentation.

We've also been very involved in the SEFHIER process. That is the Southeast For-Hire Integrated Electronic Reporting; and we're one of 53 individuals and numerous agencies involved with that. They have six workgroups; and only one has kind of had a final decision made, and that has been to the benefit of ACCSP.

The data housing subgroup has evaluated and made a recommendation that ACCSP be the data warehouse and housing for that information. The other workgroups are minimum standards, survey design, compliance and enforcement, outreach and education, and program management and budget. SEFHIER, Rich Malinowski just gave an update to the Rec Tech Committee yesterday. They will be looking to complete their white papers and have leadership decisions on all those other topics sometime this summer.

We are deeply involved in that process as it goes. Then quickly touching on APAIS status for 2017, we did have a high level of data collection. The 2017 final estimates are available; and were posted to the warehouse alongside with the commercial data that Julie's team worked on, about a 9 percent increase in intercepts, and about a 4 percent increase in productivity or number of intercepts per assignment

overall on the coast, compared to 2016. We improved over ourselves.

I include all of your state efforts in that; because you're out there in the fields getting it done. The 2018 data collection has begun. All of the trainings are done. MRIP has transitioned to an online vessel directory; which is still experiencing a little bit of growing pains, but is a process we believe in that it will get better, about how well the vessels and information get from the states are also incorporated in the for-hire telephone survey for that portion of the effort.

For 2019, we have coordinated and compiled all the budgets and submitted that to MRIP. One of the primary items we've been working on that we expect is going to go well, we don't have final approval. But it looks like the 150 or so staff that does APAIS data collection from Maine to Georgia is likely to be able to do that with tablet data collection and electronic submission for 2019. We're very excited about that. Currently we do it via paper and scanning; which worked well, but being able to add some more validation checks and save about two weeks in mailing and turnaround time, we believe will be of benefit to the survey in general. That's the program update.

MR. CAHALL: Okay so I'll take software. The software that most of our constituents are using is our data collection tools; eTrips/Mobile and Online, and eDR/mobile and Online. The eTrips/Mobile and Online systems right now are undergoing some transition. The eTrips/Mobile tool had some recent updates applied to it that allows it to be more compliant with the GARFO requirements.

There were some very specific gear issues that we had to get resolved. We had to do the same to the eTrips/Online as well. We're also working on adding even more detailed gear changes to the system that will support much more involved gear descriptors that will allow us a much greater level of flexibility in adding gears, or adding descriptors to gears.

That is probably going to happen in a release that may be three or four more months further down the road. We're working towards that; eTrips Online, we've made a lot of changes to this system to try to get it to be compliant with GARFO. We are still going back and forth working with them at this point.

The system can be used both mobile and online; can be used for for-hire reporting, and those will go to both the states and to GARFOs systems. The online tool, because the online tool is online, it can't provide a report prior to the vessel reaching the dock. The workaround that GARFO proposed was that as long as they filled out their paper trip reports, they could still key it in to the online system.

The tricky part is making sure we line up the VTR trip numbers; so that they appear correctly in GARFOs VTR system, and we're working with their staff right now to resolve that. That is the last technical hurdle for GARFO approval of eTrips Online for commercial reporting. A lot of the duly permitted captains want to use the same tool to report for commercial and for for-hire trips; and they seem to be very comfortable with the online tool, which frankly was a little bit of a surprise to us. My expectation is that we will be able to have this resolved in the next few weeks. There are some staffing shortages that are ongoing at GARFO; and we are also making

sure that we're 100 percent clear on what the requirements are, before we do too much more work. The eDR/mobile tool is currently deployed in a swipe card version; that's used in Massachusetts and Maine. We are changing that and providing what we call Partner Options; which means that it will have the same kind of intelligence that the online tool does.

It can adapt itself depending on which environment that it's in. The mobile tool would be able to be used by dealers in any of our jurisdictions; with or without swipe cards, and will automatically adjust itself, depending on where it is and which jurisdiction it's being used in. We know that the baseline option was deployed to the most recent version, and we're going to begin to test that in a couple of different environments. We'll make sure everyone is aware when it's available. Also, we're working on a fairly significant overhaul of the SAFIS system; largely funded thanks to FIS and Saltonstall-Kennedy. The idea here is to take the original design that is now, believe it or not 20 years old, and look to see well, how well does it meet today's needs? What we're finding is that it isn't as flexible as it needs to be. We need to make some adjustments to it; to allow for it to accommodate things like these kinds of gear descriptors, or additional fields that we end up collecting.

There are some one-offs that some of you all collect that you need. Highly Migratory Species has some very specific requirements. What we're trying to do is standardize this into a clean database design that will allow us to quickly add additional functionality as required by our different program partners.

We've already had a couple of design meetings. We also had an integrated

reporting workshop, because one of the requirements for the new system is that it will support integrated reporting. We are planning now for a second design meeting; which will be primarily for technical folks to review the current design, and review some of the surveys that we've already done on what the system's deficiencies and successes are, and to make recommendations for some changes in how it needs to be designed.

We expect to have a new data base design for most of the modules; at least laid out by the end of the calendar year, so that we can begin to build software on top of that. What we're looking at changing, just for general interest, is our permit managing which is registration tracking. SAFIS, the design that we have right now is more of a point in time; so that it knows what's valid today, but it can't usually tell you what was valid six months ago or a year ago.

If you need to use the system to do a retrospective analysis or run some kind of compliance reporting, we're not readily able to do that; because of the way the database is designed. Those are the kinds of things that we'll be changing; additional support for more varied kinds of permitting.

As we're working in the SEFHIER process we're finding out that there are some substantial differences in how the Gulf and South Atlantic permits, and those will have to be incorporated into the design changes for registration tracking. Then finally, dealer reporting and trip reporting.

They have essentially the same kind of problem; where we end up with additional data elements or additional requirements that may be specific to a particular jurisdiction, or maybe even some kinds of temporary things, additional measurements

that may be taken, things like temperature and depth.

Our original designs, for those of you who have been around awhile, we don't support, or we didn't support. Those will be added; those kinds of fields and the functionality to add them will be added to the trip and dealer reporting modules as we move forward. Since Ali doesn't have a microphone, I'll do Outreach really quickly.

We did participate at the New England Fishing Show. It was quite successful; and there's our display. We have participated in a lot of the for-hire electronic trip reporting workshops. I can't even begin to tell you how many of them there have been; but there have been a lot, and they have been all up and down the coast in support of the northeast, primarily the Northeast Trip Reporting that was required by the regulations from the Mid-Atlantic Council. But we've also done some work in the South Atlantic as well; working with our contractor and with the captains, trying to provide training, creating accounts as needed.

We are also taking feedback as we work forward. Ali has been participating in those; and we also had a couple of the data team there too, working with the captains, making sure that they understand how these things work. We also get their feedback; so that of course we can make adjustments to the system over time.

Our goal is to make the system as user friendly as we can. This year we're going to publish an online annual report. You all will receive a link to that fairly soon. It's nearly done. The goal this year was to try and get away from killing trees for our annual reports. It will also allow it to be a lot more

flexible; and we can update it when needed. It will be attached to a website.

There will also be a printed version available; but it will be in a fairly short, we'll have a PDF that's available, for those of you that really feel like you have to have a piece of paper in your hand. Then of course we've put out routine releases, newsletters, and that sort of thing. Outreach remains fairly robust; and an important part of what we do. I think I'm going to let you take the AFF.

MS. DEFILIPPI: ACCSP is participating in the AFF annual meeting that's going to be August 19 through the 23, in Atlantic City. Right now we are on the Organizing Committee or Chairing two symposia; one is on data management for dissemination, and data visualization. The other is electronic reporting to improve catch monitoring in recreational fisheries. We actually have three staff that are presenting in each of those two symposia.

Then we have two additional staff members who have been asked to present on some of their additional work; so we're actually going to have eight different staff presentations or ACCSP presentations, because a couple of them are actually being spearheaded by some partner work as well. There will be eight presentations at the AFS meeting this year; so we just kind of wanted to let you know we were going to have very good representation this year in Atlantic City.

CHAIRMAN FEGLEY: Busy, and lots of good work. Are there any questions? Doug.

MR. DOUG HAYMANS: Wow, I'm shocked anybody knew me down here. ICAST, I mean you guys did a northern show; ICAST is two months away, outreach and education. I'm just throwing it out there.

It's a great opportunity to get in front of an awful lot of recreational fishermen; as we begin the for-hire and the voluntary reporting. It's a great opportunity to get down there.

MR. CAHALL: I think it's certainly something we could discuss. I'm pretty sure the Commission routinely goes to that. We can coordinate with, I think Tina, and of course talk to the folks. I agree. We need to get it out there; especially since we're looking at likely mandatory reporting requirements in the not-too-distant future.

MR. HAYMANS: Yes, the Commission is backing away from it and hoping you guys will; and also, super excited to see the tablet roll out for creel clerks.

ACCSP COMMITTEE UPDATES

CHAIRMAN FEGLEY: Are there any other questions? Okay so we'll move right along to Agenda Item Number 5; which is to Review and Consider Approval of the FY19 request. I am so sorry; we're moving on to Committee Updates, my mistake.

MS. DEFILIPPI-SIMPSON: Annual meeting for the Biological Review Panel happened in February of this year. They talked about a couple of different projects; the first one is the Conversion Factor Project. That was a project that was originally started in the Commercial Technical Committee; and they have an almost done final report that has been passed on to the Biological Committee.

The reason for that is that one of the things that they found in there is that one of the limiting factors to determining the conversion factors was the limit in the biological samples. It became evident that the best group to address getting more

biological samples would be the Biological Review Panel.

They're going to be taking over that; and Joe Myers has been doing presentations to kind of help that transition with Heather. Also the Resilience Factor Project, Richard Cody had been spearheading that. The Resilience Factor is one of the columns that are in the biological matrix. What we would like to do is sort of standardize the way that column is filled out.

He was spearheading that. He's left the Committee; as he changed positions. He is going to be passing that baton onto Mike Errigo; and they're going to be meeting up so that they can work on that this year and Mike is going to get that completed this year. The Biological Inventory Application, there used to be a spreadsheet for the biological inventory.

What we would like to do is move that into an electronic version. We're going to start testing that with the committees this month. The idea behind that is one, it will make the inventory available online; in a way that will be more publicly visible. It will also help us to eventually integrate those inventories, each program, with the data that starts coming in.

You'll be able to go back and look at the inventory; and find the metadata that goes with the data that you're pulling out of the biological module. They also had a hot topic presentation by Mike Errigo. This is just where members get an opportunity to present work that they're doing; so that others are aware of what's happening in other places.

He presented on the South Atlantic States Pilot Project with the charterboat electronic reporting. There was a lot of positive feedback on that. He was actually, I'm not

sure if he's doing it, but he was actually asked to present that at AFS; so we'll have to follow up with him, and see if he's going to go ahead and do that presentation.

I'm going to just keep going unless people have questions. The Bycatch Committee, they also had their meeting in February. Those usually go back to back. They are exploring some citizen science projects. They feel like that might be a good opportunity to get some funding for bycatch; and so they are going to be working with Amber Von Harten at the South Atlantic Council. She is going to be doing a presentation for them; to kind of get everybody on the Committee up to speed with that project. They are also doing the Bycatch Inventory Application. There are very similar inventories, so I won't give you that whole spiel again, just reference the previous spiel on Bycatch Inventory Application, and also Mike Errigo gave the same presentation on the charterboat. It was received well by both committees.

The Commercial Technical Committee met in March of this year. They discussed a number of topics; the first is the new seafood traceability API. This allows dealer to vendor sharing of SAFIS dealer reports. This is specifically for us single dealers. It's not across all multiple. You get approval for having a single dealer; and then this goes out to the vendor, and they're able to use this in traceability applications.

So far we've been working with a group called Backtracker. They reviewed the new data warehouse; the public summary for the reports of commercial landings and harvest data. When we rolled out the new data warehouse, we had done a survey and there was an approach to the way that non-confidential data were presented.

Everyone said that was really the way they wanted to go. Now it's out there they decided maybe it's not exactly the way we wanted to go.

We're going to go back to sort of the way we used to do it; but a new, improved version of the way we used to do it. We've completed all of that work; and he presented that to the group. At this point their next discussion is going to be when we can't show you a true total and we have to show you our adapted total.

We're developing a stoplight sort of version; so that you can determine yes, it's a redacted total but it's still a really good total, so it's good enough for you to use or it's a redacted total and it's not anywhere close to the real total, so don't go ahead and use it, but doing that in a non-confidential way. That's the next decision that that group has to make. We also demonstrated the confidential access approval tool; which I discussed earlier, and again that group is working with the Biological Committee to transfer the Conversion Factor Project over.

CHAIRMAN FEGLEY: Thank you very much, Julie; any questions?

MR. CAHALL: I've got one more.

CHAIRMAN FEGLEY: Sorry, one more.

MR. CAHALL: I'll take the Information Systems Committee; it met in March of 2018. They are doing a lot of looking at what we're up to and making comments on. They reviewed the status of all the different applications, held their deployed the kinds of issues that we're having, also reviewed the planning that we're doing for the SAFIS redesign, and as always the members had some input to that.

We also talked a lot about the ongoing projects; the Southeast Trip reporting, which is going to factor quite large in the work that is going to be ongoing in the next year or two. The North Carolina data integration, which is actually a warehouse project, we have built a new interface that allows North Carolina to much more quickly interactively upload data into our system; and it's reduce the upload time that is now monthly intervals. Also, we're working with our friends at Bluefin to create an API for Vessel. This is important, because Vessel is going to be very widely deployed over the next maybe two or three years, as it is expanded. It is the baseline tool that will be in use in the Gulf; and is also in use in South Carolina at this point. But Bluefin also does a lot of the dealer reporting. One of our things that we really wanted to do was go ahead and build an API; so that they would be comfortable being able to submit data into SAFIS again.

Our goal is to get a complete picture; so that you have one-stop-shop to get your catch information, rather than have to go to three or three different systems in order to get it, or as we're doing right now for Highly Migratory Species, merging disparate datasets together pretty much on the fly. We are also watching our change management process. We have a change management for the changes in the coding that we're going to be using in the data structures for gears; which I mentioned a little bit earlier.

That is almost through our change management process. A couple of Massachusetts presentations, something our systems have never been able to do before, which is say oh, I didn't actually leave the dock but I wanted to, or oh I left the dock and I never put any gear in the

water, so those are no catch, no effort. We needed to be able to account for that and Massachusetts presented some research on that. We have actually already implemented that in the online version of eTrips, in response to requirements of GARFO.

Then finally, Massachusetts did some auditing on the data that they were receiving from SAFIS; specifically the kinds of errors their captains were making, and why these errors were made, and what kinds of steps could be made either in training or in the application itself to address them over the longer term. We're reviewing that report right now. We will of course integrate its findings into the work as we move forward. Then we do standard code and we're done.

MS. DEFILIPPI-SIMPSON: The Standard Codes Committee doesn't officially meet like the other committees; because they kind of do a constant review of codes. This is just a summary of the things that they've considered in the past year. There were duplicate handline codes in the 300 series and the 700 series. We're going to continue to use the 700 series.

There were some updates to common names with angelfishes and butterfly fishes, and then there was a series of species that needed to be added; and species groupings for things like copepods and isopods and such that was part of the forage species regulation. Those were all added. Then we also had an additional species that was brought in from the South Atlantic Fishery Management Council pilot, and this is for mackerels.

This is actually a target species; so this is meant to be a grouping to be used for target species, not to be used for landed species, which is a pretty big differentiation

in which list it will show up in eventually. Then there was new gear from the Northeast Observer Program; which is the otter trawl bottom twin shrimp. There are pictures available if you're interested.

Then the final thing was the discussion of the primary gear codes. Mike has mentioned the gear codes a couple of times. If you head over to the standards, Appendix I has gear codes in it. This is Table I-1, and these are the primary gear codes. For each of our gear types these are the fields that exist as primary gear codes. Then anything that's a secondary gear code appears in the rest of those tables; and that's the flexibility that Mike was referencing. In order to start this discussion, what we wanted to do was have Standard Codes review this table and make sure that everyone was actually using the same definition for all of these fields.

Unsurprisingly, it turned out that there was some variation in what was being used. Anything that's listed in green is the definition that was there and it stayed the same. Anything that's listed in red is the updated version of the definition; based on the fact that that's pretty much what everyone was using it as, instead of what was listed there. This is the new version of the I-1 Table in your codes. You can take this slide and just slide it into your copy.

MR. WHITE: Okay great and the Recreational Technical Committee has been busy and ramping up for their next meeting. They did have two long conference calls, three hours a piece, on April 9 and April 30. Just yesterday they did make progress on clarifying what they wanted to include for 2019 headboat additional sampling proposal above the base MRIP/APAIS sampling that was there.

Their primary focus is really continuing work on the recreational implementation plan that was approved by the Coordinating Council last August. That is really ways to identify areas to improve PSE, and to make great strides on what the concept of comprehensive for-hire data collection would look like.

I have a very exciting slide on that coming up. But under APAIS, as logbook validation, there was a project that we finished last year with South Carolina, to look at APAIS as validation and do re-estimation. That report was submitted in the fall, approved for release and released via MRIP in February, I believe. That one is available if you're interested in that.

It really pointed out that it is great progress. MRIP was really excited about it. There is a little bit more work to be done in the areas of matching the vessel and the trip reports between the APAIS intercept and the logbooks before moving forward. We've got some effort to work on that.

Stepping briefly through the next slide, this basically is the current state of the various data collection programs. All I want you to focus on here is that the lighter colored boxes at the top are MRIP/APAIS in for-hire for the catch sample, is combined with the for-hire telephone survey as the effort sample, with a connection for effort through the Northeast and Mid-Atlantic VTRs, to come up with the for-hire catch estimates.

All the darker blue boxes are useful surveys or data collection pieces that are not directly integrated or connected in with that. Stepping forward to our new and exciting slide, discussed and approved yesterday with Rec Tech. This is kind of the

future concept that Rec Tech has signed on for to be fleshed out more.

What it shows here is the blue side is captain reporting, the green side is dockside angler reporting. The three boxes that have an orange border are the actual survey data collection. On the green side you've got MRIP/APAIS data collection as the survey methodology. On the blue side there is the current MRIP for-hire telephone survey data collection on the bottom; and then the idea of a certified mandatory logbook data collection at the top. The interesting parts here are separating the vessel frames, so that if in the future, and if you noticed there is no timeline or agency that's doing this or cost associated at this concept point.

But if you follow it along on the topside, if a vessel is doing a mandatory logbook and it is encountered by APAIS, so it's part of that frame. You combine APAIS with that logbook for both the catch and an effort estimate; and that goes in kind of that top orange box, so it says certified logbook frame estimate.

If you follow the bottom path, you take vessels that are intercepted by APAIS that do not have a logbook, and in most cases those are at the moment those are state water vessels. Those we the Rec Tech Committee believes you still need some sort of a sampling for those vessels without a federal logbook. Some sort of a for-hire telephone survey would still need to occur. You get the APAIS samples from the telephone survey for effort, and add that in to have its own component.

Add the logbook frame to the survey frame, and you get a grand total picture. The challenges we're really trying to figure out; state waters, federal waters, charterboats and headboats, where any particular state

or data collection program is within that graphic is probably subject to change and clarification. But this picture has some buy-in from our partners in the Gulf, those in the South Atlantic, and those further north on the Atlantic Coast. That is our new graphic. That's it.

MR. CAHALL: It's definitely our hope that we will be able to create a single unified dataset that combines both the survey and the validated logbook data; to create a single estimate. It's going to take a while; but it's definitely a direction we would like to go in. Quickly to go through the Operations Committee, they've reviewed all the summaries for the FY 17 projects.

As you might recall we were asked to be able to monitor those. We also received and discussed the Rec Tech letter on the proposed direction; for looking at the precision in for-hire, which is pretty much what you just looked at. Agreed on some changes to the Proposal Review Process in order to try and streamline it a little bit. They looked and reviewed the FY19 RFP package, which you have in your stuff.

Then finally we talked a little bit about how to improve the project reporting. You may recall that the Operations Committee has been asked to monitor the projects a little more closely. I think that what we've tried to do now is we're going to have to track the reports a little bit better. I'm trying to get them from the Grants Offices; sometimes it's proved a little problematic in getting folks into the habit of CC-ing us when the reports are submitted has been a little bit of a problem.

We are going to have to maintain something internally to keep track of what the schedules the projects are running on, and when the reports are due. In terms of looking at the changes to the RFP package.

You all have that in your packet. These are the changes that were made; and the primary change was to change to raise the biological sampling to be at the same level with catch and effort. This is obviously to encourage folks to come in with biological projects, and the others remained primarily pretty much the same. Now we also, the other factors scoring range was changed as well between 0 and 3 points, and these are qualitative more than anything. Then finally, we're always looking. We combine innovative and new technologies; because we felt like they were a little bit redundant, in terms of how things were put to difference.

We were also a little bit more defined in how in-kind is supposed to be managed. In-kind is always a discussion point. For those of you who were on Ops in years gone by, you probably remember that discussion. Then as a reminder, this round that we're going through right now is the last year for full funding.

Beginning in FY20, we were looking at 33 percent cuts to the maintenance projects. I'll also do the Advisory really quickly. Our Advisory Committee is active; although small. It usually has to meet late in the evening in order to avoid being overlapping with folk's livelihoods. Again, there was some discussion about potentially asking the PIs to participate directly in the initial proposal reviews; actually inviting them to do presentations on the proposals.

I think the final decision was that we didn't really need them to do that. They are going to do it, okay thank you. Also looking at obviously more Advisors, they did review and approve the FY19 RFP Package, again which you have. Then they expressed some concerns about the dates for the Advisors/Operations joint meeting. This

year I think we're going to try to have it in Savannah; and we're going to do our best to work around their schedule, so that they can all participate. Yes, now we are done with committees.

CHAIRMAN FEGLEY: Thank you. Are there questions? Jay.

MR. JASON McNAMEE: Yes a question for Geoff. Thank you guys very much for the presentation, and so Geoff, when you were going through it never popped into my head before, but it did, lucky you, just now. There may be a very simple answer to this; but I was thinking about all of the recalibration with the CHTS to the FES.

Then I notice in the for-hire module it's still a telephone survey; and so I wondered is it because it's conceptually different because you're calling people based on permit information. Is there better success at getting responses? I was just wondering about that as you went through that slide.

MR. WHITE: No problem. The transition from the Coastal Household Telephone Survey to the Fishing Effort Survey has always been defined as for private and shore fishermen. The for-hire telephone survey, because there is a well defined list of for-hire vessels and captains to call, the CHTS is the one that MRIP was getting much lower response rate, less than 10 percent.

The for-hire telephone survey commonly gets response rates in the 40 to 60 percent range. That methodology has been consistent and stands up. They're not looking to change that right away. They are looking to take the for-hire telephone survey out for peer review and certification in the near future.

CHAIRMAN FEGLEY: Any other questions? Jeff Brust.

MR. JEFF BRUST: A question for Julie regarding that table with the new definitions for was it gears and different data elements. There were quite a few that were in red; which means that they were changed. I'm just wondering, and you had said that maybe not all of the states were using the same definition. What the new definition is now, what the majority of folks were using? Hang on; I think I have a couple questions here, so please bear with me.

Is it what the majority were using? Then if the folks that were in the minority are they now using the new approved definition? Then three, what does this do with the consistency in the integrity of data going backwards? Do we have some metadata? Is there a way to identify what definition different states were using in the past, so that we can maintain integrity, and understand when it gets to the Technical Committee what they are actually looking at?

MS. DEFILIPPI-SIMPSON: When standard codes went to look at this question, what we decided to do was that having a discussion for the folks that were in the room could limit us; because there might be someone who doesn't come to the room. What we did was we did a survey; where I put together a survey that put all of these, every gear grouping in every category, and how do you use it?

That would be a metadata going backward is that we have the survey answers of what people were currently doing. Coming to consensus on what that decision would be going forward. A lot of it did turn into, you know seven people said they're doing it this

way, the other three said they're not collecting that.

A lot of it just kind of became a little bit of a low-hanging fruit. There were some that had a little bit more heavy discussion involved in them. That is part of the reason for the needed flexibility in the additional gear attributes. For some things, some folks really wanted the length of a line; someone else really wanted the mesh.

If we can go with the length of the line as our standard definition; then the mesh can be put as an additional gear attribute, so that that information can still be collected for those that need it. That is kind of part of the impetus for doing that; as well as some of the South Atlantic things moving forward. This discussion just happened two months ago, so this is just the new table.

As far as everyone getting onboard with moving forward; that will probably be a slow, slower, and staggered approach. But we do have the survey, and we can share that with anybody that wants to know what responded. We did get most partners to respond. Not every partner did respond. Did I answer all your questions?

MR. BRUST: Yes, I believe so; but I guess I just have one more if I may, Madam Chairman. The ones that were changed, it seems like or I guess a question is what was in the document before you said was not what was being used. But were most of the folks using something consistent, most of the states using something consistent, it just happened to have changed from what we decided 20 years ago when that table was first created?

MS. DEFILIPPI-SIMPSON: Yes that is exactly what happened. In a lot of cases everyone was doing it the same; just not what the

standard was. It made sense to update the standard to do what everyone is doing.

MR. BRUST: Thank you.

CHAIRMAN FEGLEY: I believe there was a question here at the rear of the table; Sir, apologies for not knowing your name.

MR. GREGG WAUGH: That's all right, Madam Chair, Gregg Waugh from the South Atlantic Council. I do have a question. But first I would like to express our Council's thanks to ACCSP and the staff; Mike, Geoff and Julie have been a great help to us over the past several years. We've got our charterboat reporting pilot that's wrapped up, and we're hopefully now moving into mandatory reporting for that sector.

They've been a great help with our private recreational project, My Fish Count. They've spent a lot of time working with the Southeast Regional Office and Center getting them up to speed on what ACCSP can do. They are partners, but there is a lot of staff in the Regional Office and the Center that now has a full understanding of the full capabilities of ACCSP. I want to express our gratitude to them and the entire staff for all their help. For Mike, in terms of data integration from the Southeast and the Northeast how is that progressing?

MR. CAHALL: There are issues, mostly in the sense that they're not used to pulling data from the same place. An issue that we're working right now with for HMS and compliance is that we are getting dealer reported data from the Southeast that is coming in on the Southeast permit. But these folks are dually permitted.

Right now GARFO doesn't have a clean mechanism for reaching in and pulling those landings out of the system attached

to the correct GARFO permit, so that they can do the Northeast compliance. These are the kinds of issues we knew eventually were going to come up. But this is a project that we were just made aware of about two weeks ago.

We started working on that; and we're going to have to build some way so that GARFO can reach in to look at data, and already have it cross-referenced to their permits. We have all the permits, and we can build the cross-reference structures. But when the process is where they build the data that they work with every day, we're going to have to work with them to get into the habit of being able to do those cross-references automatically.

The same will probably be true as the Southeast begins to build their infrastructure more too, so that they can look at reports that may be coming in under a GARFO permit, but they are for dually permitted dealers or vessels, and they need to be able to meet the Southeast requirements as well. These are actually good issues to have. It means we're all pulling data from the same place.

REVIEW AND CONSIDER FY19 REQUEST FOR PROPOSALS

CHAIRMAN FEGLEY: Okay, further questions? Great, then I would suggest we roll right along to the next agenda item to Review and Consider Approval of the FY19 Request for Proposals. I'll hand that over to you, Mike and we'll be looking for a motion on this one.

MR. CAHALL: This is a fairly standard document; which we do pretty much every year. The main difference this year is that we did change the ranking criteria; which was presented a little bit earlier. Does anybody have any questions about the RFP

itself? Gregg.

MR. WAUGH: Thanks, just a minor item, but on Pages 1 and 6, you've still got the Executive Committee in there. Maybe that should be Leadership Team.

MR. CAHALL: Thank you, we'll correct that.

CHAIRMAN FEGLEY: Further questions? Do I have a motion? Jeff Brust.

MR. BRUST: I would like to move to accept the 2019 RFP as amended, or corrected, I guess.

CHAIRMAN FEGLEY: Thank you, second Robert Boyles. Is there any discussion on the motion? Is there any objection to the motion? Seeing none; the motion is approved by consent. Thank you that was record speed. Okay so now we're going to move on quickly, oh Bob Beal.

EXECUTIVE DIRECTOR ROBERT E. BEAL: Question, now that the RFP is approved. Mike mentioned in his presentation that 2019 is the last year full funding for maintenance projects that have been in existence since the Policy was approved. I think it would be impossible to be too direct with the states or the agencies or the PIs that we're going into the cycle which will be the last full year of funding.

I would suggest we send them a letter, do something very direct with those folks, because they will be fully funded, potentially for another 18 months or so. But, if they have to go to their state legislative process or state budget process, or something to cover that shortfall. Those conversations are going to need to start in the states.

I think it was Rhode Island, Maine, and

South Carolina. They used to be the group that had maintenance projects that were going on for awhile. I don't know if they still are. But somehow just directly alert those folks that hey, heads up this is it. I hate to have them get farther into the process in 19 and sort of not know about it. I'm sure they know about it; but it can't hurt to be really direct and blunt.

MR. CAHALL: With the Chair's consent I'll coordinate that language with Bob and incorporate it.

CHAIRMAN FEGLEY: Yes, fair point, and Robert Boyles.

MR. ROBERT H. BOYLES, JR.: I was just to reiterate Bob's point, Mike. I wouldn't be shy. I mean we're expecting it, we're planning on it, and we've talked about it. But you could remind us again in writing, thank you.

CHAIRMAN FEGLEY: Okay, reminders are good. I think the next item is the one, the addition that we made at the beginning of the meeting, and I'll turn that over to Julie to talk quickly about data validation.

DATA VALIDATION

MS. DEFILIPPI-SIMPSON: I just have two really quick slides. The first one is just a little process background sort of thing. We've been working a lot more closely as the Data Team with the Science and FMP staff on the stock assessments. We've been providing a lot more data than we ever have in the past.

That has kind of given us an opportunity from all staff to see areas where we can improve on the things that we're doing. One of those is obviously that as ACCSP staff we need to have more knowledge of timelines and expectations, and how the

process is working, and how the process is changing or going to change.

Then there is also a need for we want to develop more integration into the provision of ACCSP data to the stock assessments. We've been working really closely with the Science and FMP staff on that and even just recently we were looking at the spreadsheet that goes out to the TC, and what their tabs are asking for, and what works so we don't duplicate the efforts and ask people who are providing data to provide data there and also provide data to us.

We're working really hard on that. But we do know that it's an ongoing process; and there is always going to be growing pains to any kind of process like that. But one of the things that it kind of really gives us the opportunity for is feedback in both directions. A good one for that is kind of the timelines.

We know that we've talked to a lot of folks recently; we have a lot of open data requests with folks right now. I mentioned earlier on the data commercial slide that there are five open stock assessments. There aren't different people in the states that are providing those data. We go to the same five people; and those are also the same people that did a really great job of doing the spring data coordination.

We realize that we're kind of putting a lot out there right now. If we go to the next slide, things that this spring has taught us that we all knew were out there, but things that have been really kind of highlighted, because there is so much out there and open. The first one is really just overall we understand there are limited resources; and that coordination and communication now,

and as much as possible, in the end is really going to be what reduces the workload.

We notice consistency is a problem. In some cases we did validations; and then we went back and someone said hey there was an issue, so we went back to everyone and we said hey, can you double check all your numbers? If someone different from the state responded we got a different answer. That is difficult for us; because now we've got two different data standards and we go back, which person do we ask and where does that go from there?

Then also there are differences when we could look at the Compliance Reports, because some of that comes from the fact that they come from different people. Some of that is a timeline issue; because of the timing of some of the compliance reports, but some of it was that folks we were talking to didn't know where the data in the Compliance Report was coming from. That is an issue too. Then also changes in updates. There are always things changing in your state; something that's changed or a new data feed that has come up in your partner. It's really important that when we have those January calls, if you're the person on the January call that enough of the staff from a partner is on that call, so that we're aware of new things.

We did have validations this spring where we got back no, these are data. We went back and said these are very different. They said well we're very confident in them, because we have a survey. I went back and said, do you send us those data? Well no, so that's a problem, because that makes the data different in two different sources.

Then also, just in the same vein is the idea that once the stock assessment is over there is this need or want to just okay,

we've got the spreadsheet that goes into the model and we're going to move on. That leads to inconsistencies in the future. It also means that three years down the road when we do the next assessment or we do the update, the data are going to be different again. The validation is going to be more complicated; because there is going to be inconsistencies.

Someone is going to go to a website and go to the ACCSP website and pull the data from there to do a quick update; and that is going to go into some Commission, maybe regulatory document, and that's going to be different than maybe what's in the stock assessment. Then somebody else might pull it later, and now it's different on the website.

Now everyone is in the meeting and they have different data. It's really important to not end the project of validation when the stock assessment process is over. We feel like we would love to coordinate with anybody that wants to coordinate. Mike mentioned the North Carolina Project. We did a lot of work with that. Maryland has reached out recently; and we've been working with their staff a lot on their merge process, and also in how some of their data feeds are coming to us.

We just had a couple new ideas the other day. We're willing to work with you guys however you want to work with us. We just want to make it known that there is a little bit more work that needs to be done. If we can do the work now we won't have to do the work later kind of thing. I think that is my spiel.

CHARIMAN FEGLEY: Yes, thank you, Julie. It's important. You know we certainly in Maryland have gotten caught flat footed a few times on data validation, where the

timelines caught up with us. We're going to actually try to do an annual data validation of our species, and try to improve those communication lines between our TC reps and our data people. This is really just information for the group; you know within your states that we are having these data stream issues. Are there any questions? Dan.

MR. DAN MCKIERNAN: In that second bullet about compliance reports. Is it necessary for the Plan Review Team to communicate to the states that when landings data are submitted they should be consistent? In other words, SAFIS dealer reports versus harvester reports, and the information sort of time stamped that as of this date. Because I've often thought it would be useful to sort of archive some of our compliance reports, because it's a great snapshot in history. But in fact, if the data requests are changing or not consistent, so maybe it needs to be tightened up, in terms of compliance reports. Is that sort of what you're getting at here?

MS. DEFILIPPI-SIMPSON: I think we found, depending on the species there can be different issues with the compliance reports. Some of them, because the compliance reports are due in a certain timely fashion, it means that the data that are available are not going to be the best available data moving forward.

That just means that the compliance report three or four months after it's due, the data that are available for that species are probably better than when the compliance report was due. That can lead to some inconsistencies, just because the data are better by the time we get to comparing to what was in the compliance report.

MR. MCKIERNAN: Yes that's a fair point; but I've sort of taken staff to task saying tell me this data source, tell me it's SAFIS isn't enough.

MS. DEFILIPPI-SIMPSON: Yes, I think that would be really helpful; and I think I know in working with the FMP and Science staff. When we were looking at the compliance reports, for us it was definitely sometimes a little vague on where those numbers were coming from. Even for some of the states when they were following up, and we were asking what the difference is and they were like; I'm not really positive where that number came from. It was hunting down the person who had submitted that report; to kind of find where those data were coming from. Maybe stating, I got this data here. That's a good recommendation for a process improvement.

ACCOUNTABILITY STANDARDS

CHAIRMAN FEGLEY: Any further questions? Okay seeing none; we have one final agenda item. I would like to make this very quick; because we are at our official meeting end time. This really has to do with an idea really, as Mike and I have been talking and reflecting forward on my time as Chair. What are some of the things within ACCSP that we could get ahead of?

What are the things down there on the tracks that we may have to swerve to avoid? One of these is the idea of accountability. As ACCSP is expanding from its role as a data warehouse more and more into a platform for electronic reporting, we want to make sure that we're cognizant that we're getting the most of our investment, and that these data have an ability to be verified and accountable.

I think it was Mike who spit out the term accountability standards. When I say accountability, what I mean is it's a

mechanism to verify that the harvest data reflect what's actually happening on the water. You know in Maryland we definitely have some issues with non-reporting, we have issues with inaccurate reporting, and that happens for a lot of different reasons.

Basically, what accountability standards would do, would be to provide some consistent guidance to states going forward of incorporating some verification methods into these electronic platforms. Then data that meet these standards could be flagged in the database. How it would help, it would help to maximize our investment in these new platforms. It could allow for the creation of a tool that could assist ACCSP, could assist the states in enforcing reporting compliance, so in other words if something is looking a little wonky, there would be ability for a flag to be placed on a certain report that the state would need to contact that harvester. Then we would also over time wind up with improved data for stock assessments, and for those allocation decisions which often hinge on harvest and seem to be getting more and more common. I just bring this up really as an initial temperature check to this group, sort of a pitch if there is interest.

If you think this is worth pursuing, Mike has said that his team could go back and think about it and gin up some examples that they could present at the August meeting. If at that point in time the interest continues, then we could potentially consider forming a workgroup that would include the various technical committees and some law enforcement, and NOAA Fisheries to flesh out ideas. That's my pitch, and I'll open it up for discussion, and if people want to head to happy hour I understand. Dan. Jay.

MR. McNAMEE: I think this is a great idea. I guess what I was wondering is, and I'll speak for Rhode Island. We have an accountability process, so I'm guessing other states probably do as well. That might be a good first step is to accumulate what states are already doing to get at these accountability issues with their seafood dealers or what have you. Then I bet there are a lot of commonalities and I think from that you can get good ideas. You know, we're doing X, Y, and Z but not Q. That was neat and we'll adopt that; that kind of thing.

CHAIRMAN FEGLEY: Yes thank you for that. That is an excellent point, and that was certainly one of the questions in my mind is what are other states doing? We're trying to implement some things in Maryland; but it does cross my mind, does anybody else have the problems that we have and what are they doing? That's well taken; we'll proceed with that.

MR. McKIERNAN: It seems to me that as a manager, you know we talk about moving over to more electronic reporting; because we're sort of infatuated with the cost savings of not having to hire key punch operators, or data entry folks. But a lot of times a smart data entry person can see the wonky data.

I think what you're talking about is, especially as you drift into more of a universally electronic submission. We've lost some of the eyes on the data going in; so I think you're talking about more of a requirement that you need a routine audit to just check a portion of these going in, right?

CHAIRMAN FEGLEY: I think that's part of it. I think for a Maryland specific example, you know one of the other issues that we have

is we have issues of non-reporting. If we put a person on an electronic platform, it doesn't stop them from not reporting, which is why we use a system with a hail.

Because we know that if they hail then we know that we have to expect a report from them on that day. If they are on the water and they didn't hail; our law enforcement can see that and that's a penalty. It's also those sorts of things; where you can actually ensure that the reports coming from the fleet actually reflect the behavior of the fleet.

MR. CAHALL: Make sure I understand. What we might be looking at is say a group of trip reports for Maryland; and we might qualify them by saying they are validated using this method. It would be a kind of metadata, really; that would maybe point back to a standard suite of validation methodologies that we're aware of.

That anybody using that dataset would be able to say well, the Maryland portion was done this way. Maybe Rhode Island portion was done through this method. That way we would be able to provide a pedigree for how these data were managed and validated. That's what you're driving at? Yes that makes sense, Lynn.

CHAIRMAN FEGLEY: Cheri.

MS. CHERI PATTERSON: I think it's a good idea also. I'm wondering if there could be some standards developed around it. I know that there is going to be individual state issues also; because our platforms are different. However, I think that it might behoove us to look at standards; and maybe produce a standards document for other states or partners that are looking to develop something.

CHAIRMAN FEGLEY: Matt.

MR. MATTHEW GATES: I agree to. Accountability and verification is always an important thing. We talked a while ago about the pre-trip notification system. Does that sort of tie into this thing too on that?

MR. CAHALL: It certainly could. That is part of the work that we're going to be doing in creating an integrated reporting system. Right now, to my knowledge, the states don't require pre-trip notifications in quite the same way that I know some of the federal regulations require. But we certainly expect as things move forward that we will have to be able to account for that; or at least the hail-outs. I think yes certainly that will be built in as we move forward.

CHAIRMAN FEGLEY: Matt, follow up.

MR. GATES: Yes, I think some of the states will probably start requiring some of the pre-trip notification things if they start exploring multistate possession limits or something. It's worthwhile going down that way.

CHAIRMAN FEGLEY: Gregg.

MR. WAUGH: The South Atlantic Council would be very interested in this being pursued. We've got a situation where in our commercial fishery the fishermen are reporting some paper now; but switching to logbook. They can go the whole year without providing any data at all; and it comes time to renew their permit. Then they get a notification that their permit renewal is incomplete, and they're asked to provide data. I think this would help address this and get some more accountability during the year and lead to

much better data. We would be very supportive of this.

ADJOURNMENT

CHAIRMAN FEGLEY: Thank you for that. I think what I'm hearing, in the interest of time, maybe the starting place would be to ask Mike and his team; and we can work together to do this exercise of polling the states on what sort of measures they currently have in place, and bring that back to the August meeting with also some examples of what this might look like functionally in the data world; so that we can ponder it in August and then proceed from there. Is there any objection to that plan? Okay, seeing none; and is there any objection if we were to adjourn? Meeting adjourned.

(Whereupon the meeting adjourned at 5:10 o'clock p.m. on May 1, 2018)

	Partner	Title	Primary Module	Others	Cost
MAINTENANCE	1	ME DMR	FY2019: Managing Mandatory Dealer Reporting in Maine (36 pages)	Catch/Effort (100%)	\$ 213,951
	2	ME DMR	Portside Commercial Catch Sampling and Comparative Bycatch Sampling for Atlantic Herring, Atlantic Mackerel and Atlantic Menhaden fisheries (42 pages)	Biological (70%) Bycatch (30%)	\$ 25,454
	3	RI DEM	FY19: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island (18 pages)	Catch/Effort (100%)	\$ 76,920
	4	RI DEM	Advancing Fishery Dependent Data Collection for Black Sea Bass (Cetropistis striata) in the Southern New England and Mid-Atlantic Region Utilizing Modern Technology and a Vessel Research Fleet Approach (37 pages)	Biological (40%) Catch/Effort (30%), Bycatch (30%)	\$ 132,749
	5	NJ DFW	Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries (34 pages)	Catch/Effort (55%)	Biological (45%) \$ 164,356
	6	SC DNR	ACCSP Data Reporting from South Carolina's Commercial Fisheries (17 pages)	Catch/Effort (70%)	Biological (30%) \$ 168,870
	7	ACCSP RTC	Supplemental At-Sea Sampling for the Recreational Headboat Fishery on the Atlantic Coast (18 pages)	Catch/Effort (50%)	Biological (40%), Bycatch (10%) \$ 107,087
	8	SEFSC	Continued Processing and Aging of Biological Samples Collected from U.S. South Atlantic Commercial and Recreational Fisheries (24 pages)	Biological (100%)	\$ 300,550
Total Maintenance					\$ 1,189,937
NEW	9	NC DMF	An Updated Economic and Social Analysis of the Commercial Seafood Dealers of North Carolina (19 pages)	Socioecon	\$ 19,850
	10	ME DMR, MA DMF	Collaborative Electronic Tracking Pilot Program in the American Lobster Fishery (16 pages)	Catch/Effort	\$ 19,710
	11	MD DNR	Expanding Accountability in Reporting: A Tool for Comprehensive For-Hire Data Collection and Monitoring in Maryland (23 pages)	Catch/Effort	\$ 182,912
	12	RI DMF, GA DNR	Development of a mobile application to assist Maritime Law Enforcement personnel with Fisheries Enforcement tasks (9 pages)	Catch/Effort	\$ 59,875
	13	MA DMF, RI DEM	Integration of vessel monitoring systems and electronic reporting in SAFIS and SAFIS applications through API development and field testing of multiple hardware options (18 pages)	Catch/Effort	\$ 181,367
Total New					\$ 463,714
Admin	ACCSP	ACCSP Administrative Budget (23 pages)	Admin		\$ 1,816,503
Grand Total Proposed					\$ 3,470,154



STATE OF MAINE
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PATRICK C. KELIHER
COMMISSIONER

June 11, 2018

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

We are pleased to submit the proposal titled “FY19: 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 has required the sea urchin industry to use eDR mobile (ACCSP’s swipe card program) for the past two seasons. This is the swipe card program that MEDMR worked collaboratively with the Massachusetts Division of Marine Fisheries (MADMF), National Marine Fisheries Service Greater Atlantic Regional Office (NMFS GARFO), ACCSP and HarborLight Software LLC. The MEDMR brought its experience with the Elver System swipe card project to this effort in the hope that other partners may benefit from the new swipe card system and we could use our “lessons learned” to make this project a success. The roll-out during both seasons did not go as smooth as intended and identified bugs are still being addressed. 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 2019 ranking criteria: catch and effort, data delivery plan, 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 11th to address reviewer’s questions and recommendations. For a summary of the proposal for ranking purposes, please see page 28. 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 questions below. We are addressing them in this cover letter and within the proposal where applicable.

Questions

- Have there been any cost savings as a consequence of more data being reported electronically?

To calculate a true “cost savings” because of the shift to electronic dealer reporting is very hard to quantify. While it’s easy to calculate how much data entry staff time has been saved and how fewer logbooks are used on an annual basis, the amount of support provided to dealers reporting electronically from other staff certainly offsets some if not most of the savings. With the lower number of dealer records being entered, the part-time landings staff member (Office Associate I with 15% of time listed as in-kind) has shifted from entering dealer

data to harvester reported data; however, still assists with dealer reporting compliance and mailings.

- Does ME DMR have any plans to require swipe card for scallop dealers?

It is our current position that swipe cards only be used where there is a fisheries management need. Currently we do not see a need to introduce swipe cards into our inshore scallop fishery.

- Proposal highlights the dealer suspension authority and new time/costs/man-power demands associated with this authority and compliance. Which MEDMR funded position(s) administers the suspension authority? Might be worth noting/highlighting in the summary of staffing section and the costs associated with this effort.

Currently the Office Associate II listed as in-kind oversees the administration of our suspension authority. This is a 100% state funded position that was created just to administer the suspension authority. The cost of the Office Associate II's position is listed in the "in-kind" portion of this proposal. The mailing costs associated with this authority are around \$500 per year. This position is listed in the summary of staffing and will be highlighted.

- Is there any reason or insight into the significant jump in the number of suspension letters sent to delinquent dealers in 2017?

The increase in suspension notices to dealers coincides with the MEDMR movement to our new license system named Maine LEEDS. In 2016 we were in the first stages of transitioning dealer licenses to the new system and wanted to ensure the new processes worked before potentially suspending dealers for non-reporting when in fact there might have been a glitch in the system.

Recommendations

- Please recalculate in-kind.

I have spoken with Alexandra Schwaab for further clarification and she felt our "in-kind" was calculated correctly. We only include the expected time all non-grant funded and non-federally funded positions assist with the grant and their total salary and benefits. We have also included the program and maintenance cost for Bluefin Data, LLC's VESL elver system.

Sincerely,

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Atlantic Coastal Cooperative Statistics Program
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Arlington, VA 22201

FY19: Managing Mandatory Dealer Reporting in Maine

Total Cost: \$213,951

Submitted by:

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Applicant Name: Maine Department of Marine Resources (MEDMR)

Principal Investigator: Robert Watts, Marine Resource Scientist

Project Title: FY19: Managing Mandatory Dealer Reporting in Maine

Project Type: Maintenance Project

Requested Award Amount (without the NOAA administration fee): \$213,951

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 FY18 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 implemented swipe card reporting in the sea urchin fishery during the 2016-2017 season. The program used for sea urchins was the swipe card program (eDR mobile) that MEDMR worked collaboratively with the Massachusetts Division of Marine Fisheries (MADMF), National Marine Fisheries Service Greater Atlantic Regional Office (NMFS GARFO), ACCSP and HarborLight Software LLC. All 12 sea urchin dealers were required to report through the new eDR mobile program and represented the first time that sea urchin data were 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 and now eDR mobile swipe card projects to the 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 where there is a fisheries management need. Similar to the 2016-2017 season, the roll-out of eDR mobile did not go as smooth as planned. Unlike the previous year, the iOS application continued to experience issues for most of the season. The MEDMR staff was able to present data on this past season within a week of seasons end. Industry was impressed with how fast MEDMR could provide them with accurate data. The use of swipe cards in the sea urchin fishery allowed MEDMR to try a new method of managing fishing days in the sea urchin fishery. In past years, harvesters were provided with set days they could fish. For the 2017-2018 season the MEDMR allowed harvesters to pick their own days from a list of open fishing days. It was the hope of the MEDMR that allowing this flexibility will allow harvesters to stay home on foul weather days. 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 that swipe cards only be used where there is a fisheries management need. Currently we do not see a need to introduce swipe cards into our inshore scallop fishery. The MEDMR used their swipe card program experience as a learning process to help create a more complete swipe card program in collaboration with MADMF, NOAA GARFO, ACCSP and HarborLight Software LLC. For the 2016-2017 and 2017-2018 sea urchin season the MEDMR required all sea urchin dealers to use eDR mobile to report all sea urchin transactions. 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, entering and auditing a large numbers of records. In 2017, approximately 550 dealers were licensed to buy from harvesters and 213 (39%) 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 dealers, 218 (34%) chose to report on paper; 165 (26%) chose Trip Ticket (electronic reporting software developed by Bluefin Data LLC); 101 (16%) chose file upload; 53 (8%) chose key entry SAFIS; 81 (13%) were required to use VESL (swipe card reporting program developed by Bluefin Data LLC); 12 (2%) were required to use eDR mobile (swipe card program created jointly by ACCSP, MADMF, MEDMR and NOAA GARFO) and 5 (1%) would report using the NMFS quahog database (Table 1).

Table 1: Reporting Methods Chosen for the 2017 Primary Buyers in Maine

Reporting Method	Combo Dealers	State Dealers	Total Dealers
Paper	11	207	218
Trip Ticket	118	47	165
VESL Program	0	81	81
eDR Mobile	6	6	12
SAFIS Key Entry	40	13	53
File Upload	53	48	101
Quahog Electronic Logbook	5	0	5
Total Electronic*	222	195	417
Grand Total	233	402	635

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

Note: Twenty 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 1.41 million trips entered for 2017 in the data warehouse, 29% 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.

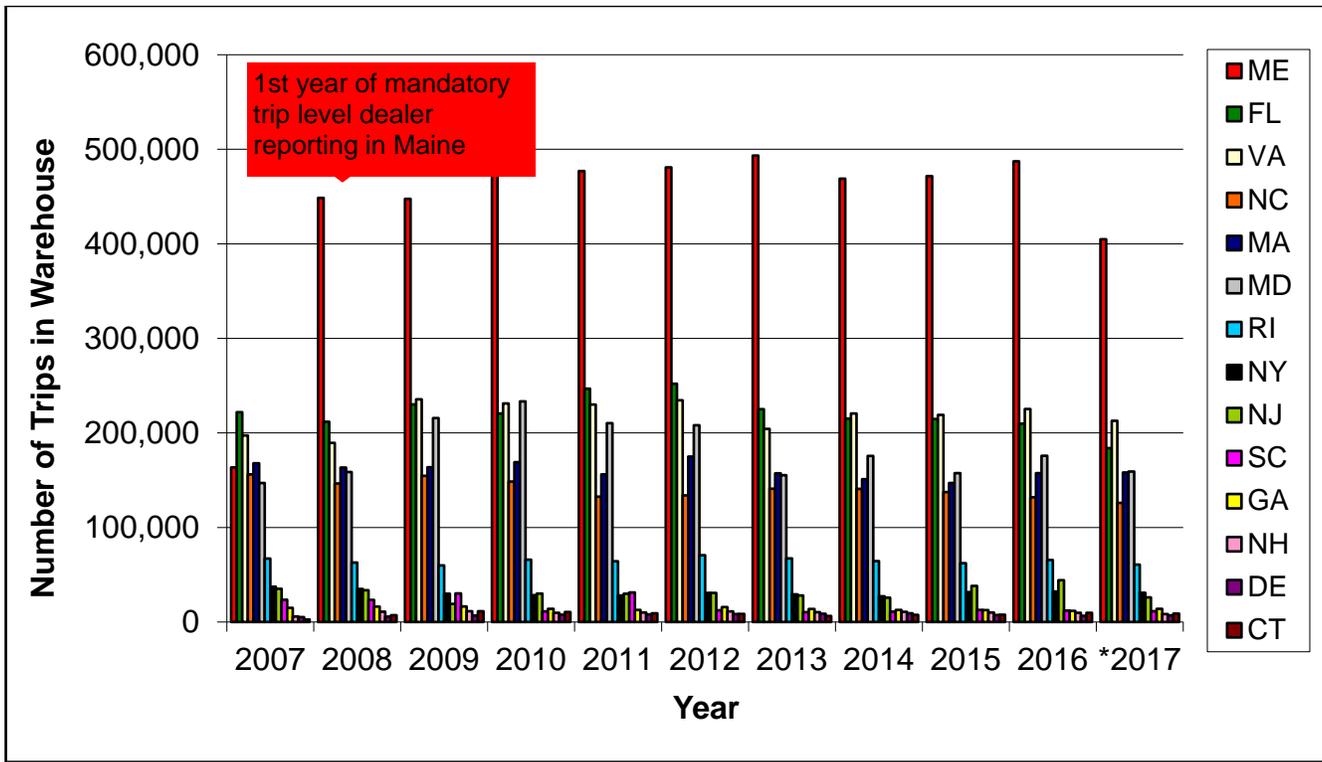


Figure 1: Number of Reported Trip Records by State Landed in ACCSP Data Warehouse

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.

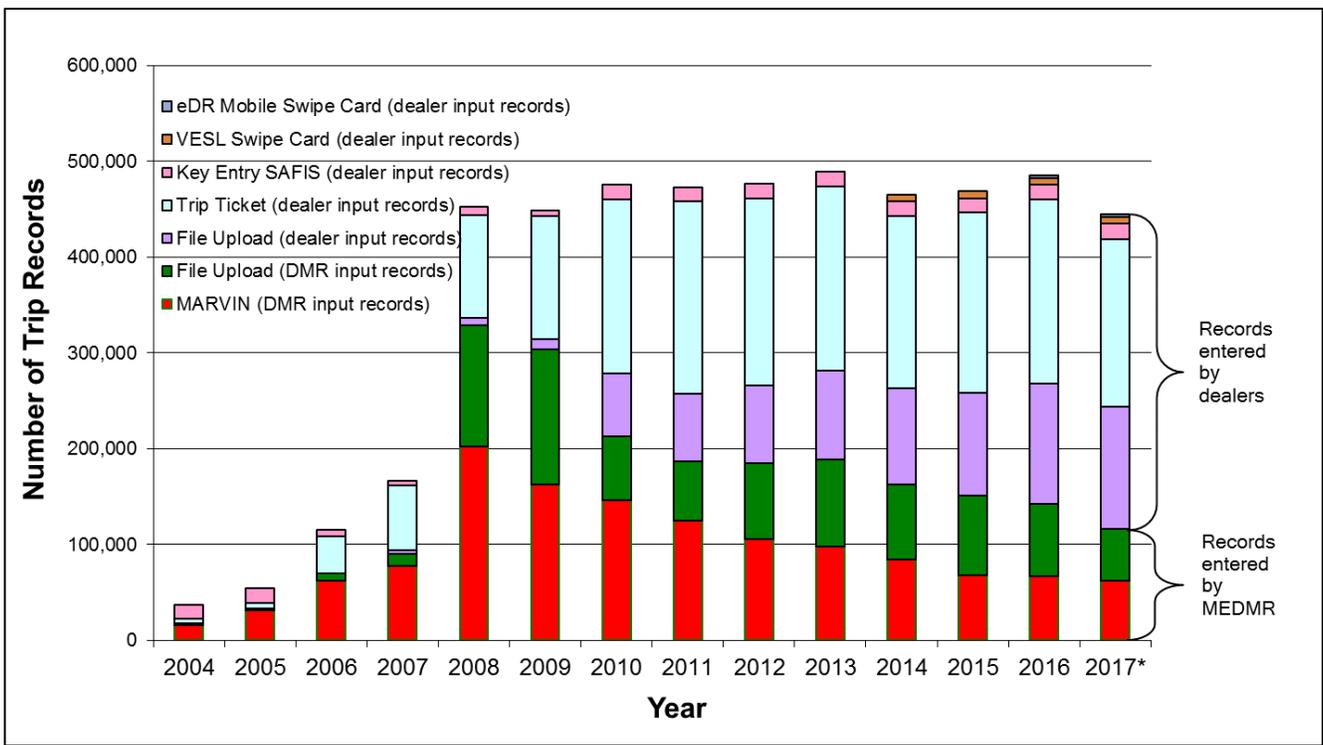


Figure 2: Number of Dealer Reported Trip Records entered in MARVIN and SAFIS

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 5/21/2018), Maine was ranked as the third highest state on the Atlantic Coast in commercial value (\$513 million) and fourth highest in whole pounds landed (231.3 million) in 2017. 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 FY18 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.

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).

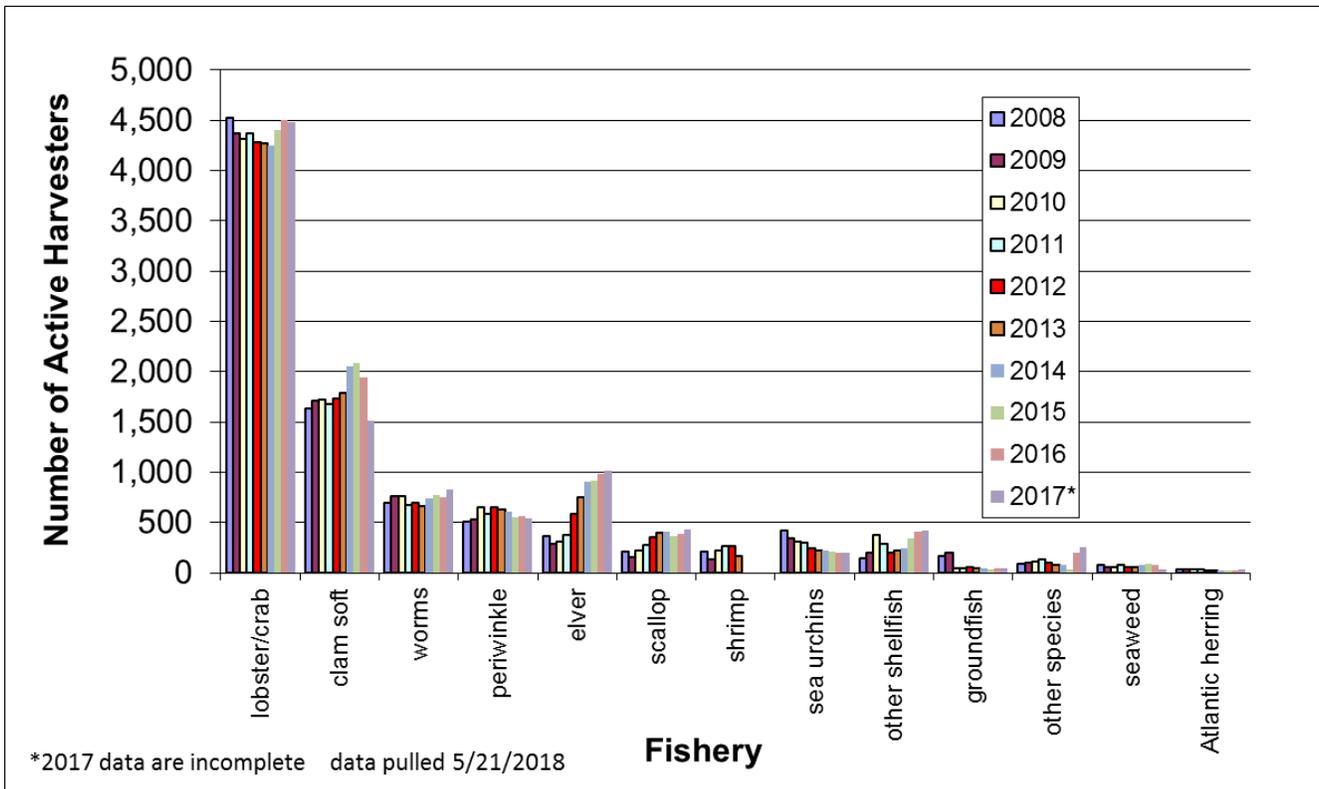


Figure 3: Number of Active Harvesters Reported in Dealer Data

This grant will allow MEDMR to complete an 12th 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 and sea urchin fishery. The MEDMR participated in a collaborative effort that created a complete swipe card program with MADMF, NOAA GARFO, ACCSP and HarborLight Software LLC that was used for sea urchin reporting the past two seasons. 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 month; 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 the ACCSP eDR mobile app project in 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). Currently only certain fisheries are required to report using swipe card technology so the swipe card report type are not counted above. 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, 2016, 2017 and 2018 seasons, the MEDMR required all elver dealers report daily using the “VESL” (formally the “Elver System”), which was created by Bluefin Data LLC. The MEDMR required VESL to be used to record and report all harvester to dealer transactions. In 2015, 2016, 2017 and 2018, the Elver System and VESL also tracked dealer to dealer transactions. The MEDMR paid for and supplied each dealer with an Elver System or VESL (starting in 2017) program and swipe card reader and training. There were a total of 36 buying stations that could have purchased directly from harvesters in 2018, 24 in 2017, 22 in 2016 and 27 in 2015. Starting in September, 2016 MEDMR required that all sea urchin dealers use eDR Mobile (created through collaborative effort with MEDMR, MADMF, ACCSP, NOAA GARFO and Harborlight Software) to purchase sea urchins directly from harvesters. During the 2017 – 2018 season, 12 dealer locations were set up and required to use swipe card technology to purchase sea urchins from licensed harvesters. That number is down slightly from the 15 that were set up for the 2016 – 2017 season. While the initial roll-out for both seasons did not come without glitches, by the middle of November most of the issues had been addressed. The use of the swipe cards in the elver and sea urchin fishery has eliminated the need of MEDMR staff to manually enter approximately 10,000 transactions between both fisheries each year while also providing 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 (elver only) and the overall quota (elver only). For the 2017 – 2018 sea urchin season the MEDMR was able to utilize eDR mobile to allow for harvesters to pick which days they fished based off a pre-determined calendar of fishing days. It was the hope to make this fishery safer for all involved by allowing harvesters to stay home on bad weather days.

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 monthly. 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 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 month. 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	X	X	X	X	X	X	X	X
7. Report metadata to ACCSP												X
8. Semi-annual reports							X					X
9. Annual reports												X

Project Accomplishments Measurement:

*2017 and 2018 data are incomplete at the time of proposal submission

Goal	Measurement	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017*	2018*	
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 through 6/1/14	-	-	-	-					
Enforce Dealer Compliance	Number of compliance calls to delinquent dealers	-	-	-	-	166	297	259	451	523	420	269	208	45	37	103	
Enforce Dealer Compliance	Number of suspension letters to delinquent dealers	-	-	-	-	-	-	-	-	-	-	407	567	177	876	108	
Enforce Dealer Compliance	Number of dealers suspended for failing to report timely	-	-	-	-	-	-	-	-	-	-	27	57	38	32	18	
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	480,910	493,291	468,897	471,667	487,323	404,750	19,179	
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	83,942	67,798	66,589	62,329	6,880	
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	371,185	391,169	381,401	401,508	418,846	382,674	57,665	
Encourage Electronic Reporting	Number of dealers submitting positive reports in SAFIS	69	78	98	142	204	229	274	291	312	328	342	330	339	328	240	
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	bi-monthly	once every 6 months	once every 6 months	once every 6 months	monthly					
Outreach	Number of custom data requests	-	11	95	155	204	269	275	281	302	419	434	569	806	720	377	

Cost Summary: FY19 Managing Mandatory Dealer Reporting in Maine				
10/1/2019 - 9/30/2020				
Personnel ^A		Description		Cost
1	Specialist I (Eileen Greenleaf)	full time position for 12 months		\$44,893
1	Office Associate I (Susan Kelley)	full time position for 12 months		\$39,007
			Subtotal	\$83,900
Fringe Benefits ^A				
1	Specialist I (Eileen Greenleaf)	Includes health, dental, workers comp, FICA, life insurance and retirement		\$28,282
1	Office Associate I (Susan Kelley)	Includes health, dental, workers comp, FICA, life insurance and retirement		\$27,957
			Subtotal	\$56,239
			Total Personnel	\$140,139
Travel				
1	seasonal vehicle ^B	1 car * \$188.67/mo * 12 mo		\$2,264
	Mileage fee	1 car * 1,000 mi per mo * \$.1533/mi * 12 mo		\$1,840
	Toll allowance	Estimated		\$100
5	Overnight stays ^C	5* \$150/night		\$750
	Per diem (includes extended days)	(5 overnights + 5 extended days) * \$65/day		\$650
			Total Travel	\$5,604
Supplies				
	Filing Supplies	folders, folder labels, year labels		\$500
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	(\$0.48*1200 compliance letters)+(\$6.47*200 certified letters to delinquent dealers)		\$1,870
	Telecommunication charges ^D	4 phones * \$55/mo * 12 mo		\$2,640
			Total Supplies	\$8,635
Contractual				
	Trip Ticket 1 yr maintenance (Software support and upgrades)	\$850/mo fee * 12 mo		\$10,200
			Total Contractual	\$10,200
			Subtotal	\$24,439
Total Direct Costs				\$164,578
Indirect Costs (30%)				\$49,373
Total Award to DMR				\$213,951

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.

Partner Contribution For ACCSP Purposes

Scientist IV (15% time)	\$17,699
Scientist III (50% time)	\$50,327
Scientist II (50% time)	\$55,810
Specialist II (75% time)	\$57,635
Office Associate I (15% time)	\$11,363
Office Associate II (100%)	\$76,133
Elver Mobile Swipe Card Project	\$19,300

\$288,267

Budget Narrative for FY2019 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. The increase in Personal and Fringe benefits reflects one of these staff members decision to collect the State of Maine medical and dental benefits whereas the previous employee in the position elected not to take these benefits.

Travel: The Specialists are the employees who will be travelling. The travel is for visiting dealers to install reporting software, training dealer staff how to electronically report or troubleshooting reporting problems. Staff provide dealers with one-on-one training on these reporting systems and help 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 to submit their landings information.

The monthly fee for the 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 Nissan Rogue SUV 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. The rates were calculated through the GSA website for posted rates.

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. 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 30%. See Attachment 3 for the Negotiated Indirect Cost Agreement.

Cost Summary: FY18 Managing Mandatory Dealer Reporting in Maine				
10/1/2018 - 9/30/2019				
Personnel ^A		Description	Cost	
1 Specialist I (Eileen Greenleaf)		full time position for 12 months	\$42,795	
1 Office Associate I (Susan Kelley)		full time position for 12 months	\$35,383	
			Subtotal	\$78,178
Fringe Benefits ^A				
1 Specialist I (Eileen Greenleaf)		Includes health, dental, workers comp, FICA, life insurance and retirement	\$27,515	
1 Office Associate I (Susan Kelley)		Includes health, dental, workers comp, FICA, life insurance and retirement	\$23,656	
			Subtotal	\$51,171
			Total Personnel	\$129,349
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	\$74	
5 Overnight stays ^C		5* \$100/night	\$500	
Per diem (includes extended days)		(5 overnights + 5 extended days) * \$50/day	\$500	
			Total Travel	\$3,818
Supplies				
Filing Supplies		folders, folder labels, year labels	\$500	
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*1200 compliance letters)+(5.75*200 certified letters to delinquent dealers)	\$1,726	
Telecommunication charges ^D		4 phones * \$55/mo * 12 mo	\$2,640	
			Total Supplies	\$8,491
Contractual				
Trip Ticket 1 yr maintenance		\$600/mo fee * 12 mo	\$7,200	
(Software support and upgrades)			Total Contractual	\$7,200
			Subtotal	\$19,509
Total Direct Costs			\$148,858	
Indirect Costs (30%)			\$44,657	
Total Award to DMR			\$193,516	

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.

Partner Contribution – For ACCSP Purposes

Scientist IV (15% time)	\$15,975
Scientist III (50% time)	\$45,971
Scientist II (50% time)	\$51,397
Specialist II (75% time)	\$60,558
Office Associate I (15% time)	\$10,768
Office Associate II (100%)	\$76,148
Elver Mobile Swipe Card Project	\$12,000

Total **\$272,816**

Budget Narrative for FY2018 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. The increase in Personal and Fringe benefits reflects one of these staff members decision to collect the State of Maine medical and dental benefits whereas the previous employee in the position elected not to take these benefits.

Travel: The Specialists are the employees who will be travelling. The travel is for visiting dealers to install 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 to submit their landings information.

The monthly fee for the 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. 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 30%. See Attachment 3 for the Negotiated Indirect Cost Agreement.

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 to install 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 to submit their landings information.

The monthly fee for the 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 to install 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 to submit their landings information.

The monthly fee for the 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
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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 to install 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 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.

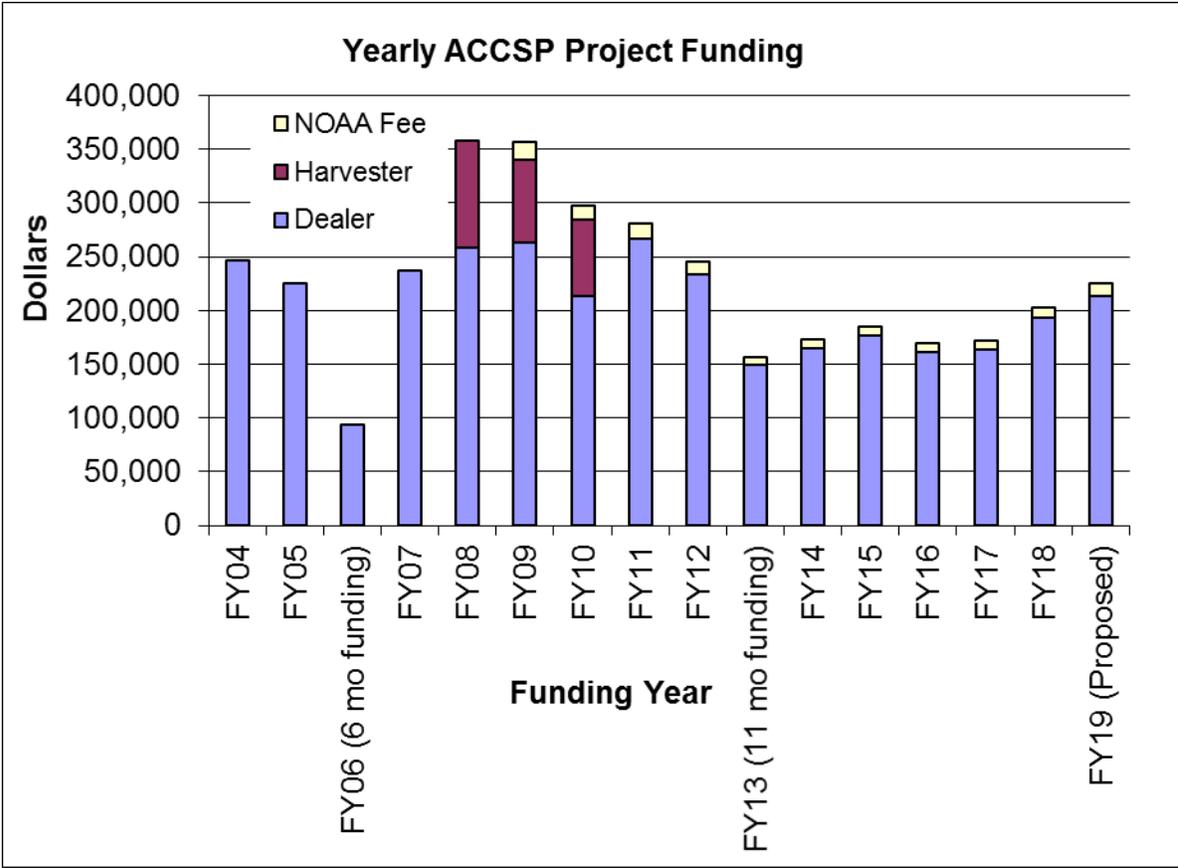
Other: Cell phones for the Specialists and the Scientists are necessary for communication and safety when on travel to dealer locations. The Scientist positions are not mentioned in the personnel costs because the positions are paid for with state money (not grant money), although staff members travel 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-06	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-07	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-07	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	8-Oct	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	9-Oct	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	10-Nov	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	11-Nov	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	12-Nov	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	13-Nov	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	14-Oct	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	FY16- 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.
2017	FY17- Managing Mandatory Dealer Reporting in Maine	161,001		Oct 2016 – Sep 2017	Complete 10 th year of mandatory dealer reporting; enter, audit and transmit data to ACCSP. Enforce timely reporting with license suspension and continue swipe card reporting for sea urchin and elver dealers.
2018	FY18- Managing Mandatory Dealer Reporting in Maine	193,516		Oct 2017 – Sep 2018	Complete 11 th year of mandatory dealer reporting; enter, audit and transmit data to ACCSP. Enforce timely reporting with license suspension and continue swipe card reporting for sea urchin and elver 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

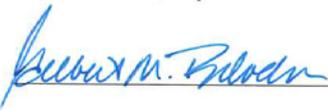
CERTIFICATE OF INDIRECT COSTS

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:

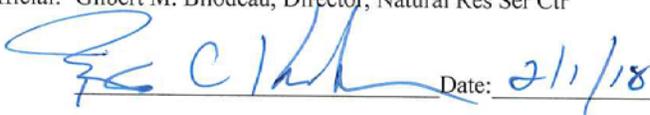
- (1) All costs included in this proposal dated January 29, 2018 to establish indirect cost billing rates for July 1, 2017 through June 30, 2018 are allowable in accordance with the requirements of the federal awards to which they apply and 2 CFR Part 200, "Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards". 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 36.95%, 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, 2016 thru June 30, 2017 to obtain a federal indirect cost billing rate for fiscal year beginning July 1, 2017.

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: 2.1.18

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

Dept Head Signature:  Date: 2/1/18

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: 5/23/2018

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 2018 ending June 30, 2018. The indirect cost rate proposal is 36.95%. I am authorizing the use of the lesser rate of 30%* to be used during this period.

Department of Commerce
Managing Mandatory Dealer Reporting in Maine
Oct 1, 2019 – Sept 30, 2020

A handwritten signature in blue ink, appearing to read "PK", is written over a horizontal line.

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.

Data Delivery Plan (2 Points): All electronic data are submitted into SAFIS on a daily basis. All data reported on paper reports are entered into MEDMR's MARVIN database and will be sent to the ACCSP Data Warehouse on at least a bi-annual basis after all data have been thoroughly audited.

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 starting with the 2014 season and in 2015 started requiring dealer to dealer transactions. In 2016 MEDMR required sea urchin dealers to report through swipe cards, which improved timeliness and data quality.

Potential secondary module as a by-product (in program priority order) (0-3 points): This project has led to the development of swipe card reporting which has proven to be a great data collection tool. This project helped develop eDR mobile which was used to successfully collect timely data and change how the MEDMR manages a fishery.

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

Merit (3 points): This proposal allows MEDMR to comply with mandatory ASMFC requirements. The MEDMR currently provides more data to the data warehouse than any other state and accounts for over 28% of all records landed in the Data Warehouse. MEDMR are always looking for ways to collect data in a timely and efficient manner.

Maintenance Project Special Ranking:

Achieved Goals (3 points): The MEDMR has always achieved the goals they have outlined in their proposals. Current goals for this grant cycle have been clearly outlined and how MEDMR intends to achieve have been discussed within this proposal.

Data Delivery Plan (2 Points): All electronic data are submitted into SAFIS on a daily basis. All data reported on paper reports are entered into MEDMR's MARVIN database and will be sent to the ACCSP Data Warehouse on at least a bi-annual basis after all data have been thoroughly audited.

Level of Funding (-1): The MEDMR are asking for more than in previous years because of staffing costs (contractually obligated raises and benefit increases), indirect cost increases and other items increase in cost. With these cost increase, the MEDMR still has a larger in-kind contribution than what is being asked for in this grant proposal.

Properly Prepared (1 Points): MEDMR followed ACCSP guidelines and pertinent documents when preparing this proposal.

Merit (3 points): This proposal allows MEDMR to comply with mandatory ASMFC requirements. The MEDMR currently provides more data to the data warehouse than any other state and accounts for over 28% of all records landed in the Data Warehouse. MEDMR are always looking for ways to collect data in a timely and efficient manner.

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

June, 2018

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

June, 2018

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.

Erin L. Summers
Maine Department of Marine Resources
(207) 633-9556
erin.l.summers@maine.gov

June, 2018

Profile:

- Work collaboratively with state, federal, academic, conservation, and industry partners to reduce whale entanglements and mortality in marine mammals and sea turtles through bodies such as the Atlantic Large Whale Take Reduction team and Atlantic Large Whale Disentanglement Network.
- Build research programs to provide baseline data on large whale life history, ecology, and habitat use in Maine's coastal rocky bottom habitats. Design new and emerging methodologies to inform management decisions.
- Oversee research and monitoring programs within the Division of Biological Monitoring at DMR, including the lobster programs, surveys for scallops, sea urchin, shrimp, and herring, recreational fisheries program, inshore trawl survey, and the landings and reporting group.
- Represent the Department of Marine Resources in stakeholder meetings, including those for wind energy permitting, Natural Resource Damage Assessments, department wide research and priority setting, etc.
- Member of the Atlantic Scientific Review Group advising NOAA Fisheries on marine mammal stock assessments

Education:

MA Biology: Boston University Marine Program Woods Hole, Ma. 5/02
BA Biology, Spanish minor: Truman State University Kirksville, Mo. 5/00

Employment:

Jan 2017 – present: **Marine Resource Scientist IV**
 Maine Department of Marine Resources
 West Boothbay Harbor, Me

- Oversee Division of Biological Monitoring, including Commercial Landings Program, Benthic group (lobster, scallops, urchins), and Pelagics group (herring, groundfish, shrimp, and recreational fishing)
- Lead Scientist for DMR's Large Whale Conservation Program
- Member of the Atlantic Large Whale Take Reduction Team

Feb 2006 – Jan 2017: **Marine Resource Scientist II**
 Maine Department of Marine Resources

- Lead scientist for DMR's Large Whale Conservation Program
- Secured grant funding, wrote reports, tracked budgets to support research projects
- Completed projects to support management decisions for the Atlantic Large Whale Take Reduction Plan, including tagging humpback whales, right whale habitat surveys, passive acoustic surveys, gear density surveys, testing alternative fishing gear, characterizing fishing practices, etc.

- Oil Spill Response Coordinator
- Assist with GIS coordination

Jan 2010 – May 2010: **Adjunct Faculty**
Unity College
Unity, Me

- Taught upper level course in the biology of Marine Mammals

Feb 2004 – Feb 2006: **Marine Mammal Research Specialist**
University of New England
Biddeford, Me

- Lead Research technician on project to track and predict right whale habitat use and distribution
- Analysis of remotely sensed data and right whale sightings in the Bay of Fundy Critical Habitat
- Assisted with report writing and budget tracking
- Completed project and published paper analyzing right baleen using stable isotope analysis
- Completed project and published papers satellite tagging and tracking baskings sharks off the coast of New England

Sept 2002 – Feb 2004: **Research Technician**
Cetacean and Sea Turtle Team, NOAA Fisheries Service
Beaufort, NC

- Lead technician tracking and analyzing movements of satellite tagged dolphins
- Perform field work including fishing gear and dolphin aerial surveys, boat based dolphin biopsy and photo-identification surveys, satellite tagging dolphins, responding to strandings, etc.
- Participate in necropsies as needed

Oct 2000 – June 2002: **Laboratory Technician**
Marine Biological Laboratories
Woods Hole, Ma

- Manage daily operations of the laboratory of marine veterinarian, Roxanna Smolowitz
- Run experiments and document methodologies and results
- Prepare media, samples, histology slides, and other lab bench work



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

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

August 13, 2018

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 2018. 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 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.

Dr. Matthew Cieri and Erin Summers

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: \$25,454.

Submitted by:

Dr. Matthew. Cieri
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Erin L. Summers
Maine Department of Marine Resources
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Erin.L.Summers@maine.gov
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Portside Commercial Catch Sampling and Comparative Bycatch Sampling for Atlantic Herring, Atlantic Mackerel and Atlantic Menhaden fisheries

Questions

- p.6 - When is the final FY16 completion report due? Will more information/final analyses be available to include in updated proposal?
- This proposal has been changed to a 5-year cycle with Grants online. The authors agree that this is likely to long to wait for initial results, and so a report has been appended (Attachment 7)
- Will the likely significant changes in the Atlantic herring quotas have an impact on the sampling scheme/schedule of this proposal given the potential shifts and changes in the fishery?
- Currently it is not known how the NEFMC or ASMFC will respond to the most recent assessment. Sampling is based on the number of trips by gear, area, and month. While it is likely that there will be a reduction in the amount of catch, and thus trips, we currently do not know how the fleet will respond. Further while herring landings may decline, menhaden sampling is expected to continue or increase during the period.

Recommendations

- Proposal states none of the species involved in study has been declared overfished and as of June 2018; however, the Atlantic mackerel benchmark assessment indicates the stock is overfished and overfishing is occurring.
- Corrected
- Given the low catches of Atlantic mackerel recently, not sure if this fishery is one of the top three commercial volume fisheries on the east coast as mentioned in proposal.
- Corrected
- p.5 – Additional justification for the continued collection of Atlantic mackerel samples could include the recently approved age-structured mackerel stock assessment; Mid-Atlantic SSC noted/recommended the continued collection of biological and bycatch samples; rebuilding plan now in place and greater need to continue bio sampling programs in order to track rebuilding progress.
- Justification added
- p.9 - 10: NMFS NEFMC at bottom of page 9 should be changed to NMFS NEFSC. Also it seems like coordination with NJDFW would be listed agency.
- Corrected

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 2018. The overall cost is slightly lower than the FY18 final award amount anticipated savings in supplies.

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, as of June 2018, **with the exception of mackerel**. 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 2017 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 largest commercial fisheries on the east coast in terms of volume. Atlantic herring landings in 2016 (the last year that NMFS data was available) were reported at approximately 65,000 mt with an estimated value in excess of \$37 million. In addition to the direct economic contribution of herring landings, this fishery supports a domestic value-added industry worth

approximately \$65 million and the North Atlantic lobster fishery estimated at over \$500 million. Atlantic mackerel landings in 2016 were reported at approximately 5,300 mt with an estimated value in excess of \$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 \$20 million. The Atlantic menhaden 2016 catch was ~180,000 mt valued at ~\$50 million. Generally 25-30% of all menhaden are landed for bait

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.

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. Further mackerel has transitioned to a new age-structured assessment, further increasing the importance of fishery dependent sampling for this stock. Like Atlantic herring, fleet behavior may change markedly, as a result of bycatch quotas recently implemented for River herring. 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.

Recently (since 2016) Atlantic menhaden have been increasing in numbers in Maine state waters. As a result of this, and a lack of herring being landed from Georges Bank, Maine landings have increased for this important baitfish. Because of this, Maine has increased its biological sampling program for this species to both fulfill ASMFC sampling objectives and to provide valuable fishery dependent data for the stock assessment.

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 MEDMR port sampling procedure measured bycatch using a "lot" (~40,000 lbs) approach. Lot sampling involves looking intensively at a portion of a vessel's landings, and then extrapolating those results to the entire offload. This sort of sampling contrasts that done by NMFS and MADMF, which takes regularly spaced basket subsamples during pumping.

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 revealed that “lot” sampling, as MEDMR had been conducting it, was not useful when comparing the portside and at-sea programs. 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.

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 in 2011 and instead now use a protocol similar to DMF and NMFS.

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 FY2016 completion report, 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>)

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 of Atlantic herring, Atlantic mackerel, or Atlantic menhaden. There are also limited resources to perform Atlantic herring, Atlantic mackerel, or Atlantic menhaden bycatch studies. The catch at age analysis for all three species 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. Even more recently, Maine landings have risen sharply as the stock has entered state of Maine waters. 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. Given this in 2018 NMFS has started the process of incorporating Maine DMR and MA DMF portside sampling into the quota monitoring system for Haddock and river herring bycatch quotas.

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 2017 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.

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 per 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, particularly Maine, when compared to previous years. This trend is expected to continue for the next several years. 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 NEFSC in Woods Hole, NMFS, Beaufort, NC, NJ, 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 were 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 2019 Budget & Narrative

FY2019 Budget (State FY21)
7/1/19 - 6/30/20

Cost Summary: Portside bycatch sampling

Personnel Services

No Personnel Services

Description

ACCSP

All Other

Travel Expenses

PROJECT VEHICLE 12 months	\$295/mo	\$ 3,600.00
Mileage fee	31000 @ \$.21/mi	\$ 6,510.00
Toll allowance		\$ 150.00
35 Overnight stays	\$102/night	\$ 3,570.00
Per diem (includes extended days)	\$50/day	\$ 2,750.00
		\$ 16,580.00

Office Supplies & Minor Equipment

2 Cell Phones	2 @ \$50/month	\$ 1,200.00
1 air card	1 @ \$75/month	\$ 900.00
Sampling Gear		\$ 500.00
Lab Supplies		\$ 400.00
		\$ 3,000.00

Total Direct Costs	\$ 19,580.00
Indirect Costs (30%)	\$ 5,874.00
Award to DMR	\$ 25,454.00

Partner Contribution – For ACCSP Purposes

Scientist IV (10% time)	\$10,000
Scientist III (25% time)	\$15,000
Specialist II 100% time)	\$84,000
Specialist I (25%)	\$12,000
Total	\$121,000

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 19 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 requested 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 30%. See Attachment 6 for the Negotiated Indirect Cost Agreement. Note this is a 5% increase from FY2017

Attachment 1: FY 2018 Budget & Narrative

As proposed

**FY2018 Budget (State FY20)
7/1/18 - 6/30/19**

Cost Summary: Portside bycatch sampling

<u>Personnel Services</u>	Description	ACCSP
No Personnel Services		
 <u>All Other</u>		
Travel Expenses		
PROJECT VEHICLE 12 months	\$295/mo	\$ 3,600.00
Mileage fee	31000 @ \$.21/mi	\$ 6,510.00
Toll allowance		\$ 150.00
35 Overnight stays	\$102/night	\$ 3,570.00
Per diem (includes extended days)	\$50/day	\$ 2,750.00
		\$ 16,580.00
 Office Supplies & Minor Equipment		
2 Cell Phones	2 @ \$50/month	\$ 1,200.00
1 air card	1 @ \$75/month	\$ 900.00
Sampling Gear		\$ 800.00
Lab Supplies		\$ 500.00
		\$ 3,400.00
Total Direct Costs		\$ 19,980.00
Indirect Costs (30%)		\$ 5,994.00
Award to DMR		\$ 25,974.00

Partner Contribution – For ACCSP Purposes

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

Budget Narrative: 2018

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

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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 30%. See Attachment 6 for the Negotiated Indirect Cost Agreement. Note this is a 5% increase from FY2017

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 menhaden and mackerel catch sampling	herring and mackerel portside bycatch and commercial catch sampling and bycatch at 5% level
2010	Portside bycatch sampling and	\$84,451	portside bycatch survey	

	commercial catch sampling of the Atlantic herring, Atlantic mackerel, and Atlantic menhaden fisheries		herring menhaden and mackerel catch sampling	herring menhaden 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 menhaden and mackerel catch sampling	herring menhaden 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 menhaden 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 menhaden and mackerel catch sampling	herring menhaden 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 menhaden and mackerel catch sampling	herring menhaden 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 menhaden and mackerel catch sampling	herring menhaden 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 menhaden and mackerel catch sampling	herring menhaden and mackerel portside bycatch and commercial catch sampling and bycatch at 5% level. Final analysis Ongoing
2017	Portside commercial catch sampling and bycatch sampling for Atlantic herring (<i>Clupea harengus</i>), Atlantic mackerel (<i>Scomber scombrus</i>), and Atlantic Menhaden (<i>Brevoortia tyrannus</i>) fisheries	\$24,975	portside bycatch survey herring menhaden and mackerel catch sampling	Ongoing
2018	Portside commercial catch sampling and bycatch sampling for Atlantic herring (<i>Clupea harengus</i>), Atlantic mackerel (<i>Scomber scombrus</i>), and Atlantic Menhaden (<i>Brevoortia tyrannus</i>) fisheries	\$25,974	portside bycatch survey herring menhaden and mackerel catch sampling	Not yet started

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 (4 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: FY2017 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, 2017 – December 31, 2017

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 15, 2018

Project Background

The Atlantic herring (*Clupea harengus*) (Linnaeus, 1758) is one of the most biologically and economically important species in the Northwest Atlantic. With an estimated biomass of one million metric tons, Atlantic herring (hereinafter “herring”) are an important food source for many species of fish, mammals, and seabirds, and therefore play a crucial trophic role as a forage fish (Power and Iles, 2001; TRAC, 2009).

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. 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 across the entire range of the fishery (Overholtz, 2002). Commercial landings are currently around 70,000 metric tons annually with 90 percent supporting the lobster (*Homarus americanus*) bait market. Herring is the primary bait of the approximately \$600 million per year New England lobster industry (National Marine Fisheries Service, 2016).

The Maine Department of Marine Resources (DMR) has collected and processed herring commercial catch samples since 1960. Sampling was historically carried out with the cooperation of processors 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. Therefore, DMR secured funding to hire a dedicated sampler 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 herring fishery in 2004. This project was created in response to the lack of bycatch data available for the directed herring fishery. Moreover, in 2004, NMFS received funding to expand the at-sea observer coverage of the herring fishery. Interestingly, 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 via our co-occurring trip analysis.

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 the 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 Maine, sites are in Jonesport, Prospect Harbor, Rockland, Phippsburg, and Portland, in Massachusetts, sites are in Gloucester, New Bedford, and Fall River, in Rhode Island, two sites are in Point Judith, and in New Jersey, one site is in Cape May.

Due to the mandate of river herring bycatch quotas within the herring fishery via the New England Fishery Management Council (NEFMC), an analysis and comparison between overlapping trips from the at-sea Northeast Fisheries Observer Program (NEFOP) and portside observed trips (co-occurring trips) was added in 2012, looking exclusively for significance of the presence of river herring and to a minor extent haddock. This test and comparison was also useful to examine methodologies between the two programs and addressing which methods could be aligned to better document bycatch of many species. As of January 2017, the co-occurring analysis is complete, and therefore no longer part of this project. Now, the goal is to focus on sampling unobserved trips to increase the bycatch sampling coverage across all three of the fisheries within this project.

Objectives

1. Continuation of the portside bycatch survey
 - a. Expand the coverage of landed herring, mackerel, and menhaden monitored for bycatch.
 - b. Increase the number of unobserved at-sea sampling offloads.
2. Continuation of commercial catch sampling and species collection 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 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 collection of catch amount, gear type, NMFS Statistical Area, date of capture, presence/absence of an observer, and the VTR number.

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 this progress report all non-targeted species (i.e. any species, 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.

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), gender, 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.

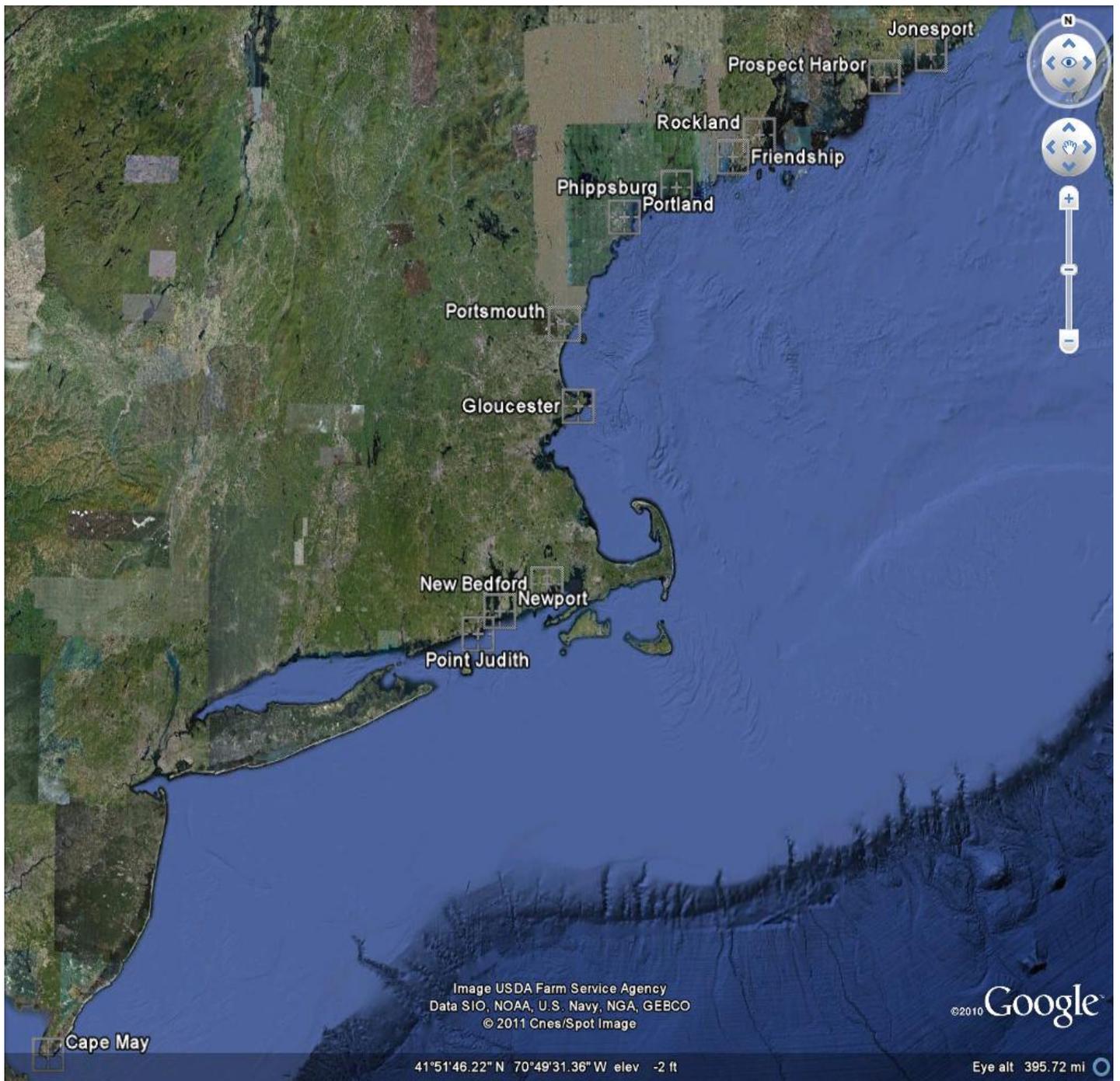


Figure 1: Range and locations of sampling and portside bycatch studies.

Results

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

Atlantic herring

Nine portside bycatch studies were conducted on US Atlantic herring landings from July 1, 2017–December 31, 2017. Six were conducted on purse seiners (PS), 2 on single mid-water trawlers (SMWT) and 1 on a pair mid-water trawler (PMWT) (Figure 2). For this period the US Atlantic herring fishery landings were approximately 31,464 t (NOAA Quota Monitoring Website 2018) and a total of 538 t of herring was sampled for bycatch, equating to 1.71% sampling coverage (Table 1a). The total weight of documented bycatch was 29 t. The total percent of documented bycatch was 5.39%. The overall mean percentage of bycatch per individual study was 6.88%, with a standard deviation of 11.87%, a minimum of 0.27% and a maximum 36.28% (Table 1b). Nine species of bycatch were documented (Table 2).

Four NMFS Statistical Areas were sampled for Atlantic herring bycatch for this timeframe. Area 539, off southern New England, contained the largest portion of bycatch, approximately 84.85% of the total documented bycatch. Area 512, off mid-coast Maine, contained the least, about 1.54% (Figures 3 and 5).

River herring (RH) a category of anadromous fish, containing both Alewife (*Alosa pseudoharengus*) and Blueback herring (*A. aestivalis*) made up the bulk of the documented bycatch, about 79.52% and 4.23% of the total sampled herring, up from 1.34% and 0.06%, respectively, for this time frame in 2016 (Table 2).

Atlantic mackerel (*Scomber scombrus*), made about 8.04% of the bycatch and about 0.43% of the sampled herring, down from 42% and 1.74%, for this time frame in 2016 (Table 2).

Silver hake (*Merluccius bilinearis*) accounted for approximately 4.81% of the documented bycatch, and about 0.26% of herring sampled, down from 7.45% and 0.31% in 2016 (Table 2).

American shad (*Alosa sapidissima*) accounted for approximately 3.68% of the total bycatch, and 0.20% of the herring sampled, up from 1.21% and 0.05% in 2016 (Table 2).

Atlantic menhaden (*Brevoortia tyrannus*) made up 3.39% of the bycatch composition and about 0.18% of the herring sampled, up from 1.07% and 0.04% in 2016 (Table 2).

The remaining three species that individually comprised less than 1.00% of the total bycatch were pooled together into a category called “All other species”, which combined, made up the remaining 0.56% of the total bycatch and about 0.03% of the entire sampled herring (Table 2).

Note that spatial information and all length frequencies for all species, other than squids, will be provided in this years annual report.

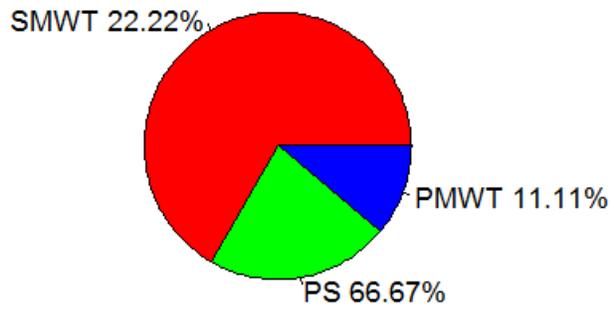


Figure 2. Percentage of herring bycatch studies by trip, per gear type, July 1, 2017–December 31, 2017.

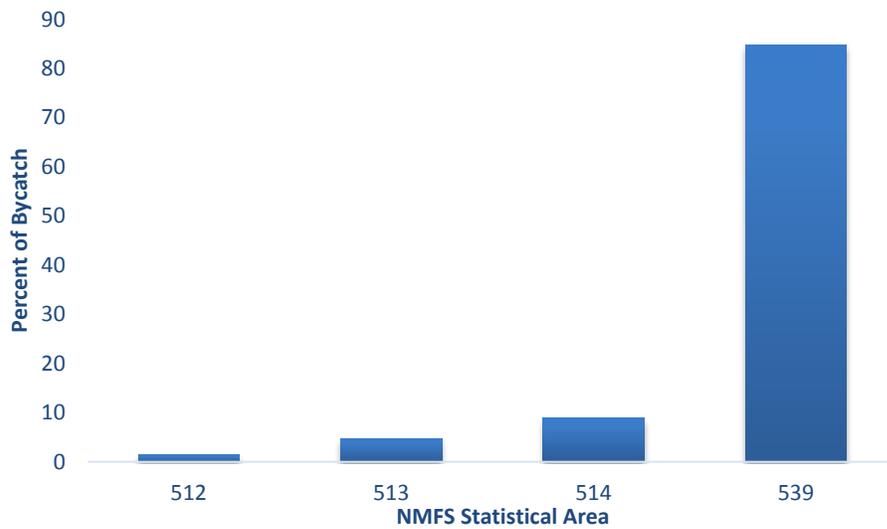


Figure 3. Percentage of bycatch by NMFS Statistical Area, July 1, 2017–, December 31, 2017.

Table 1. Atlantic herring bycatch data, July 1, 2017–December 31, 2017.

a. Bycatch Data by Total Landings and Total Sampled	
Total Landings (t)	31,464
Total Sampled (t)	538.28
% of Total Landings Studied	1.71
Total Bycatch (t)	29.00
% Bycatch in Total Sample	5.39
b. Bycatch Data per Sampling Event	
Mean % Bycatch	6.88
Maximum % Bycatch	36.28
Minimum % Bycatch	0.27
Standard Deviation	11.87

Table 2. Documented herring bycatch, including incidental species, July 1, 2017–December 31, 2017

Species	Total Weight (kg)	% Total Bycatch	% Bycatch in Herring
*River Herring	23,062.75	79.52	4.285
Atlantic Mackerel	2,331.35	8.04	0.433
Silver Hake	1,394.20	4.81	0.259
American Shad	1,068.32	3.68	0.198
Atlantic Menhaden	981.76	3.39	0.182
**All Other Species	162.93	0.56	0.03
Total	29,001.30	100.00	5.388

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

**A combination of species whose individual total bycatch was <1.00%.

Atlantic mackerel

The US Atlantic mackerel season is a winter fishery that usually starts in December and ends in late spring. It is important to note that over the past ten years US Atlantic mackerel landings have been significantly low (Fisheries of the U.S, NMFS, 2017). Thus, due to the time frame of this report and historically low mackerel landings, no mackerel bycatch studies were conducted.

Atlantic menhaden

Other than personal landings in Maine of Atlantic menhaden, state and federal landings stopped at the end of June, therefore, zero bycatch studies were conducted between July 1, 2017 and December 31, 2017.

Objective 1b: Increase the number of unobserved at-sea sampling offloads.

None of the herring bycatch studies during this time frame had an onboard observer, giving 100% unobserved portside bycatch studies and meeting this objective.

Objective 2: Commercial catch sampling of herring, mackerel and menhaden

Atlantic Herring Sampling

Fifty-six herring samples were collected from July 1, 2017 and December 31, 2017 from catches in the GOM, offshore on GB, and off southern New England. Approximately 75% of the herring samples were acquired from Maine ports, 12.50% from NH, 7.14% from RI, and 5.36% from MA (Figure 4). These samples were transported to DMR where they were processed for length, weight, age (using otoliths), gender, gonad stage/maturity, and stomach fullness.

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

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

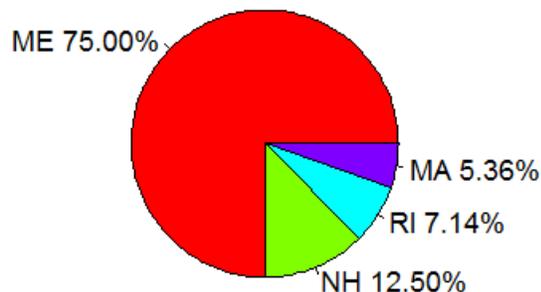


Figure 4. Percentage of herring samples collected by state, July 1, 2017–December 31, 2017.

Atlantic Mackerel Sampling

The DMR has sampled mackerel since 2005 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. Due to the extremely low amount of Atlantic mackerel landings in 2017 and for the time frame of this report, one sample was collected from a PMWT fishing in Area 521 (Figure 5).

Atlantic Menhaden Sampling

As requested by the NMFS office in Beaufort, NC, menhaden samples are to be collected when this species is landed in significant numbers within the GOM. During the time frame of this report, zero menhaden landings occurred (as mentioned above in the menhaden bycatch section), thus no samples were collected.

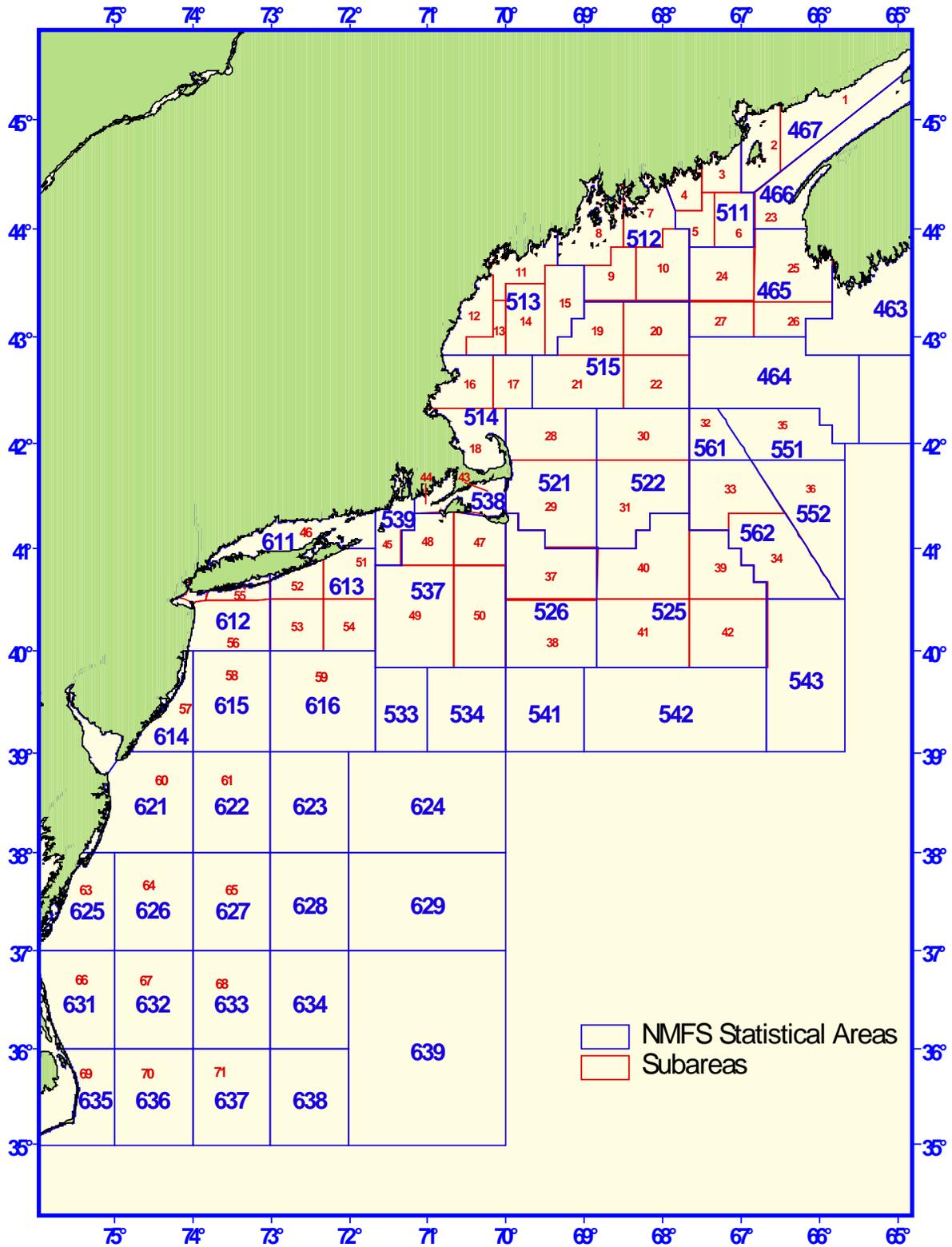


Figure 5. NMFS Statistical Areas.

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, and minor levels of bycatch in the Atlantic mackerel and menhaden fisheries 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 fisheries. However, the species encountered as bycatch varied spatially by NMFS Statistical Area, and conclusions drawn from this regarding the spatial nature of the bycatch encountered should be interpreted cautiously due to the small sample size. It is important to remember that bycatch in these fisheries can be episodic, and can be isolated to one fishing event in one specific spatial location.

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 these 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 change in approach and the results of the co-occurring trip analyses have revealed that aligning portside data between Maine DMR, Massachusetts DMF, and NEFOP, leads to statistically more sound bycatch estimates and an increase in coverage of the herring fishery. These efforts will continue to complement and supplement, but not replace the NEFOP at-sea observer coverage. Furthermore, this bycatch survey continues to offer 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 herring stock assessment in June of 2011, the most recent update during 2015, and the upcoming benchmark assessment in 2018. Moreover, the Atlantic herring samples used for the catch-at-age matrix helped to determine spawning stock biomass, the 2014 and 2015 area fishing quotas, and spawn closure management changes in 2016. 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 2016/2017 herring fishery. As of Sept 2015, data from both MA DMF and ME DMR portside bycatch sampling were used in the ongoing specifications for herring for 2016-2018.

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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.

TRAC. 2009. Gulf of Maine-Georges Bank Herring Stock complex,

Instructions for Sampling Atlantic Menhaden from the Maine Bait Fisheries

Acquiring the 'Sample'

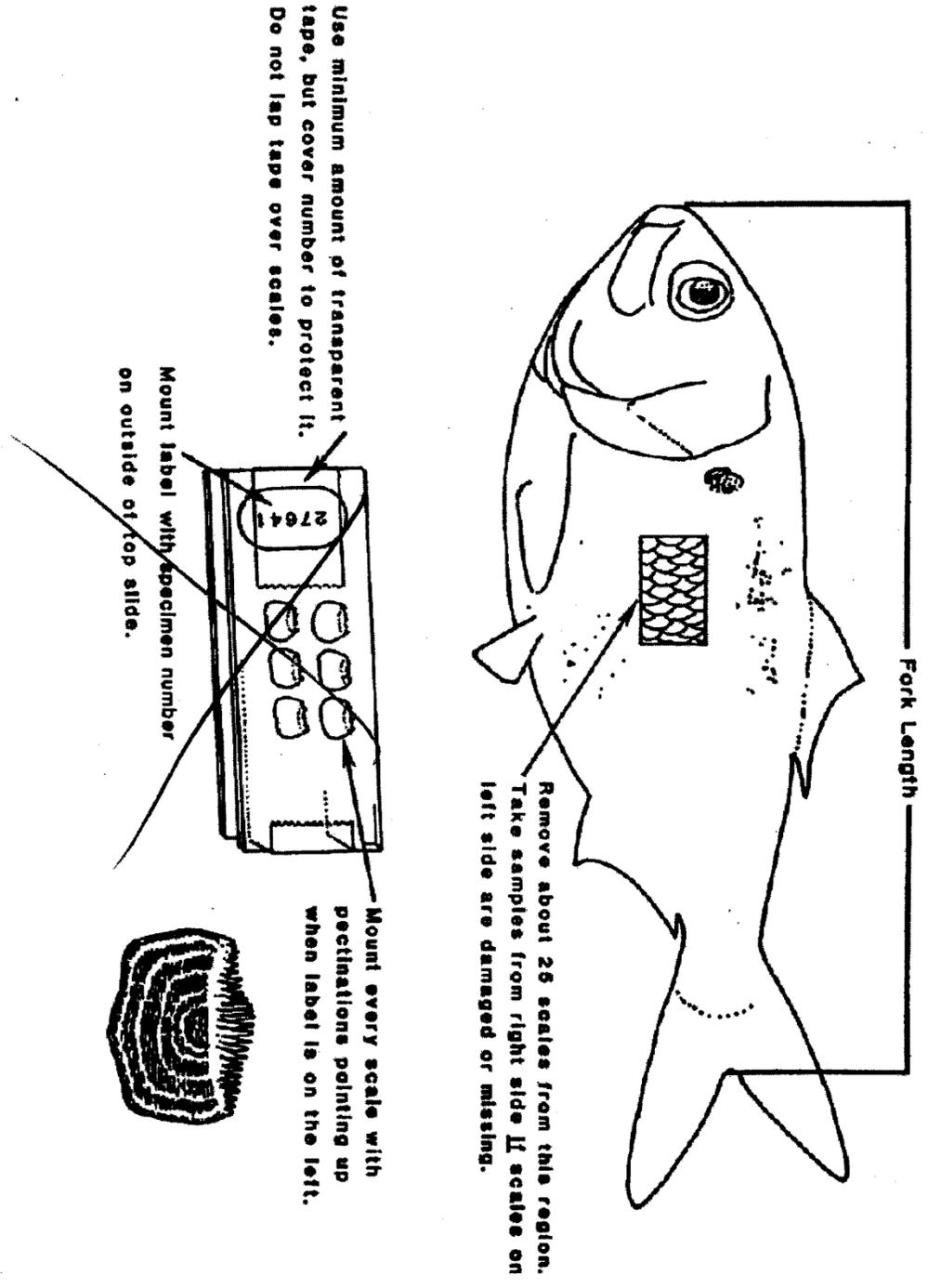
- Ideally, scoop a bucket of menhaden at random from the top of the fish hold.
- If the menhaden have already been packed out in flats or fish boxes, take 15-20 fish at random from the container.
- If available, record date of capture, location of capture, and vessel name. Usually we write this info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

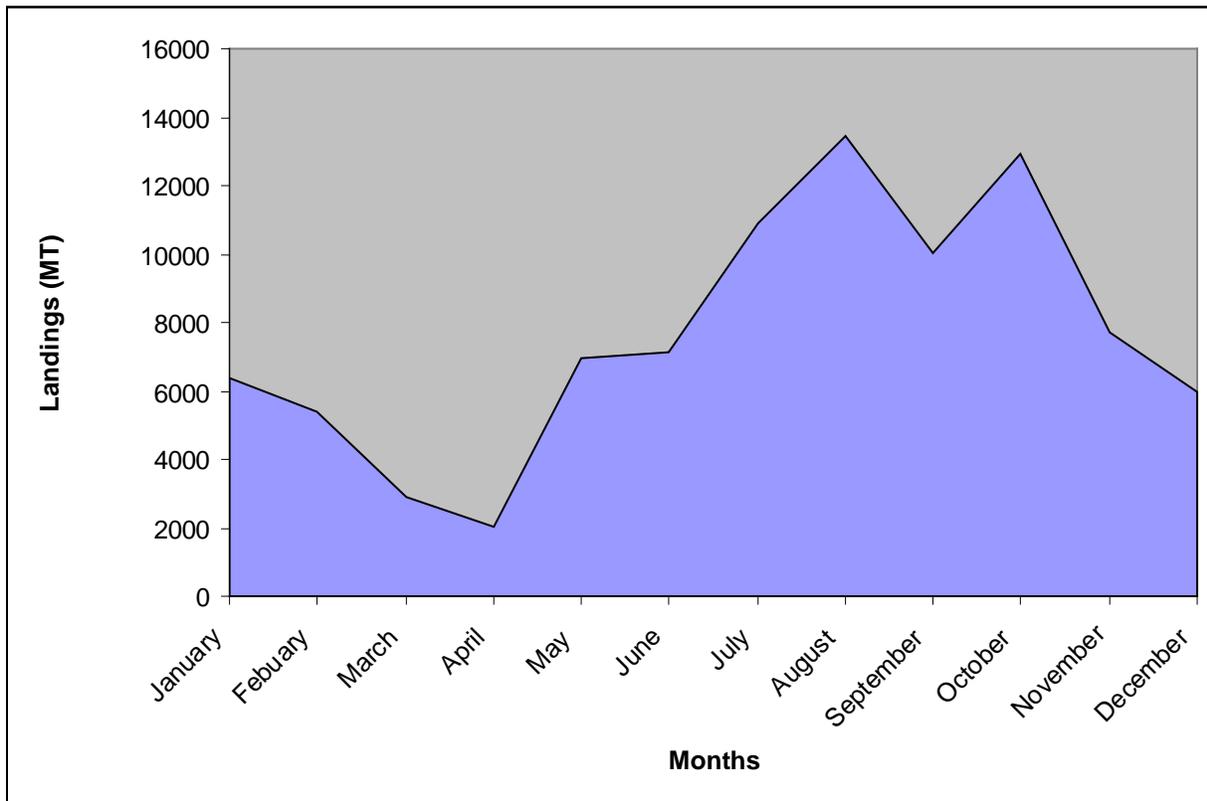


Figure 1: Five year average (2004-2008) of monthly herring landings

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

Attachment 7:

**Atlantic Coastal Cooperative Statistics Program
Grant No. NA13NMF4740203
(DMR#4077)**

Comparative Analysis of Two Bycatch Programs within the U.S. Atlantic Herring (*Clupea harengus*) Fishery

Supplementary Report

Submitted by:

**James Becker
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2/10/2017

Introduction

Bycatch estimates in the U.S. Atlantic herring fishery are primarily calculated by an at-sea sampling program conducted within the National Marine Fisheries Service (NMFS) by the Northeast Fisheries Observer Program (NEFOP). However, in recent years due to high costs and lack of appropriate funds, NEFOP decreased its overall coverage, leaving a larger portion of herring trips unobserved (NMFS, 2015). Moreover, in 2005 the Maine Department of Marine Resources (ME DMR) began a portside bycatch program of the herring fishery that offered the ability to estimate bycatch at a safer and cheaper cost, allowing access to high volume offloads without placing observers at-sea. However, unlike NEFOP, the portside program has yet to be used for bycatch quota estimation. This report attempts to validate the bycatch estimates derived between the at-sea and portside bycatch programs from co-occurring trips (trips that were sampled both at-sea and portside). If the methodologies and bycatch estimates are compatible, combined, both programs could offer increased sampled trips, and decrease the variability associated with the current low coverage.

To date, there are five species with bycatch caps within the U.S. Atlantic herring fishery. Bycatch caps for haddock (*Melanogrammus aeglefinus*) were mandated in 2006, and in 2014 for river herring and shad (RHS), a combination of alewife and blueback herring (*Alosa pseudoharengus* and *A. aestivalis*), and american and hickory shad (*Alosa sapidissima* and *A. mediocris*), respectively (NMFS, 2016). The bulk of the focus of this report is on river herring, but looks at other bycatch species as well. The past decade has shown an increasing concern for river herring bycatch within the U.S. Atlantic herring fishery, thus, minimizing and grasping the extent of this bycatch and assessing the status of the population have become paramount (NMFS, 2012).

Prior to the implementation of these bycatch quotas, NOAA conducted a series of workshops to gather more information on the status of river herring in the northwest Atlantic. In May of 2012, NOAA worked closely with the Atlantic States Marine Fisheries Commission (ASMFC) to use information contained in their river herring stock assessment and the best available information to determine whether these two species should be listed under the Endangered Species Act (ESA). Several areas where additional information was needed included stock structure, extinction risk, and the impact of climate change on these species (NOAA Fisheries Northeast Regional Office: Protected Resource Division, 2013).

Due to the growing concern of the health of the river herring population and its interactions with the Atlantic herring fishery, facilitation of bycatch quotas, and the potential for an ESA listing, lead to an analysis and comparison of co-occurring trips between at-sea observed and portside observed, looking for, but not limited to, the significance of bycatch estimates of river herring. These tests and comparisons were also useful for examining other bycatch species estimates, methodologies, and for addressing which methods could be tweaked to better estimate bycatch landings.

The objective of this report is to assess whether the portside and at-sea observer programs are compatible, and can estimate statistically sound and similar bycatch estimates within the US Atlantic herring fishery.

Methods

For the analysis and comparison of the co-occurring trips three methods were initially used, (for more detail, see the 2016 proposal for ACCSP Grant No. NA13NMF4740203). However, after accessing the data and the sampling protocol for the at-sea program, it became evident that Method 3 was the most statistically sound approach for determining significance between programs of bycatch estimates.

Typically at-sea sampling requires 10 bushel baskets to be systematically collected per haul (tow) per trip. Bycatch species are removed and weighed, and then the proportions of each species are multiplied by the estimate of each haul weight. The overall bycatch estimate per trip is the sum of each bycatch estimate per haul. Due to the variance associated with each individual haul, Method 3 offered the most viable approach for comparing bycatch estimates between co-occurring trips.

Portside sampling requires the collection of a bushel basket from the offload delivery system (dewatering box or pre-graded assembly line) every 5 minutes until the entire herring trip has been pumped from the vessel. Bycatch species are sorted and weighed from each basket, and the overall proportion is multiplied by the total haul weight of the catch.

Method 3, (Dean, 2011), 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, then conducting a modified two sample two tailed t-test to look for significance between both programs ($P < 0.05$). Since this particular method needed a customized significance test to compensate for the individual haul 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:

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

With

$$H_0 : w_1 - w_2 = 0$$

$$H_A : w_1 - w_2 \neq 0$$

Calculations for the pooled degrees of freedom for each at-sea trip were written as:

$$\text{Pooled At-sea DF} = (N_1 - 1) + (N_2 - 1) + (N_3 - 1) = (N_1 + N_2 + N_3) - g$$

Where N_i is the total haul weight divided by the average basket weight per haul, and g is the number of hauls per trip, in this case 3 (<https://www.isixsigma.com/topic/degree-of-freedom-pooled-estimate-of-variance/>).

Calculations for the degrees of freedom for each portside trip were written as:

$$\text{Portside } DF = N-1$$

Where N is the total trip haul weight divided by the average basket weight.

In both cases, N is estimated and scaled up to establish the number of possible baskets that could be taken from the entire catch.

For this analysis of co-occurring trips three universal criteria were used. The first was used if a specific bycatch species was absent in the sample baskets between both programs for the same trip. For example, if a certain trip lacked alewife in the sample baskets for the portside data and the at-sea data, then the results would state there was no significant difference between the two trips, noted as (-,-) or denoted a “zero” trip. 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”.

Results

To meet the necessary criteria for this type of analyses, i.e., a co-occurring trip that contained the presence of the same species both at-sea and portside, the filtering process mentioned above was implemented which limited and reduced the useable data. Thus, sixty one co-occurring trips were conducted, of which 38 were accessed for significance testing (Table 1 and 2). Currently seven trips were used for statistical comparisons, and within three of those specific trips analyses were conducted on more than one species. This resulted in 13 individual statistical analyses conducted to date. Eight out of the 13, or 62% of the analyses revealed that bycatch estimations between programs were not statistically different (Table 2).

Refer to Table 2 for the following results: Trip 16, a small mesh bottom trawler (SMBT) fishing in Block Island Sound (BIS), in Area 539, showed no significant difference between estimated Alewife (Ale) bycatch, yet showed significance between both blueback herring (BB) and the combination of the two, river herring (RH). Trip 17, a SMBT fishing in BIS, showed no significant difference between Alewife. Trip 18, a single mid-water trawler (SMWT) fishing on Georges Bank (GB) in Area 522, revealed a significant difference in haddock (Had) estimations. Trip 19, a SMWT on GB, did not show a significant difference in Had. Trip 20, a SMBT, showed no significant difference among Ale, BB, or combined as RH. Trip 21, a paired mid-water trawler (PMWT) fishing on GB, showed a significant difference with Had, and Ale, but not with mackerel (Macks). Trip 22, a PMWT fishing on GB, showed no significant difference with Had.

The scaled up bycatch estimates for w and $V(w)$ varied substantially. The highest w and $V(w)$ were found in trip 19, with the portside Had estimates around 25,928 lbs and 10,063,307, and the at-sea about 28,582lbs and 22,714,397, respectively. The lowest w and $V(w)$ portside were documented in trip 16, with the BB estimates about 98lbs and 1,920 respectively. However, the lowest w and $V(w)$ at-sea were

found within trip 21, with the Ale estimates around 59lbs and 3,184, respectively. Note that trip 21 contained zero Ale portside, or in this case a null value.

Table 1. Co-occurring trips that were not analyzed via a statistical test, including zero trips.

Trip	Year	Gear	Area	Spe	Signf	Criteria	Comments
1	2016	PS	513	Zero	No	(-,)	
2	2014	PS	512	Zero	No	(-,)	
3	2014	PS	513	Zero	No	(-,)	
4	2013	PS	513	Zero	No	(-,)	
5	2012	PMWT	521	Zero	No	(-,)	
6	2012	PMWT	522	Had	Yes	(+,)	At-sea observed Haddock outside of baskets
7	2012	PMWT	522	Had	No	(-,)	
8	2012	PS	513	Ale	Yes	(-,+)	Alewife were present in one At-sea basket, 0.2Lbs
9	2012	PS	513	Ale	Yes	(-,+)	
10	2012	PMWT	522	Ale	Yes	(+,)	Alewife were present in one Portside basket, 0.2lbs
11	2012	PMWT	539	BB	NA	(+,NK)	
12	2011	PS	511	Zero	No	(-,)	
13	2011	PMWT	522	Zero	No	(-,)	
14	2011	PS	513	Zero	No	(-,)	
15	2010	PMWT	515	Zero	No	(-,)	

Table 2. Co-occurring trips with statistical analyses of bycatch species estimations.

Trip	Year	Gear	Area	Hail Lbs	Spe	Prtsd Ws lbs	At-Sea Ws lbs	Prtsd Bskts	At-Sea Bskts	All hauls smpld	Prtsd V(Ws)	At-Sea V(Ws)	Signf	Tval	Tcrit
16	2016	SMBT	539	44,127	Ale	738	1,128	6	12	Yes	41,251	28,193	No	1.481	1.964
					BB	98	405				1,920	4,195	Yes	3.933	1.964
					RH	836	1,533				51,267	20,878	Yes	2.598	1.964
17	2013	SMBT	539	34,998	Ale	795	560	5	16	Yes	33,340	8,443	No	-1.147	1.964
18	2013	SMWT	522	79,996	Had	5,637	2,149	10	15	Yes	1,805,154	576,741	Yes	-2.260	1.962
19	2013	SMWT	561	520,011	Had	25,928	28,582	37	58	No	10,063,307	22,714,397	No	0.464	1.960
20	2013	SMBT	539	21,773	Ale	1,332	1,617	5	10	Yes	17,006	491,560	No	0.040	1.966
					BB	348	310				10,017	9,648	No	-0.275	1.966
					RH	1,681	1,927						No		1.966
21	2012	PMWT	522	469,908	Had	2,881	1,151	36	18	No	472,957	219,789	Yes	-2.078	1.960
					Ale	0	59				NA	3,484	Yes	NA	NA
					Mack	7,003	9,474				532,343	1,651,887	No	1.695	1.960
22	2011	PMWT	522	520,528	Had	110	246	26	22	Yes	11,972	590,226	No	0.176	1.960

Conclusion

Results suggest it is important to note the following when comparing co-occurring trips for significance among estimated bycatch: 1.) Achieving the established sampling protocol for both programs; sampling every haul at-sea, collecting ten baskets per haul, and maintaining sampling of the offload stream every 5 minutes for the entire offload for the portside program. 2.) The number of baskets collected per haul at-sea. For example, if fifty baskets were collected port side, and only twenty total at-sea for the same trip, a significantly different bycatch estimation between trips may result. 3.) Due to the small sample size, i.e. total weight of all baskets collected for either study compared to the overall trip hail weight, the estimated variance $V(Ws)$ can be extremely large.

4.) Discrepancies in identifying alewives versus blueback herring (river herring). 5.) Culling of large species at-sea, i.e. haddock may reveal a significant difference in estimated weight compared to portside data. 6.) At-sea observers putting their documented bycatch back in the hold versus overboard. 7.) Within-trip speciation, varying distributions per species, and multiple zeros of species per basket.

One co-occurring trip in particular brought to light some of the issues mentioned above (Table 2, Trip 21). A PMWT fishing on GB showed a significant difference in alewife estimations with only 0.2lbs documented at-sea (one individual fish) and zero reported portside. Once scaled up to the total catch, 59.03lbs was estimated at-sea, and 0.00lbs portside, deeming a significant difference (if following the methods of this analysis). Interestingly, the haddock estimations were smaller at-sea than portside, even though culling and removal of the larger fish at-sea after collecting the 10 required baskets for bycatch estimation could have revealed a larger amount of haddock. However, this may be due to the fact that not all the hauls were sampled at-sea, which potentially could underestimate the overall bycatch. Lastly, the estimations of mackerel were not significantly different. This within-trip speciation may be revealing varying distributions per species within the catch composition. Mackerel, one of the most common bycatch species (incidental catch) found in the Atlantic herring fishery (NEFOP, 2016), may sometimes be distributed normally within the catch, whereas other species of the catch composition may be in a delta-lognormal distribution and may be solely responsible for the many zeros documented per basket sample (Fletcher, 2008). Overall this trip represented an example of the limits of precision and detection of small amounts of bycatch, the difference in methodologies between programs, lack of achieving sampling protocol, and that significance can be species specific.

An important note to consider was the decision not to use any of the “zero” trips. Once these trips were removed from our analysis, the percent of trips that were significantly different increased to about 38%. This seemed the appropriate approach as that zero trips prevented the use of our customized t-test, and therefore couldn't be pooled with the trips that contained the relevant bycatch. If in the future the use of zero trips is incorporated, another approach could be some type of randomization test (Hooton, 1991).

Overall this study revealed that the bulk of the co-occurring trips analyzed were not statistically different, reinforced the legitimacy of portside sampling, and combined will help for both management and this industry. Incorporating the portside bycatch program will increase coverage, and should reduce the variance within bycatch quota monitoring found within large volume fisheries, especially if the areas of concern mentioned above are addressed. Overall this would reduce the cost to both the US Atlantic herring fishery and NEFOP, and increase bycatch monitoring for both the RHS and haddock bycatch caps and overall statistical power and effectiveness of bycatch estimation.

References

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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.

Erin L. Summers
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Profile:

- Work collaboratively with state, federal, academic, conservation, and industry partners to reduce whale entanglements and mortality in marine mammals and sea turtles through bodies such as the Atlantic Large Whale Take Reduction team and Atlantic Large Whale Disentanglement Network.
- Build research programs to provide baseline data on large whale life history, ecology, and habitat use in Maine's coastal rocky bottom habitats. Design new and emerging methodologies to inform management decisions.
- Oversee research and monitoring programs within the Division of Biological Monitoring at DMR, including the lobster programs, surveys for scallops, sea urchin, shrimp, and herring, recreational fisheries program, inshore trawl survey, and the landings and reporting group.
- Represent the Department of Marine Resources in stakeholder meetings, including those for wind energy permitting, Natural Resource Damage Assessments, department wide research and priority setting, etc.
- Member of the Atlantic Scientific Review Group advising NOAA Fisheries on marine mammal stock assessments

Education:

MA Biology: Boston University Marine Program	Woods Hole, Ma. 5/02
BA Biology, Spanish minor: Truman State University	Kirksville, Mo. 5/00

Employment:

Jan 2017 – present: Marine Resource Scientist IV
Maine Department of Marine Resources
West Boothbay Harbor, Me

- Oversee Division of Biological Monitoring, including Commercial Landings Program, Benthic group (lobster, scallops, urchins), and Pelagics group (herring, groundfish, shrimp, and recreational fishing)
- Lead Scientist for DMR's Large Whale Conservation Program
- Member of the Atlantic Large Whale Take Reduction Team

Feb 2006 – Jan 2017: Marine Resource Scientist II
Maine Department of Marine Resources

- Lead scientist for DMR's Large Whale Conservation Program
- Secured grant funding, wrote reports, tracked budgets to support research projects
- Completed projects to support management decisions for the Atlantic Large Whale Take Reduction Plan, including tagging humpback whales, right whale habitat surveys, passive acoustic surveys, gear density surveys, testing alternative fishing gear, characterizing fishing practices, etc.
- Oil Spill Response Coordinator
- Assist with GIS coordination

Jan 2010 – May 2010: Adjunct Faculty
Unity College
Unity, Me

- Taught upper level course in the biology of Marine Mammals

Feb 2004 – Feb 2006: Marine Mammal Research Specialist
University of New England
Biddeford, Me

- Lead Research technician on project to track and predict right whale habitat use and distribution
- Analysis of remotely sensed data and right whale sightings in the Bay of Fundy Critical Habitat
- Assisted with report writing and budget tracking
- Completed project and published paper analyzing right baleen using stable isotope analysis
- Completed project and published papers satellite tagging and tracking baskings sharks off the coast of New England

Sept 2002 – Feb 2004: Research Technician
Cetacean and Sea Turtle Team, NOAA Fisheries Service
Beaufort, NC

- Lead technician tracking and analyzing movements of satellite tagged dolphins
- Perform field work including fishing gear and dolphin aerial surveys, boat based dolphin biopsy and photo-identification surveys, satellite tagging dolphins, responding to strandings, etc.
- Participate in necropsies as needed

Oct 2000 – June 2002: Laboratory Technician
Marine Biological Laboratories
Woods Hole, Ma

- Manage daily operations of the laboratory of marine veterinarian, Roxanna Smolowitz
- Run experiments and document methodologies and results
- Prepare media, samples, histology slides, and other lab bench work

**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**

**FY19: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from
the State of Rhode Island**

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

Project Title: **FY19: Maintenance and Coordination of Fisheries
Dependent Data Feeds to ACCSP from the State of Rhode
Island**

Project Type: Maintenance

Requested Award Amount: \$76,920

Requested Award Period: FY 2019 (August 1, 2019 to July 31, 2020)

Primary Program Priority: Commercial and Recreational Catch and Effort Module

Date Submitted:

Project Supervisor: Scott Olszewski, Deputy Chief 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
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Seasonal Interns

**Atlantic Coastal Cooperative Statistics Program (ACCSP) Proposal
for the State of Rhode Island 2018**

Objectives:

- 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.
- 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 to electronic trip reporting.
- 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 Marine Fisheries (RIDMF) implemented the marine fisheries commercial data collection program. This program collects trip level landings data from all 140 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. 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. This data has been essential for the determination of commercial catch and effort statistics, establishing an efficient quota monitoring process, and tracking active versus latent license holders. Quota monitoring is one of the most important uses of SAFIS data, as staff analyze trip level commercial landings data for quota managed species in RI daily. These analyses are used to make decisions regarding seasonal closures and possession limit changes.

RI ACCSP staff is also 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 2019, 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. **RI relies on comprehensive SAFIS eDR and eTRIPS/RI Commercial Harvester Logbook data for fisheries management programs including quota monitoring, resource assessment and allocation, and license tracking. The state also relies on eLOGBOOK data as it enhances and adds to the existing MRIP dataset with regarding landings and discards,** most notably it increases our understanding of the length frequency distribution of recreational harvest. This comprehensive and timely data allows RIDMF 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.**

Data Delivery Plan:

All landings data and catch and effort data collected by RI is entered in SAFIS. Landings data is entered directly into SAFIS eDR by the dealer twice a week and immediately available to ACCSP. Catch and effort (logbook) data is entered into SAFIS eTRIPS throughout the year, and is typically completed by March of the following year. **Once entered, all of this data is immediately available to ACCSP and other program partners who utilize SAFIS and the SAFIS tables within the warehouse. This data is also incorporated into the warehouse tables during the yearly uploads and available for warehouse users annually.**

Additionally, RIDMF collects data on crustacean dockside sales, horseshoe crabs, lobster (sea, port, and ventless surveys), aquaculture, and finfish port sampling. **Currently, the dockside sale, horseshoe crab, lobster, and aquaculture data is converted into the proper flat file format and submitted to ACCSP during the spring upload.** The data feed for the finfish port sampling is still being developed. Once it is active, RI's data will be submitted.

Approach:

All licensed seafood dealers in RI **(140 dealers)** are electronically entering trip level data into SAFIS at least twice weekly (RIMF, 2018). Dealers are provided support and initial SAFIS training regarding the SAFIS eDR system. **Technical support is provided to dealers**

who call or walk-in daily for questions regarding licensing, possession limits and seasons, reporting, and other topics. Site visits are conducted if further support and training are necessary.

To ensure data quality and proper SAFIS reporting, RIDMF strictly monitors dealer compliance. Phone calls are made to dealers who fall behind in reporting, and in cases where dealers are found to be non-compliant, administrative action is taken. 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. It contains information regarding the number of reports made during a period, the number of reports that were submitted late, and the number of times RIDMF staff needed to contact the dealer regarding late reporting and reporting mistakes.

Landings entered by dealers are routinely checked for accuracy, both via SAFIS audit protocols daily, and through additional weekly manual audits. Any issues discovered during these audits are 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) during scheduled weekly updates.** These audits and updates are of great importance and are necessary to maintain high standards of data quality.

Quota monitoring relies solely on accurate and up to date SAFIS data. Data are downloaded from SAFIS daily and analyzed using a software program developed in the statistical package R (R core team 2016). Once data are in the software program, they are sorted and filtered to detail daily landings of fluke, scup, black sea bass, striped bass, tautog, menhaden, bluefish, and smooth dogfish. **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 RIDMF webpage as public information.**

Data requests from fishermen, academics, the RIDEM Licensing Division, and other stakeholders are also completed. **These requests support fisheries science and management decisions and are necessary to maintain the level of support required by RIDEM and other regional fisheries managers. 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.

In addition to monitoring SAFIS landings data, metadata and socio-economic data are also collected by RI ACCSP staff. Examples of metadata include but are not limited information regarding weather events (i.e. wind data), possession limits, and closed fishing seasons. Socio-economic data collected comes primarily from dockside sales of crustaceans from the state dockside sales logbook. Economic data entered by 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 RIDMF to provide efficient and effective management. **Harvesters in all commercial fisheries are required by RI law to submit catch and effort data to RIDMF. Currently, all finfish, crustacean, squid, and whelk commercial fishermen are required to submit catch and effort information.** Shellfish fishermen are not required to submit catch and effort logbooks because the data is captured via a one-ticket system.

There are approximately 1600 commercially licensed fishermen in RI. 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 SAFIS eTRIPS. Due to the multiple reporting options, at the time of license renewal/purchase the **fishermen must declare a reporting method: 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.**

Federal fishermen are exempt from the state logbook program to ensure there is not duplicate effort information being collected, however they are still required per RIDMF regulation to submit reports. Previously, state copies of the VTR were required to be submitted to RIDMF, however, with the development of online databases, this is no longer necessary. At the beginning of the year, all fishermen who declared VTR as their reporting method are mailed a "VTR Declaration Form," that asks for their federal permit and commercial fishing license number. **This information is then used to track compliance for the fishermen using the online NMFS database.** This system for VTR compliance eases the burden on both the fishermen and RIDMF. Fishermen are now 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 paper VTRs are not being collected.

Fishermen without a VTR requirement must submit catch and effort information directly to RIDMF. **All fishermen who declare the logbook as their reporting method needs to submit quarterly catch and effort paper logbooks using postage-paid envelopes provided by RIDMF** to ensure timely return of completed logbooks.

Since 2012, RI fishermen have had the opportunity to enter their catch reports directly into eTRIPS. Currently there are approximately 775 eTRIPS accounts in RI issued to fishermen who declared eTRIPS as their reporting method; **this is equivalent to 51% of all fishermen with a reporting requirement, a large increase as only 26% of fishermen were utilizing eTRIPS in 2014** (Figure 2: Reporting Method Breakdown). To help continue the trend to electronic reporting, RIDMF staff offers support to fishermen who want to learn and use the

program. **Training materials are available on the RIDMF website, and staff routinely answer phone calls, emails, and walk-in questions about eTRIPS.** RIDMF intends to continue outreach for eTRIPS and eTRIPS Mobile to continue to increase the number of fishermen using electronic reporting.

RIDMF also does outreach and support for eTRIPS - Mobile Application, and plans to continue this in the future. The application allows for both real time data entry as well as post-trip entry. Reports submitted through this application fulfill both state reports and NMFS Greater Atlantic Regional Fisheries Office (GARFO) VTRs. **Currently, there are 31 users; however due the ease of use and GARFO acceptance, interest and use has been increasing.** 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.

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 directly 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, **emails are sent to all RI eTRIPS users detailing the common errors seen during the auditing process, and stresses the importance of accurate reporting.** 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. Additionally, **harvester license number, dealer, and sale date from the catch and effort data are used to match records with dealer reports for quality control and assurance of the landings data.**

Fishermen who hold a RIDEM crustacean dockside sales endorsement must fill out a dockside sales logbook which details the quantity, market, grade, and price of all crustaceans sold at the dock. This dockside sales logbook is mailed to the 274 dockside endorsement holders and must be completed before the licensee can renew their license for the following year. **The dockside sales data captures some of RI's economic data, and 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.

RI will continue to utilize and promote the voluntary eLOGBOOK program. This data can be used for recreational effort estimates as well as for important management decisions in RI. **RIDEM Marine Fisheries regulation 7.9.1-2 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.** Compliance will continue to be monitored for party and charter fishermen in the tautog fishery. The eLOGBOOK data also contains lengths of both fish harvested and released. This data was useful for all partners in the most recent **bluefish stock assessment, as discard data from eLOGBOOK was used in the 2015 benchmark assessment.** RI ACCSP staff will continue the outreach on eLOGBOOK to ensure the same quality of data will be available for use in future stock assessments.

RIDMF has 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, weakfish, tautog, bluefish, menhaden, and lobster. **RIDMF's at-sea lobster sampling program focuses on ASMFC management needs** as well as state specific data needs. **RIDMF provides the data feed of lobster port and at-sea sampling data to ACCSP via the ASMFC Lobster Assessment Database.** Neither the lobster sampling programs nor the finfish sampling programs receive funding from ACCSP.

RIDMF 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. RIDMF staff are heavily involved in all aspects of ACCSP and contribute in full to all partners' interest.

From 2002 through 2014, RI had a full-time state coordinator to manage and implement the ACCSP data collection program funded through ACCSP. 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 state 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. In February 2016 the Fisheries Specialist was hired by RIDMF 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. With a total budget of \$204,985, 62% of the total cost is an in kind contribution from RIDMF. Table 1 provides a brief project history of ACCSP Implementation in RI. Cost details for fiscal year 2019 are outlined in the requested budget while last year's requested funding is presented in Appendix A.

In a RIDMF 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 RIDMF Marine Fisheries section has undergone a peer reviewed evaluation and need assessment, which concluded that RIDMF 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. **RIDMF 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.**

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 RIDMF'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 RIDMF's dedication to covering the costs of the ACCSP program in the future, but asks for funding assistance during this transitional time.**

RIDMF also recognizes the recent changes made to maintenance proposals regarding funding opportunities. While RI does not have a concrete plan in place to take over the funding, **different options are being investigated 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:

Goal	Metric	Accomplished
Data Delivery to ACCSP	Supplemental data complete, correct, and available for spring upload	Data delivered to ACCSP in March annually
Landings and Effort Data Delivery to ACCSP	Trips Entered in 2017 by application	eDR: 23,837 (57,854 including federal trips) eTRIPS: 23,898
Support to RI Licensed Seafood Dealers	Dealer trainings, site visits, and other outreach in 2017.	10 new dealers 4 site visits Phone call and email correspondence was made
Quota Monitoring	Number of possession limit changes and early closures during 2017 determined through accurate SAFIS data	47 changes in possession or early season closures

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.
2017	FY17: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	78,420	Maintenance of automatic data feeds for landings catch and effort data via SAFIS, eLOGBOOK data feeds, and supplemental data feeds. Outreach of eTRIPS-Mobile. Continue SAFIS user training and outreach.
2018	FY18: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	76,920	Maintenance of automatic data feeds for landings catch and effort data via SAFIS, eLOGBOOK data feeds, and supplemental data feeds. Outreach of eTRIPS-Mobile. Continue SAFIS user training and outreach.

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			

Bold Comments indicate sections that help with the ranking process

Highlighted text indicates changes from original submission

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

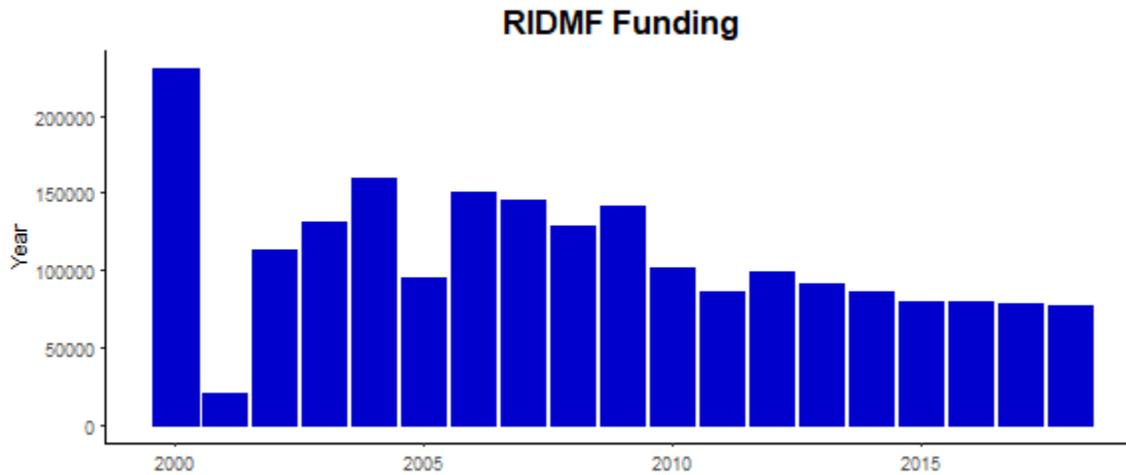


Figure 1. RIDMF past funding from ACCSP.

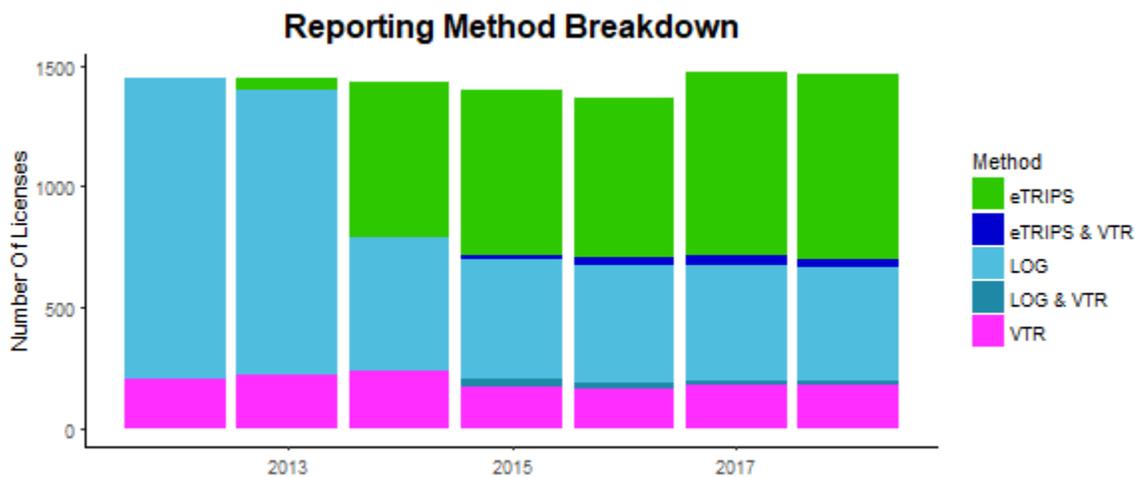


Figure 2: Reporting Method Breakdown

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 2019 (August 1, 2019 to July 31, 2020)

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%)	\$39,315	0	\$39,315
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%)	\$8,501	\$11,706	\$20,207
Total Personnel	\$75,420	\$106,008	\$181,428

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	\$76,920	\$128,065	\$204,985
Percentage	38%	62%	

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:**
Approximately 10% of annual salary (\$75,150) equals \$7,515.
- ii. **Principal Biologist:**
Approximately 40.334% of annual salary (\$58,011) equals \$23,398.
- iii. **Principal Biologist:**
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 the Supervising Biologist are \$47,965. Fringe benefits for 10% of his time equals \$4,797.
- Total annual fringe benefits for Principal Biologist 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 Principal Biologist 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.

From RIDEM:

- ii. **Logbook Printing:** 600 logbooks @ \$5.91/logbook – \$3,546.
iii. **Logbook Mailing:** 600 logbooks @ \$4.75/book = \$2,850
iv. **Dockside Printing:** 300 logbooks @ \$4.96/logbook - \$1,488
v. **Dockside Mailing:** 300 logbooks @ \$5.91/logbook - \$1,773
vi. **Business Reply Envelope Printing:** 20,000 Envelopes @ \$0.125/envelope = \$2,500.
vii. **Business Reply Account:** \$100/month Mar-Nov; \$200/month Dec-Feb = \$1,500.
viii. **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.
ix. **Telephone and Fax usage** - \$500
x. **Office Supplies** \$1,000
xi. **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.

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 2018 is 17%.

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 and socioeconomic that is detailed on page 6 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** –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, 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 8-9. Changes in maintenance proposal funding has been addressed by RIDMF and the ACCSP Coordinator role has been transitioned to a Principal Biologist FTE. While RIDMF 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 RIDMF.

Data

- **Improvement in data quality/quantity/timeliness** – 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 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, all supplemental data (port and sea sampling, aquaculture, dockside sales, and horseshoe crab data) is provided to ACCSP annually in the proper format.
- **Potential secondary module as a by-product** – Social and economic data that is described on pages 6 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 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.

Appendix A: Prior year budget

Requested Budget FY 2018 (August 1, 2018 to July 31, 2019)

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%)	\$39,315	0	\$39,315
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%)	\$8,501	\$11,706	\$20,207
Total Personnel	\$75,420	\$106,008	\$181,428

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	\$76,920	\$128,065	\$204,985
Percentage	38%	62%	

Appendix B: Curriculum Vitae for Principal Investigator

Bold Comments indicate sections that help with the ranking process
Highlighted text indicates changes from original submission

Education

Roger Williams University
Bachelor of Science in Marine Biology
Minor in Mathematics

Bristol, RI
Dec. 2010
GPA: 3.212/4.0

Atlantic States Marine Fisheries Commission
Introduction to Stock Assessment
Intermediate Stock Assessment Training

October 2015
December 2017

Work Experience

Rhode Island Department of Environmental Management
Principal Biologist

February 2016-Present

- 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.
- 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
Fisheries Specialist 1- ACCSP Coordinator

May 2014- February 2016

- 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.
- Write and submit project plans, compliance reports, and grant proposals.

- Member of various ACCSP committees, including Commercial Technical Committee and Information Systems 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.



COMMERCIAL FISHERIES
RESEARCH FOUNDATION
P.O. Box 278, Saunterstown, RI 02874
Phone: (401) 515-4892 | Fax: (401) 515-3537
www.cfrfoundation.org

August 10, 2018

Ali Schwaab
Program Manager
Atlantic Coastal Cooperative Statistics Program
1050 N. Highland St, Suite 200 A-N
Arlington, VA 22201

Dear Ali,

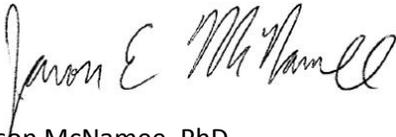
The RI DEM and CFRF have reviewed the suggestions provided by the ACCSP Operations and Advisory Committee members for our proposal titled "Advancing Fishery Dependent Data Collection for Black Sea Bass in the Southern New England and Mid-Atlantic Region Utilizing Modern Technology and a Fishing Vessel Research Fleet Approach". We have revised the proposal to address these suggestions, and for clarity, we have also responded to each suggestion individually below.

1. Can PI provide any additional information (sampling location, time of year and gear) on the two additional vessels to be added?
 - *The two additional vessels proposed for addition will be selected from an open application period. Preference will be given to vessels which fish throughout the winter months and/or to fishing vessels which have a range further offshore or to the south. This vessel preference is intended to reduce the data coverage gaps in the existing Research Fleet. It is anticipated the additional vessels will likely be either offshore lobster, gillnet, or trawl.*
2. p.10 - Can any additional information be provided as to the higher than scheduled number of sampling trips (goal of 432 per year but sampled 643) and the lower than max target of sea bass sampled (max target of 21,600 sea bass with 8,439 sea bass actually sampled)?
 - *Due to the multi-gear nature of the Research Fleet it quickly became apparent that sampling schedules may vary widely by gear type as each gear type operates on varying trip lengths, soak times, and seasons. The maximum target of 21,600 black sea bass would only be achievable if all vessels sampled at 100% which would not be possible as multiple Fleet Members do not fish through the winter (as is customary in their respective gear types). The higher than anticipated sampling sessions is also due to gear differences as some fisheries (in particular the fish pot fishery) will shut down entirely if the black sea bass season is closed or, on a daily time frame, if the trip limit is reached. This leads to a scenario where Fleet Members sample smaller amounts of black sea bass more frequently to ensure they hit their monthly requested sampling minimum based on the power analysis.*

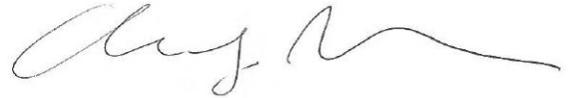
3. p.4 - Regarding the statement that sea bass are poorly sampled by trawl gear—the 2016 sea bass stock assessment working group looked at this issue and found little differences in the average catch and size distribution of sea bass caught in a trawl survey versus a fish pot survey and in relation to distance sampled from structure.
 - *Statement has been revised in text to better depict trawl survey limitations.*
4. p.9 - Some additional information – either some quick summary info after each vessel indicating fishing location and time of year or a map showing spatial and temporal coverage – might be helpful, especially since all vessels are from RI, to demonstrate Mid-Atlantic region is to be sampled and when.
 - *Description of the Research Fleet coverage (spatial and temporal) by gear types has been added to the proposal as well as a description of the proposed additional vessels to fill out the coverage gaps.*

Please do not hesitate to contact us if the Operations and Advisory Committee have any further questions.

Sincerely,



Jason McNamee, PhD
Chief, RI DEM Marine Fisheries



Anna Malek Mercer, PhD
Executive Director, CFRF

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

Advancing Fishery Dependent Data Collection for Black Sea Bass (*Centropristis striata*) in the Southern New England and Mid-Atlantic Region Utilizing Modern Technology and a Fishing Vessel Research Fleet Approach

Submitted by:

Jason McNamee, PhD
Rhode Island Department of Environmental Management
3 Fort Wetherill Rd.
Jamestown, RI 02835
jason.mcnamee@dem.ri.gov

and

Anna Malek Mercer, PhD
Commercial Fisheries Research Foundation
P.O. Box 278
Saunderstown, RI 02874
amalek@cfrfoundation.org

Rhode Island Department of Environmental Management & Commercial Fisheries Research Foundation
ACCSP Funding Proposal (Maintenance Project – Year 3): Fishery Dependent Sampling for Black Sea Bass (*Centropristis striata*)
Proposal components that address the ranking criteria are underlined and a summary is provided on pages 27-29.
Changes from the initial proposal are highlighted in **yellow**.

Applicant Name: Rhode Island Department of Environmental Management (RI DEM) and the Commercial Fisheries Research Foundation (CFRF)

Project Title: Advancing Fishery Dependent Data Collection for Black Sea Bass (*Centropristis striata*) in the Southern New England and Mid-Atlantic Region Utilizing Modern Technology and a Fishing Vessel Research Fleet Approach

Project Type: Maintenance (Year 3)

Principal Investigators: Jason McNamee, PhD, Chief of Marine Fisheries, Rhode Island Department of Environmental Management; Anna Malek Mercer, PhD, Executive Director, Commercial Fisheries Research Foundation

Requested Award Amount: \$132,749

Requested Award Period: June 1, 2019 – May 31, 2020

Date Submitted: June 11, 2018

Objective:

This proposal is a request for financial support for an additional 12 months of biological catch, effort, and bycatch sampling by the Black Sea Bass Research Fleet, which was successfully piloted in 2016 with support from ACCSP. In the first 18 months of data collection (Year 1 of funding from ACCSP), the Research Fleet sampled 8,439 black sea bass from 643 locations between Narragansett Bay to Hudson Canyon. The Research Fleet will continue data collection through May 31, 2019 (Year 2 of funding from ACCSP). All biosamples data collected by this project have been communicated to and accepted by ACCSP. The proposed project will continue delivering black sea bass biosamples data to ACCSP at six-month intervals through May 31, 2020.

The goal of the proposed project is to seamlessly continue the Research Fleet's sampling efforts to develop year-round time series of black sea bass (*Centropristis striata*) catch, bycatch, and biological data for five different gear types (trawl, lobster/crab pot, fish pot, gillnet, rod and reel) throughout the Southern New England (SNE) and Mid-Atlantic (MAB) region. The continuation of this project is critical to the evolution of black sea bass assessment and management efforts by the Atlantic States Marine Fisheries Commission, Mid-Atlantic Fisheries Management Council, Northeast Fisheries Science Center, and Atlantic Coastal Cooperative Statistics Program as the Black Sea Bass Research Fleet produces spatially and seasonally distinct data for numerous commercial and recreational gear, which is currently lacking for this species.

Project components include: 1) Continue and expand the existing fishery dependent data collection program that utilizes fishing vessels and modern electronic technology to collect and relay catch and bycatch data (number, length, sex, disposition) and fishery characteristics (location, gear type, effort, habitat) for black sea bass from across the SNE/MAB region throughout the year; 2) Internal data analysis to address research questions about spatiotemporal patterns in black sea bass biological and fishery characteristics and gear-specific selectivities; and 3) Communication of project data and results to the Atlantic Coastal Cooperative Statistics Program (ACCSP), black sea bass stock assessment scientists, managers, and members of fishing industry.

In summary, the general goals of the proposed project are:

- 1) Collect and communicate critically needed fishery dependent black sea bass data (catch and effort, bycatch, and biological) in a cost-effective way using modern electronic technology and fishermen's time on the water;
- 2) Contribute to the evolution of the northern Atlantic black sea bass stock assessment and associated management measures;
- 3) Demonstrate a model for fishery dependent data collection, management, analysis, and utilization that can be duplicated in a cost-effective way in other regions of the black sea bass range and in other fisheries.

Specific objectives include the following:

- Continue the Black Sea Bass Research Fleet for an additional 12 months to develop seasonal characterizations of northern Atlantic black sea bass biology and distribution;
- Expand the Black Sea Bass Research Fleet to include two additional F/Vs to ensure full seasonal data coverage;
- Maintain and evolve the On Deck Data app to meet the data needs of scientists and the logistical needs of participant fishermen;
- Collect fishery dependent black sea bass data from five gear types (trawl, lobster/crab pot, fish pot, gillnet, rod and reel) across the SNE/MAB region to characterize the size and sex distributions of black sea bass catch and bycatch and investigate the spatial and temporal trends of the fishery;
- Communicate black sea bass biosamples data to ACCSP every six months;
- Conduct internal analyses of the project database to: 1) Assess the selectivities and CPUE of five gear types in the SNE/MAB region and explore temporal variability, and 2) Further monitor and assess spatial and temporal trends in species' catch and bycatch composition and fishery characteristics;
- Further refine gear-specific fishery dependent indices that utilize different data error structures, standardization techniques, and Bayesian applications;
- Communicate to a broad audience the benefits and value inherent in this type of collaborative data collection program.

Need:

As asserted in the ACCSP Biological Review Panel's biological sampling priority matrix, black sea bass is identified as top priority for data collection, receiving the highest total priority ranking for inadequate biological sampling as well as being a high priority for managing stakeholders (ASMFC, NMFS, and state agencies) (ACCSP 2018). The lack of adequate data for northern Atlantic black sea bass is an issue of regional importance, as this highly valuable stock ranges from Cape Hatteras to the Gulf of Maine (Musick & Mercer 1977, Moser & Shepherd 2009). In part due to the dearth of data throughout the black sea bass range, assessment and management efforts have been slow to react to the shifting distribution and growing abundance of the species (Bell et al. 2014, NEFSC 2017). As stated by ASMFC (2013), high priority data needs for black sea bass include: biological characterization of commercial catch and discards, and expanded sampling of all sizes across the species temporal and spatial range to develop more reliable catch-at-age and CPUE. Ultimately, cost-effective sampling programs, such as the Black Sea Bass Research Fleet, are needed to collect these data on regional scales and inform and evolve the stock assessment to consider the complex life history and spatial structure of black sea bass.

Fishery dependent data has become an important source of information that is used as a term of reference for many stock assessments, but in the case of the northern Atlantic black sea bass stock, the data generated by the Black Sea Bass Research Fleet serves as the only systematically collected fishery dependent data source with a focus on the data being used in the assessment process. Thus, this project seeks to strengthen the fishery dependent data for this population in an effort to provide better information from across the temporal and spatial distribution of this species.

The limited coverage of optimal black sea bass habitat and semi-seasonal (spring/winter) sampling schedule of the NEFSC trawl survey may limit the suitability of this data for the stock assessment (ASMFC 2013) and require the addition of new data streams to improve the information available to the assessment. As such, the ASMFC Black Sea Bass Technical Committee and ACCSP Biological Review Panel identified expanded collection of biological data as a top priority for improving the black sea bass stock assessment (ASMFC 2013, ACCSP 2018).

Other regions have adapted sampling and analytical techniques to better fit the life history and habitat associations of the black sea bass (Southern Atlantic and Gulf of Mexico stocks). These stock assessments rely heavily on fishery-dependent indices of abundance (SEFSC 2013). Such fishery-dependent indices of abundance, however, have not yet been developed for the northern black sea bass stock due to insufficient data, but will become possible if the Black Sea Bass Research Fleet is able to amass multiple years of contiguous data. This project aims to address this need by maintaining and expanding the existing Black Sea Bass Research Fleet to conduct year-round biological sampling of black sea bass catch and bycatch within the trawl, lobster/crab, fish pot, gillnet, and rod and reel fisheries in the SNE/MAB region.

Rhode Island Department of Environmental Management & Commercial Fisheries Research Foundation
ACCSP Funding Proposal (Maintenance Project – Year 3): Fishery Dependent Sampling for Black Sea Bass (*Centropristis striata*)
Proposal components that address the ranking criteria are underlined and a summary is provided on pages 27-29.
Changes from the initial proposal are highlighted in **yellow**.

Ultimately, the proposed project will help to meet ACCSP's mission of improving data quality for fisheries science. In addition, this project, and its integration with the ACCSP data housing program, will lend to the other mission of the ACCSP, namely by contributing to a single data management system that will meet the needs of fishery managers, scientists, and fishermen. Collecting timely scientific data across a species range is imperative for successful fisheries management, as more robust data enables fisheries science to be as comprehensive as possible, which in turn supports informed and efficient decision making by managers. Furthermore, stock assessment scientists rely on robust biological, catch and effort, and bycatch data to help improve the quality of stock assessments. In these ways, the proposed project meets all of the main elements of the mission of the ACCSP program.

Results and Benefits:

The results of the proposed project include:

- Improved quality, quantity, and timeliness of biological, catch and effort, and bycatch data for the northern Atlantic black sea bass, made available via the ACCSP;
- A vetted source of year-round black sea bass data that can be used to inform the stock assessment and management of this data poor species;
- Coordinated data transmission procedures with the ACCSP that build upon the CFRF's existing data communication practices with ACCSP's Senior Data Coordinator;
- A demonstrated method to cost effectively collect data for a commercially and recreationally important species not easily sampled through trawl surveys, and from areas and times of year not accessed by existing survey programs;
- Improved collaboration and trust between fishermen, scientists, and managers;
- Improved accuracy and credibility of the stock assessment and management plan for the northern Atlantic black sea bass stock;

The benefits of the proposed project are:

- Address priorities of ACCSP, ASMFC, and MAFMC by providing critically needed black sea bass data from the SNE/MAB region to support assessment and management efforts that reflect the current state of the resource;
- Provide an efficient and constructive way for fishermen to be involved in the scientific process by using modern technology to collect quantitative black sea bass data during routine fishing practices;
- Fill black sea bass data gaps in areas, habitats, and times of year not covered by standard survey techniques;
- Evolve and improve the black sea bass stock assessment by providing expanded biological data from retained and discarded black sea bass from a variety of gear types;
- Support regional science and management agencies, including ACCSP, ASMFC, MAFMC, ACCSP, and state agencies in their efforts to sustainably manage the black sea bass resource;

- Support diversification and resilience of fishing communities in the many states across the Atlantic coast with a black sea bass fishery;
- Provide a model for cost-effective fishery dependent data collection efforts in other regions and fisheries.
- Build strong working partnerships between fishermen, scientists, and managers that will contribute to the sustainable management of the nation's living marine resources;
- Build confidence in the efficacy of the northern Atlantic black sea bass stock assessment and management process.

Data Delivery Plan:

An important component of the proposed project is the compilation and communication of fishery and biological data to the ACCSP, participant fishermen, stock assessment scientists, and management teams. The CFRF will maintain the black sea bass database for internal project analyses (described below) but will also regularly share the project data with other users, regardless of any internal publication endeavors.

Copies of the black sea bass database will continue to be sent semi-annually (every six months) to the ACCSP, Atlantic States Marine Fisheries Commission, and Mid Atlantic Fishery Management Council (via CFRF or Jason McNamee, member of ASMFC Black Sea Bass Stock Assessment Committee (2016), and MAFMC Black Sea Bass Monitoring Committee). These data will be made available in a format that is compatible with the ACCSP database so they can be readily used in the black sea bass stock assessment and other analyses. Data submissions to the ACCSP will build upon the established procedures from the first two years of the project. All data provided to the ACCSP will match ACCSP data collection standards and any requested and available metadata will be provided. At the end of the project, data will also be made available to fishery scientists at the NMFS Northeast Fisheries Science Center. A vessel ID system will be used to maintain the confidentiality of participant fishing vessels.

In an effort to provide regular feedback to fleet participants, the project team will compile and distribute individual data reports every three months (quarterly). Vessel-specific data reports will include the following summary statistics: number of catch sampling sessions, amount of effort sampled (number of trawls, hooks, traps), average depth of sampling, percentage of black sea bass catch retained for sale, percentage of black sea bass catch discarded, number of black sea bass biologically sampled, sex distribution of black sea bass sampled, minimum/maximum length of black sea bass sampled, and average length of black sea bass sampled. Additional summary statistics will be available upon request. Data reports were compiled and distributed to Research Fleet participants following the above-mentioned quarterly time frame and content guidelines throughout the entirety of past project sampling.

Completed Data Delivery to ACCSP:

Rhode Island Department of Environmental Management & Commercial Fisheries Research Foundation
 ACCSP Funding Proposal (Maintenance Project – Year 3): Fishery Dependent Sampling for Black Sea Bass (*Centropristis striata*)
 Proposal components that address the ranking criteria are underlined and a summary is provided on pages 27-29.
 Changes from the initial proposal are highlighted in **yellow**.

During the first funding year of the project, the CFRF and RI DEM worked with the ACCSP Data Coordinator, Julie Defilippi Simpson, to coordinate data formats, metadata, and delivery procedures for the Research Fleet's black sea bass biosamples data. As a result of these efforts, all black sea bass biosamples data collected to date through the funded project were incorporated into the ACCSP database in June 2017 and subsequently in December 2017. The project team will maintain a semi-annual data delivery schedule to ACCSP throughout the proposed project following the same data formats and standards previously established.

Approach:

The proposed project seeks to collect, communicate, and analyze critically needed catch, bycatch, and biological data for incorporation into the ACCSP biosamples database and ultimate application in the northern Atlantic black sea bass stock assessment. Project components include: 1) Maintenance of the current Black Sea Bass Research Fleet and expansion to incorporate two new vessels ; 2) Collection of fishery-dependent biological (catch and bycatch) black sea bass data and fishery characteristics for 12 months in the SNE/MAB region; 3) Internal data analysis to address research questions about spatiotemporal patterns in the black sea bass population and fishery; 4) Compilation and communication of project data and results to ACCSP, stock assessment scientists, and fisheries managers; and 5) Outreach and education activities to share findings. Methodological details are outlined below.

Maintenance and Expansion of Black Sea Bass Research Fleet and Data Collection App:

During the first funding year of this project, the CFRF and RI DEM were successful in developing the Black Sea Bass Research Fleet for fishery dependent data collection, including the development of a Project Steering Committee, solicitation and selection of participant fishing vessels, development of the On Deck Data app and SQL database, refinement of sampling protocols, construction of sampling equipment, training of Research Fleet participants, on-time initiation of data collection (December 2016), data delivery to ACCSP (June 2017 and December 2017), and professional and industry outreach. The project was implemented by the PIs, CFRF staff, and a Project Steering Committee, which consists of members of the fishing industry as well as state and federal fisheries scientists and managers. Currently the project is run by the PIs and CFRF staff and the project steering committee serves in an advisory role and provides feedback on project progress and major milestones. More information about the accomplishments of the project is available on the project website: www.cfrfoundation.org/black-sea-bass-research-fleet.

If funded, during the third year of the project, the CFRF and RI DEM will maintain the ten fishing vessels currently operating in the Research Fleet as well as seek to expand the fleet by an additional two vessels. Over the course of the first year of the project, it became apparent that in order to achieve year-round black sea bass sampling, additional Research Fleet F/Vs that interact with black sea bass during winter months are needed. The two additional vessels selected in the potential Year 3 of funding will seek to: 1) increase the seasonal and spatial

coverage of black sea bass sampling, and 2) Increase the gear type replicate number to bolster the statistical power of current Research Fleet gear analyses. To ensure a fair and transparent fleet expansion, the CFRF and RI DEM will issue an open call for F/V applications. Application materials will specify a preference for F/Vs that operate offshore or in the Mid-Atlantic throughout the winter months. A Review Committee will rank applicants and select the two new F/Vs for the Black Sea Bass Research Fleet. The CFRF staff will notify the selected F/Vs and will work with them to establish work agreements, introduce them to sampling equipment, and train them on sampling protocols. The goal will be for the two new F/Vs to interact with black sea bass year-round and, thus, the new F/Vs will likely be offshore lobster, trawl, or gillnet vessels. Adding F/Vs that utilize any of the aforementioned gear types will increase the Research Fleet’s spatial and temporal data coverage as well as bolster the number of gear replicates in the Research Fleet, adding statistical power to future data analyses. Modifications to the On Deck Data app as necessitated by the new F/Vs are expected to be negligible.

The black sea bass data collection app, On Deck Data, was developed during the first year of the project to enable Research Fleet participants to collect standardized black sea bass data as well as day-to-day observations. On Deck Data prompts participant fishermen to record a suite of session data (location, depth, habitat type, etc.), effort data (mesh size, length of trawl, hooks fished, etc.), and biological data (length, sex, disposition) while at sea. To account for the multi-gear nature of the black sea bass fishery, the On Deck Data app prompts gear-specific data entry for Research Fleet participants (Table 1). During the first funding year of the project, On Deck Data received multiple user interface improvements to expedite data collection.

Table 1. Summary of fishing effort data collected by the Black Sea Bass Research Fleet.

Trawl	Gillnet	Commercial Rod & Reel	Charter	Lobster/Crab Traps	Fish Pot
Mesh Size (inches)	Number of Net Panels Per String	Time Spent Fishing (hours)	Time Spent Fishing (hours)	Soak Time (days)	Soak Time (days)
Tow Time (hours.decimal)	Length of Net Panels (feet)	Number of Rods Fished	Number of Rods Fished	Number of Traps	Number of Traps
Sweep Length (feet)	Mesh Size (inches)	Humber of Hooks Used	Number of Hooks Used	Escape Vent Size (inches)	Escape Vent Size (inches)
	Soak Time (days)			Escape Vent Shape	Entrance Size (inches)
	Net Height (feet)				
	Tie Downs (inches)				

The On Deck Data app will be maintained throughout the proposed project to allow for efficient data collection and wireless data submission by Research Fleet participants. The CFRF and RI DEM will continue to work with the app developer (Don Coxe Consulting) to address any issues that arise and to update the app to maintain functionality. Application maintenance is a constant task, as tablets regularly receive operating system updates that may affect application functionality.

The Black Sea Bass Research Fleet will continue to follow the fishery-dependent sampling protocols that were successfully implemented during the first year of the project to collect catch and effort, biological, and bycatch data from the SNE/MAB region. The percentage of project effort devoted to each of these modules is as follows: Catch and Effort 30%, Biological 40%, Bycatch 30%. The estimated effort devoted to the catch and effort module is based upon sampling during the roughly 154 days of open black sea bass fishing season in Rhode Island in 2016 (42% of the year). The estimated project effort devoted to biological sampling reflects the collection of black sea bass length and sex data by participant vessels during three trips per month for 12 months. Finally, the project effort allocated to the bycatch module reflects sampling efforts conducted while the commercial black sea bass fishing season is closed and while participant vessels are targeting other species.

Fishery-Dependent Data Collection:

The Black Sea Bass Research Fleet started collecting data on November 30, 2016 and, if this proposal is funded, will continue to do so, utilizing the established sampling protocols and procedures, through May 31, 2020. The Black Sea Bass Research Fleet currently consists of nine fishermen based in Rhode Island, chosen strategically to provide data coverage from across the SNE/MAB region, throughout the year, from a variety of gear types: F/V Excalibur (Offshore Trawl), F/V Johnny B (Fish Pot, Rod & Reel, Lobster Pot), F/V Laura Lynn (Fish Pot, Rod & Reel, Lobster Pot), F/V Matrix (Lobster/Crab Pot), F/V Nancy Beth (Gillnet), F/V Priority Too (Rod & Reel, Charter), F/V Second Wind (Offshore Trawl), and F/V Sweet Misery (Gillnet, Lobster Pot) and F/V Lady Clare (Lobster Pot). Two additional F/Vs that interact with black sea bass will be added to the Research Fleet to ensure year-round data coverage and higher gear-type specific statistical power. The Research Fleet's current statistical area sampling coverage is depicted in Figure 1 below. The majority of samples have originated from statistical areas 537 and 539 as these two statistical areas exclusively cover the fishing grounds of the F/V Johnny B, F/V Laura Lynn, F/V Matrix, and F/V Priority Too, all of which are either seasonal fishing vessels or do not interact with black sea bass in the winter. The majority of inshore lobster, fish pot, rod and reel and gillnet samples come from the end of spring through the end of the fall when black sea bass are in highest abundances inshore in statistical areas 537 and 539. The F/V Second Wind and the F/V Excalibur fish the furthest south and interact with black sea bass year-round. The newest addition to the Research Fleet, F/V Lady Clare, fishes offshore and interacts with black sea bass heavily in the winter and spring months, however encounters them less frequently through the summer and fall.

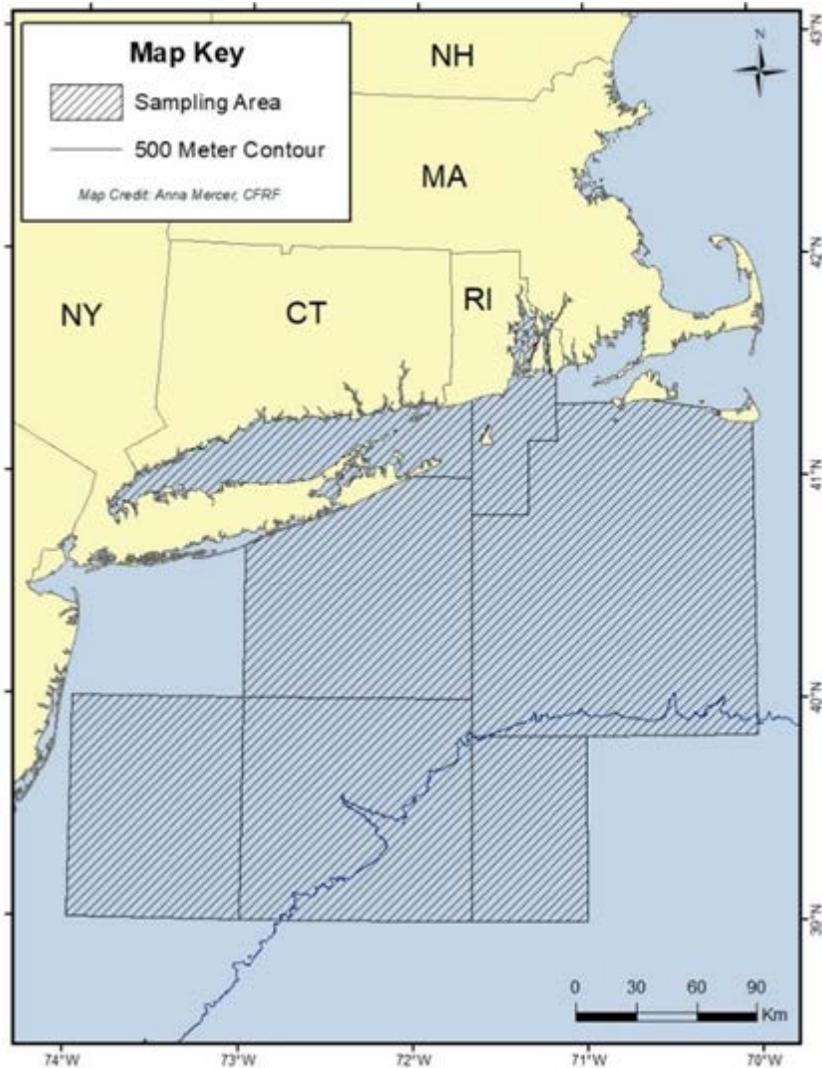


Figure 1. Current statistical area sampling coverage range of the Black Sea Bass Research Fleet, sampled statistical areas include 537, 539, 611, 613, 616, 615, and 533

Participant fishermen will use Samsung Tab A tablets pre-programmed with On Deck Data black sea bass data collection app, described above, to efficiently and accurately record and transmit data. As such, the proposed project will advance the use of electronic technology in at sea biological data collection, management, and analysis efforts.

The goal for each participant is to conduct at-sea catch sampling sessions during three fishing trips each month (Nelson 2014). Thus, the black sea bass research fleet will aim to sample 36 trips per month, for a total of 432 trips over twelve months. The realized sampling frequency, however, will be dependent on a variety of factors, including weather, seasonal black sea bass distribution, and fishery closures. Further, due to the high seasonality of a large portion of the Black Sea Bass Research Fleet and fishery sampling frequency exhibits high seasonal fluctuations. Given the population inferences implied in the project objectives and the

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aggregating nature of black sea bass, a biological sampling (length/sex) minimum of 50 black sea bass per location will be the required (Zhang & Cadrin 2012). With a goal of sampling three locations per month, the Research Fleet may sample up to 21,600 black sea bass over the course of the year. Due to the multi-gear nature of the Research Fleet, the proposed sampling targets do not adequately represent the fishing schedules of each gear type. For example, due to the low daily catch limit in Rhode Island for black sea bass if a fishing vessel is only targeting black sea bass on a day trip and the limit is caught, all fishing ceases. This leads to instances where sampling 50 black sea bass per location becomes unfeasible as fishing may have already stopped prior to landing 50 black sea bass. However, the goal of sampling 150 black sea bass per month remains to ensure statistical power. Vessels may sample fewer fish from more than three locations to reach the 150 fish per month target. Further, the same scenario occurs in highly mobile fishing gears, such as charter and commercial rod and reel, which will often change locations prior to catching 50 black sea bass. Both instances may lead to the potential for more numerous sampling locations with fewer fish from each location. Finally, the maximum target of 21,600 black sea bass would only be achievable if all Research Fleet participants operated year-round. Since many of the gear types represented within the Research Fleet stop fishing for the winter months, the realized sampling numbers are lower. However, this proposal's goal of adding two new F/Vs to the Research Fleet that operate year-round is intended to increase the temporal coverage of the Research Fleet and elevate sampling intensity.

At each sampling location, participant fishermen will use the On Deck Data app to record the date, time, location, statistical area, depth, habitat type, target species, gear type, effort deployed (see Table 1), total number/pounds of black sea bass retained and discarded, and length/sex/disposition of at least 50 black sea bass. Sampling date, time, and location will be automatically recorded by the internal tablet GPS. Standardized fish measuring boards will be used to ensure a consistent measure of fish length to the nearest centimeter. Data will be wirelessly uploaded to a MySQL database once a vessel returns to port and continually monitored by the project team. This data communication, review, management, and storage process was established and vetted during the first year of the project.

As outlined above, all participant fishermen will aim to sample black sea bass during three fishing trips per month regardless of black sea bass fishery closures. Thus, each fishing vessel will need an exempted fishing permit to retain black sea bass on deck for biological sampling when the commercial fishing season is closed. A scientific collector's permit, issued by RI DEM, will also be required for vessels fishing within state waters. These permits were successfully acquired multiple times during the first funding year of the project and will be extended through subsequent years of data collection and expanded to cover new Research Fleet participants.

Internal Data Analysis:

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As described above, the Black Sea Bass Research Fleet was able to operate effectively and deliver data in an efficient manner during the first funding year of the project, sampling over 8,439 black sea bass from 643 locations between Narragansett Bay to Hudson Canyon from November 30, 2016 to June 1, 2018. These data are summarized in the Table 2. The ultimate application of these data will be the black sea bass stock assessment. To achieve this goal, the project team has worked directly with black sea bass stock assessment scientists (Gary Shephard, NEFSC; Steve Cadrin, SMAST) since the beginning of the project to ensure that Research Fleet data is of the necessary quality and structure for utilization in the stock assessment. Communication with the above listed stock assessment scientists will continue with the proposed project. Work with the stock assessment scientists will be focused on directly incorporating the Research Fleet data into the stock assessment, creating in depth gear selectivity models for the gear types represented within the Research Fleet and exploring the creation and incorporation of CPUE indices of abundance (including gear specific indices), both of which could be directly utilized in the stock assessment. Further, the proposed work will include gear specific discard characterizations describing the length frequencies of discarded black sea bass from each gear type through both time and space, with the intention of providing a more accurate black sea bass discard rate for the stock assessment.

Table 2. Summary of data collected by the Black Sea Bass Research Fleet as of June 1, 2018.

Total Black Sea Bass Sampled	8,439
Percent Male	24.6%
Percent Female	43.8%
Percent Unknown	31.6%
Minimum Size (cm)	5
Maximum Size (cm)	63
Average Size (cm)	32.4
Percent Discarded	65.8%
Percent Retained	34.2%

In addition to the application of biological black sea bass data to the stock assessment, the data derived from the Black Sea Bass Research Fleet could also be used to characterize the catch, bycatch, and other characteristics of black sea bass in the SNE/MAB region, including gear selectivity and spatiotemporal patterns in catch composition. An additional 12 months of sampling by the Research Fleet will provide a better understanding of these seasonal and spatial dynamics as the data will now become the first multi-gear, multi-year, time series for the species.

The data collected during the first funding year of the project exhibits interesting biological and fishery trends that will continue to be monitored in subsequent years of sampling for the

proposed project. The high frequency of legal-sized, discarded, black sea bass suggests the black sea bass are primarily being discarded due to seasonal closures and/or low daily limits and not due to the minimum size limit (Figure 2). The range of the discarded length data further supports this, showing that even the largest of sampled black sea bass (receiving the highest market value) are often discarded.

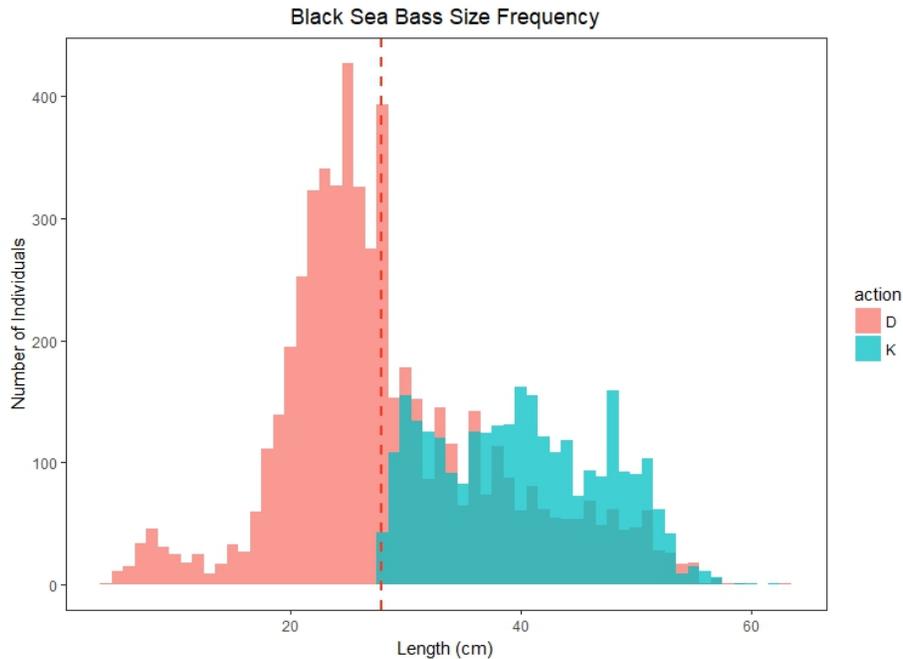


Figure 2. Size spectra of black sea bass sampled by the Research Fleet from November 30, 2016 to June 1, 2018. Red bars indicate discarded (D) fish. Blue bars indicate retained (K) fish. Red-dashed line represents the minimum legal size of 11 inches (27.94 cm).

When comparing gear selectivity between the different gear types represented within the Research Fleet, trends between discarded and retained black sea bass sizes are apparent (Figure 3 and 4). Trawl, lobster pot, and fish pot generally exhibited similarly, highly variable, size selectivity and accounted for the largest ranges of size interaction with black sea bass. Commercial rod and reel and charter vessels exhibited nearly as wide a range of size interaction with black sea bass as the previously mentioned three gear types, however did not interact with the smallest of size classes of black sea bass. Gillnet appears to be in a distinct grouping of its own and exhibits the highest selectivity amongst all represented gear types as well as interacting with the largest size classes of black sea bass exclusively. These trends which have become apparent from just the first funding year of sampling suggest there are gear specific size selectivity occurring in the black sea bass fisheries in the SNE/MAB regions. The proposed project will continue to track these trends as the time series builds with subsequent years of sampling. This type of information could have important ramifications to the stock assessment as it could help inform the selection of fleets modeled within the assessment.

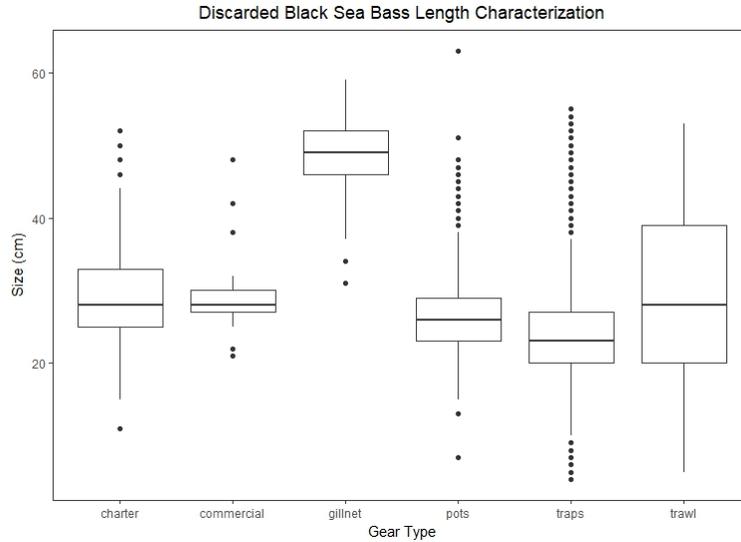


Figure 3. Size range of discarded black sea bass sampled by each gear type represented within the research fleet (n=5,558). From left to right, gear types are as follow; Charter vessel (rod and reel), Commercial rod and reel, gillnet, fish pots, lobster pots, and trawl.

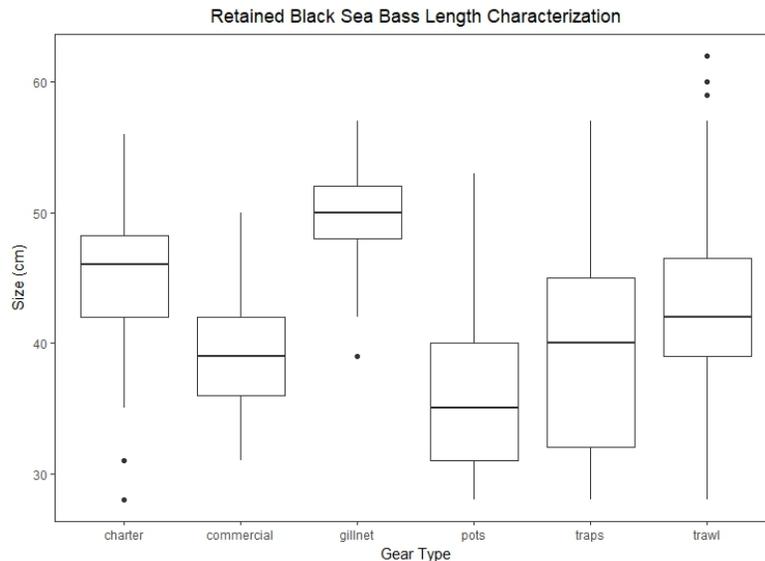


Figure 4. Size range of retained black sea bass sampled by each gear type represented within the research fleet (n=2,881). From left to right, gear types are as follow; Charter vessel (rod and reel), Commercial rod and reel, gillnet, fish pots, lobster pots, and trawl.

During the third year of the project, the project team will focus primarily on the refinement of analyses established in Year 1 and 2 for application to the stock assessment including: size spectra, sex ratios, catch per unit effort (CPUE), black sea bass retention and discard rates, seasonal activity of Research Fleet, and gear selectivities. Specifically, internal data analysis questions proposed during the past funded year of the project were: 1) Are there spatial (latitudinal) patterns in the length frequency or sex ratio of black sea bass?, 2) Are there

seasonal differences in black sea bass catch composition (length frequency and sex ratio)?, 3) Are different life stages of black sea bass apparent in commercial fisheries catch in specific areas or at different times of year?, and 4) What are the selectivities (min, max, mean length) of different gear types (trawl, fish pots, gillnet, lobster/crab pot, rod and reel) that harvest black sea bass? Year 3 analyses will build upon the initial results from exploration of these questions. The establishment of gear type selectivity regressions comparing different gear types as well as multiple years of Research Fleet data will serve as the primary and direct input to the next black sea bass stock assessment.

The open-source statistical software package R will be used for data analysis. Length frequencies, black sea bass length gear selectivities, spatial and seasonal sex ratio regression models, and catch rate patterns will all be updated based on the protocols established in year 1 and 2 of the project to further analyze seasonal trends as well as compare data from year to year.

In addition to further addressing the aforementioned research questions, the project team will also explore novel fishery dependent indices for the black sea bass stock assessment, as time permits. Building upon the analytical techniques established in Years 1 and 2, data will continue to be standardized from the disparate gear types represented within the Research Fleet through generalized linear modeling approaches and/or hierarchical modeling techniques to allow for more direct communication into the black sea bass stock assessment.

Outreach and Education

Education, outreach, and ongoing communication are considered to be an integral part of the overall work plan for the proposed project. These components of the proposed project support the goal of fostering collaborative working partnerships among scientists, managers, and members of the fishing industry through all phases of research, from the fine-tuning of sampling strategies through the analysis and sharing of data and results.

The primary outreach/education goal of the proposed project is to share and disseminate information on two topics: 1) the lessons learned from utilizing modern technology and the participation of fishermen in a research fleet approach to collect and relay much needed data to inform stock assessments and ultimately management measures for the sustainability of economically important species; and 2) the findings from analysis of the black sea bass catch, bycatch, and biological databases derived from this project.

A secondary goal is to share and disseminate project information to a variety of interest groups including: 1) commercial fishing industry members; 2) fisheries scientists and managers based in state/regional/federal agencies; 3) outside researchers who will utilize this information to inform their own research efforts in the region; and 4) other interested parties who are seeking information on new data collection/ocean monitoring techniques and approaches, and/or trends in black sea bass abundance and distribution in the SNE/MAB region.

There are a number of work elements embedded in the project work plan that are aimed at specifically addressing outreach and education goals, including:

1. Ongoing communication with project team members, including the members of the Black Sea Bass Research Fleet through personal meetings, group meetings, e-mail briefings, and phone conversations. Through the first funding year, annual Research Fleet meetings were held. The CFRF hosts all Research Fleet members, PIs, project staff, and steering committee members to receive feedback on the data collection process and present trends and analyses of the past years' worth of data. These Fleet meetings have been invaluable for receiving project feedback and as well as forming relationships between the fishing industry and managers and scientists. The same meeting format established during Year 1 of funding will be applied to the proposed project.
2. Periodic project briefings to key individuals outside the project team, including ASMFC, MAFMC, NMFS NEFSC, and NMFS GARFO staff, members of the black sea bass fishing fleet, and interested others through direct e-mail/mail correspondence, including periodic newsletters describing the project progress.
3. Regular postings of project information on the CFRF website, including descriptions of the fishermen involved, the equipment being used, the type of data being collected, and findings, as this information becomes available over the course of the project (www.cfrfoundation.org/black-sea-bass-research-fleet).
4. Organization of a research session at the end of the project involving managers, scientists, and members of the commercial and recreational fishing industries to share project findings and discuss experiences and results.
5. Issuance and distribution of a written summary report.
6. Participation in professional conference(s) to share project methods, findings, and conclusions.

Geographic Location:

At-sea sampling will be conducted within the northern Atlantic black sea bass stock area (SNE/MAB region), potentially including statistical areas 521 to 631. The final distribution of at-sea data collection will depend on the commercial fishing locations selected by participant fishermen. Project administration, and data management and analyses will be conducted at the Commercial Fisheries Research Foundation office in Kingston, Rhode Island and the RI DEM marine laboratory in Jamestown, Rhode Island.

Project History Table:

<u>Funding Year</u>	<u>Title</u>	<u>Original Project Dates</u>	<u>Extension Through</u>	<u>Funded Amount</u>	<u>Total Project Cost</u>	<u>Description</u>
2016	Advancing Fishery Dependent Data Collection for Black Sea Bass (<i>Centropristis striata</i>) in the Southern New England and Mid-Atlantic Region Utilizing Modern Technology and a Fishing Vessel Research Fleet Approach	September 1, 2016 – August 31, 2018*	N/A	\$137,827.00	\$203,072.00	Piloted the research fleet technique for collection of fishery dependent catch, effort, bycatch, and biological data in the multi-gear black sea bass fishery
2018	Advancing Fishery Dependent Data Collection for Black Sea Bass (<i>Centropristis striata</i>) in the Southern New England and Mid-Atlantic Region Utilizing Modern Technology and a Fishing Vessel Research Fleet Approach	May 1, 2018 – May 31, 2019	N/A	\$135,648.00	\$187,949.00	Maintained the research fleet fishery dependent data collection of catch, effort, bycatch, and biological data in black sea bass fishery and expanded Research Fleet by two fishing vessels

**Note: The original project included eight months of sampling by the Black Sea Bass Research Fleet (December 2016 to July 2017), but sampling was extended through May 2018 due to reduced Research Fleet interaction with black sea bass during winter months. The August 2018 end date noted for Year 1 funding represents the total 24-month award period of the first year of funding.*

Milestone Schedule:

MONTH 1 June	MONTH 2 July	MONTH 3 August	MONTH 4 September	MONTH 5 October	MONTH 6 November	MONTH 7 December	MONTH 8 January	MONTH 9 February	MONTH 10 March	MONTH 11 April	MONTH 12 May
Research Fleet data collection	Research Fleet data collection	Research Flet data collection	Research Fleet data collection	Research Fleet data collection	Research Fleet data collection	Research Fleet data collection	Research Fleet data collection	Research Fleet data collection	Research Fleet data collection	Research Fleet data collection	Research Fleet data collection
Renew permits	Renew permits						RI DEM Permit Reporting				
Purchase & prepare sampling equipment for new F/Vs	Distribute sampling equipment	Maintain sampling equipment	Maintain sampling equipment	Maintain sampling equipment	Maintain sampling equipment	Maintain sampling equipment	Maintain sampling equipment	Maintain sampling equipment	Maintain sampling equipment	Maintain sampling equipment	Maintain sampling equipment
Maintain data collection app, server, and database											
Data QA/QC, review, and analysis											
	Data Reports to Fleet Participants			Data Reports to Fleet Participants			Data Reports to Fleet Participants			Data Reports to Fleet Participants	
	Share data with ACCSP, ASMFC, MAFMC					Share data with ACCSP, ASMFC, MAFMC				Share data with ACCSP, ASMFC, MAFMC	
						Write progress report			Write final report	write final report	Write final report
Maintain project website; Outreach											

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Project Accomplishment Measurement (Metrics and Achieved Goals):

Project Goal		Metric 1	Metric 2	Metric 3	Metric 4	Metric 5	Metric 6	Metric 7	Metric 8	Metric 9	Metric 10
Collection & communication of biological and fishery data for black sea bass (BSB)	Year 3 Proposal Metrics	Maintenance of BSB data collection app, wireless data transfer, and SQL database	Use of BSB data collection app by participant fishermen	Maintenance of ten existing Research Fleet participants and addition of two new participants	Twelve months of biological fishery data collection for BSB	Collection of 21,600 measurements of BSB sex and length over twelve months	Collection of 432 records of BSB catch and discard rates over 12 months	Collection of 432 records of BSB fishing location, depth, habitat, gear type, effort, and catch over 12 months	Compilation of BSB biological and fishery data into SQL database	Compilation and distribution of quarterly data reports to Research Fleet participants	Formatting and distribution of BSB biosamples data to ACCSP, ASMFC, and MAFMC
	Year 2 Proposal Metrics	Maintenance of BSB data collection app, wireless data transfer, and SQL database	Use of BSB data collection app by participant fishermen	Maintenance of eight existing Research Fleet participants and addition of two new participants	Twelve months of biological fishery data collection for BSB	Collection of 18,000 measurements of BSB sex and length over twelve months	Collection of 360 records of BSB catch and discard rates over 12 months	Collection of 360 records of BSB fishing location, depth, habitat, gear type, effort, and catch over 12 months	Compilation of BSB biological and fishery data into SQL database	Compilation and distribution of quarterly data reports to Research Fleet participants	Formatting and distribution of BSB biosamples data to ACCSP, ASMFC, and MAFMC
	Year 1 Achievement	Development of the On Deck Data app for BSB data collection. Server processes, and SQL database	Piloting of the BSB data collection app by participant fishermen	Solicitation, selection, and training of eight BSB Research Fleet participants	17 months of biological and fishery data collection for BSB (as of June 2018)	Collection of 8,439 measurements of BSB length and sex over the 17 months	Collection of 643 records of BSB catch and discard rates	Collection of 643 records of BSB fishing location, depth, habitat type, gear type, effort, and catch	Compilation of all BSB data into SQL database (bsb_fleet, bsb_session, bsb_sample, bsb_random tables)	Compilation and distribution of quarterly data reports to Research Fleet participants	Formatting and distribution of BSB biosamples data to ACCSP in June and December 2017
Reduce uncertainties in BSB stock assessment	Year 3 Proposal Metrics	Provide BSB data from areas, habitats, and times of year not covered by standard survey techniques	Distribution of BSB data to ACCSP, ASMFC, MAFMC, and NEFSC	Communication of data and updated project findings to BSB stock assessment working group	Utilization of data by BSB stock assessment working group	Exploration of fishery dependent indices of abundance for BSB					
	Year 2 Proposal Metrics	Provide BSB data from areas, habitats, and times of year not covered by standard survey techniques	Distribution of BSB data to ACCSP, ASMFC, MAFMC, and NEFSC	Communication of data and project findings to BSB stock assessment working group	Utilization of data by BSB stock assessment working group	Exploration of fishery dependent indices of abundance for BSB					
	Year 1 Achievement	Provided BSB data from months, areas, and habitats not sampled by existing surveys	Distributions of BSB data to ACCSP in June 2017 and December 2017	Communication with BSB stock assessment scientists (Gary Shepard NEFSC and Steve Cadrin SMAST)							

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Asses spatial & temporal patterns in BSB fishery and catch	Year 3 Proposal Metrics	Analyze trends in CPUE between years for gear types and locations	Analyze trends in discard rates between years based on gear types and locations	Monitor size and sex distributions of retained BSB catches between years	Update of BSB length frequencies by gear type, month, and location	Compare inter annual differences in Kolmogorov-Smirnov tests of BSB length frequency by gear type, month, and location	Update if BSB sex ratio logistic regression models from Year 2	Update of BSB catch rates and standardized CPUE GLMs established during Year 2	Publication of peer reviewed paper		
	Year 2 Proposal Metrics	Calculation of CPUE for different gear types, times of year, and locations	Calculation of discard rates for different gear types, times of year, and locations	Calculation of size and sex distributions of retained BSB catch	Construction of BSB length frequency by gear type, month, and location	Completion of Kolmogorov-Smirnov tests of BSB length frequency by gear type, month, and location	Completion of logistic regression models of BSB sex ratios by gear type, time of year, and location	Development of GLMs of BSB catch rates and standardized CPUE	Publication of peer reviewed paper		
	Year 1 Achievement	Preliminary data analysis of BSB length and sex data	Development of size spectra for discarded and retained BSB	Creation Research Fleet sampling coverage maps	Preliminary exploration of spatial and temporal trends in BSB size spectra						
Demonstrate model approach for cost efficient fishery dependent data collection	Year 3 Proposal Metrics	Utilization of modern technology to collect biological data during routine fishing practices	Approval of project approach, protocols, and outcomes by BSB scientists, managers, and fishermen	Application of data to stock assessment and resource management	Maintenance of communication between all project partners, participants, and end users	Development of working partnerships between participating fishermen, scientists, and managers	Completion of projects tasks within project budget	Approval of project progress from steering committee members			
	Year 2 Proposal Metrics	Utilization of modern technology to collect biological data during routine fishing practices	Approval of project approach, protocols, and outcomes by BSB scientists, managers, and fishermen	Application of data to stock assessment and resource management	Maintenance of communication between all project partners, participants, and end users	Development of working partnerships between participating fishermen, scientists, and managers	Completion of projects tasks within project budget	Approval of project progress from steering committee members			
	Year 1 Achievement	Successful utilization of modern technology to collect biological BSB data during routine fishing practices	Approval of project approach and protocols by BSB scientists, managers, and industry (Project Steering Committee)	Communication with BSB stock assessment scientists (Gary Shepard NEFSC, Steve Cadrin SMAST)	Maintenance of communication between all project partners, participants, and end users	Development of working partnerships between participating fishermen, scientists, and managers	On track to complete projects tasks within project budget	Establishment of a project steering committee consisting of state and federal fisheries scientists and managers and members of the fishing industry	Development of project website, media articles, and outreach materials		

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Cost Summary and Funding Transition Plan:

This proposal represents a 2% cost reduction from Year 2’s proposal of a similar scope. The drop is due primarily to a reduction in the personnel costs. These changes are reflected in the CFRF sub-contract (section F of the Budget Table) and are explained below.

- Personnel Costs were reduced by 9% mainly due to a reduction in the CFRF Research Scientist support.
- Other Costs were increased by 4% due to the expansion of the research fleet by two vessels. The fishing vessel stipend remains the same at \$600 per month per vessel.
- Total Direct Costs decreased by 2% overall.

The CFRF has pursued funding from a variety of sources for the Black Sea Bass Research Fleet and will continue to do so to ensure the long-term utility of the data to the assessment and management of this data poor species. The CFRF no longer has internal funds to cover research projects or issue RFPs, as the multi-year NOAA awards that enabled the CFRF to operate such programs expired in December 2015. Since then, the CFRF has relied exclusively on competitive research awards to support all of its operations, collaborations, and research projects.

Budget Table:

TOTAL	Year 3 (Maintenance)		
	Proposal	In-Kind	Total
	\$ 132,749	\$ 36,284	\$ 169,033
% Contribution by Funding Source	79%	21%	100%

Object Class Category	Proposal	In-Kind	Total
A Personnel			
- RI DEM - Jason McNamee		\$ 5,347	\$ 5,347
- RI DEM - Contractor		\$ 4,547	\$ 4,547
- RI Dem - Intern		\$ 2,500	\$ 2,500
Total RI DEM Personnel Costs	\$ -	\$ 12,394	\$ 12,394
B Fringe Benefits	\$ -	\$ 4,214	\$ 4,214
C Travel	\$ -	\$ -	\$ -
D Equipment	\$ -	\$ -	\$ -
E Supplies	\$ -	\$ -	\$ -

F Contractual - CFRF			
a. Personnel			
- Executive Director - Anna Mercer	\$ 9,240		\$ 9,240
- Research Scientist - Thomas Heimann	\$ 28,600		\$ 28,600
- Business Manager	\$ 4,400		\$ 4,400
Total CFRF Personnel Costs	\$ 42,240	\$ -	\$ 42,240
b. Fringe Benefits	\$ 4,224	\$ -	\$ 4,224
c. Travel	\$ 3,000	\$ -	\$ 3,000
d. Equipment	\$ -	\$ -	\$ -
e. Supplies			
- Research Supplies	\$ 2,000		\$ 2,000
- Office Supplies	\$ 1,000		\$ 1,000
Total Supplies	\$ 3,000	\$ -	\$ 3,000
f. Contractual			
- Programmer for On-Deck Data database	\$ 2,000	\$ -	\$ 2,000
Total Contractual	\$ 2,000	\$ -	\$ 2,000
g. Construction	\$ -	\$ -	\$ -
h. Other Costs			
- Fishing Vessel Stipends	\$ 56,160	\$ -	\$ 56,160
- Executive Assistance	\$ -	\$ 5,000	\$ 5,000
Total Other Costs	\$ 56,160	\$ 5,000	\$ 61,160
i. Total Direct Charges	\$ 110,624	\$ 5,000	\$ 115,624
j. Indirect Charges			
- Proposed at 20% of CFRF Direct Charges	\$ 22,125	\$ 1,000	\$ 23,125
- Approved Rate Differential proposed as In-Kind	\$ -	\$ 10,577	\$ 10,577
Total Indirect Charges	\$ 22,125	\$ 11,577	\$ 33,702
k. Total CFRF Costs	\$ 132,749	\$ 16,577	\$ 149,326
G Construction	\$ -	\$ -	\$ -
H Other Costs	\$ -	\$ -	\$ -
I Total Direct Costs	\$ 132,749	\$ 33,185	\$ 165,934
J Indirect Charges	\$ -	\$ 3,099	\$ 3,099
K Total Proposal Costs	\$ 132,749	\$ 36,284	\$ 169,033

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Budget Justification – Year 3 (Maintenance Project, Proposed):

The total proposed federal budget requested by the Rhode Island Department of Environmental Management (RI DEM) and the Commercial Fisheries Research Foundation (CFRF) for all components of the work is \$132,749 for 12 months. The voluntary non-federal match funds provided by the RI DEM and CFRF is \$36,284. The total proposal value is \$169,033. The proposed timeframe is June 1, 2019 to May 31, 2020.

The proposed budget justification for object class category items include the following:

- A. Personnel: \$12,394 In-Kind (RI DEM). RI DEM staff will play an advisory/support role in the proposed project, providing guidance on research protocols, assisting with statistical analyses as needed, exploring gear-specific indices of abundance and alternative modeling approaches as time permits, support in the procurement and storage of samples, and communicating project results to fishery governance system via existing participation in technical committees and working groups.

- B. Fringe Benefits: \$4,214 In-Kind (RI DEM). Fringe costs are charged on RI DEM FTEs only. RIDEM Annual Fringe benefit rates are:

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%	

- C. Travel: There are no direct travel charges.

- D. Equipment: There are no direct equipment charges.

- E. Supplies: There are no direct supplies charges.

- F. Contractual: The CFRF will conduct most of the work involved in this project, with administrative and technical assistance provided by RI DEM as In-Kind. These services will be charged to the grant as contractual costs and are outlined below to provide more detail as to how the funding will be used:
 - a) Personnel: \$42,240 federal. This includes the wages for the following CFRF personnel for time spent working directly on the project:
 - 1. Executive Director – Proposed at 10% of time for 12 months = \$9,240
 - 2. Research Scientist – Proposed at 50% of time for 12 months = \$28,600.The CFRF Research Scientist is the primary individual responsible for fleet organization, maintenance, and support, as well as data management, communication, and analysis.

3. Business Manager – Proposed at 10% of time for 12 months = \$4,400
- b) Fringe Benefits: \$4,224 federal. This includes a percentage for payroll taxes and worker’s compensation insurance prorated in accordance with % of salary paid from program. Benefits proposed at 10% of personnel costs based on historical analysis.
- c) Travel: \$3,000 federal. Travel costs include travel support (mileage) for project staff to provide support at docks to Research Fleet participants, to participate in meetings with the Research Fleet, stock assessment scientists, and managers, and to participate in one industry/professional conference for two personnel to share and disseminate project methods, findings, and conclusions.
- d) Equipment: \$0. There will be no equipment costs on this project.
- e) Supplies: \$3,000 federal. This category includes research supplies and project office supplies.
1. Research Supplies: \$2,000 - Costs of tablets, waterproof cases, stylus & fish measuring board. Proposed at \$500 per set x 4 vessels (2 new vessels and 2 existing fleet vessels) for the duration of the project. The two sets of sampling equipment for existing Research Fleet vessels are replacements for equipment that is damaged.
 2. Office Supplies: \$1,000 – Costs to cover database storage and website fees (\$25/month), project office and meeting supplies, etc.
- f) Contractual: \$2,000 federal. This includes costs associated with:
1. Programmer (\$2,000 - federal) - CFRF hiring an outside computer programmer to maintain the On Deck Data application and database coding for data relay and storage, to address any issues that arise, and to update the app to maintain functionality.
- g) Construction: There are no construction costs.
- h) Other Costs: \$56,160 federal + \$5,000 match = \$61,160. This includes:
1. Fishing vessel stipends (federal) for 12 vessels for 12 months at \$600 per month. A fleet of 12 vessels will be utilized each month to obtain the proposed biological samples. The total stipend is computed at 65% due to fluctuations in vessel sampling associated with weather, vessel maintenance, and seasonal black sea bass distribution.
 2. Executive Assistance (in-kind match) covers the administration assistance for the project (including, review of fleet applications and invoices, work agreements, progress/final reports) by the CFRF President and Vice President, who provide these services at no cost. Costs proposed at \$250 per day for 10 days for 2 people over the duration of the project.
- i) Total Direct Charges: \$110,624 federal + \$5,000 in-kind = \$115,624 total. This is the total direct charges for cost items a-h.

j) Indirect Charges: \$22,125 federal + \$11,577 in-kind = \$33,702 total. Indirect general and administrative costs are calculated as 20.0% of federally requested Total Direct Charges (\$110,624). Indirect general and administrative costs are used to cover costs associated with the general operations of the CFRF including accounting services, legal services, maintenance of office space, liability insurance, payroll fees, phone/fax lines, internet service, board member participation, etc. The CFRF's FY2018 Indirect Cost Rate Agreement dated 1/18/2018 is for 29.32% based on FY2017 actual costs. The 9.32% indirect cost rate differential is a voluntary nonfederal match by CFRF. CFRF has historically averaged around 20% of Indirect G&A which is proposed for this project.

k) Total Proposal Costs: \$132,749 Federal + \$16,577 In-Kind = \$149,326 Total.

G. Construction. There are no construction costs on this grant

H. Other Costs. There are no other costs associated with this grant.

I. Total Direct Charges: \$132,749 Federal + \$49,202 In-Kind = \$184,850 total. This is the total direct charges for cost items A-H.

J. Indirect Charges: \$3,099 In-Kind (RIDEM). Indirect charges are charged on RIDEM Salaries only. The Negotiated Indirect Cost Rate for FY2017 is 25%. (Total personnel is \$12,394 x 25% = \$3,099.)

K. Total Proposal Costs: \$132,749 Federal + \$36,284 In-Kind = \$169,033 Total.

Budget Justification – Year 2 (New Project, Awarded):

The total proposed federal budget requested by the Rhode Island Department of Environmental Management (RI DEM) and the Commercial Fisheries Research Foundation (CFRF) for all components of the work is \$135,648 for 12 months. The voluntary non-federal match funds provided by the RI DEM and CFRF is \$52,301. The total proposal value is \$187,949. The proposed timeframe is May 1, 2018 to April 30, 2019.

The proposed budget justification for object class category items include the following:

A. Personnel: \$12,394 In-Kind (RI DEM). RI DEM staff will play an advisory/support role in the proposed project, providing guidance on research protocols, assisting with statistical analyses as needed, exploring gear-specific indices of abundance and alternative modeling approaches as time permits, support in the procurement and storage of samples, and communicating project results to fishery governance system via existing participation in technical committees and working groups.

B. Fringe Benefits: \$4,214 In-Kind (RI DEM). Fringe costs are charged on RI DEM FTEs only. RIDEM Annual Fringe benefit rates are:

Retirement 24%	Deferred Compensation 0.4%
FICA 6.2%	Medicare 1.45%

Rhode Island Department of Environmental Management & Commercial Fisheries Research Foundation
ACCSP Funding Proposal (Maintenance Project – Year 3): Fishery Dependent Sampling for Black Sea Bass (*Centropristis striata*)
Proposal components that address the ranking criteria are underlined and a summary is provided on pages 27-29.
Changes from the initial proposal are highlighted in **yellow**.

Health care \$21,937/year
Vision Mercer \$165/year
Retiree Health 6.75%

Dental \$1,132/year
Assessed Fringe 4.25%

- C. Travel: There are no direct travel charges.
- D. Equipment: There are no direct equipment charges.
- E. Supplies: There are no direct supplies charges.
- F. Contractual: The CFRF will conduct most of the work involved in this project, with administrative and technical assistance provided by RI DEM as In-Kind. These services will be charged to the grant as contractual costs and are outlined below to provide more detail as to how the funding will be used:
 - a) Personnel: \$46,400 federal. This includes the wages for the following CFRF personnel for time spent working directly on the project:
 - 1. Executive Director – Proposed at 10% of time for 12 months = \$9,240
 - 2. Research Scientist – Proposed at 50% of time for 12 months = \$32,760.
The CFRF Research Scientist is the primary individual responsible for fleet organization, maintenance, and support, as well as data management, communication, and analysis.
 - 3. Business Manager – Proposed at 10% of time for 12 months = \$4,400
 - b) Fringe Benefits: \$4,640 federal. This includes a percentage for payroll taxes and worker's compensation insurance prorated in accordance with % of salary paid from program. Benefits proposed at 10% of personnel costs based on historical analysis.
 - c) Travel: \$3,000 federal. Travel costs include travel support (mileage) for project staff to provide support at docks to Research Fleet participants, to participate in meetings with the Research Fleet, stock assessment scientists, and managers, and to participate in one industry/professional conference for two personnel to share and disseminate project methods, findings, and conclusions.
 - d) Equipment: \$0. There will be no equipment costs on this project.
 - e) Supplies: \$3,000 federal. This category includes research supplies and project office supplies.
 - 1. Research Supplies: \$2,000 - Costs of tablets, waterproof cases, stylus & fish measuring board. Proposed at \$500 per set x 4 vessels (2 new vessels and 2 existing fleet vessels) for the duration of the project. The two sets of sampling equipment for existing Research Fleet vessels are replacements for equipment that is damaged.

2. Office Supplies: \$1,000 – Costs to cover database storage and website fees (\$25/month), project office and meeting supplies, etc.
- f) Contractual: \$2,000 federal + \$19,707 match = \$21,707 total. This includes costs associated with:
1. Programmer (\$2,000 - federal) - CFRF hiring an outside computer programmer to maintain the On Deck Data application and database coding for data relay and storage, to address any issues that arise, and to update the app to maintain functionality.
- g) Construction: There are no construction costs.
- h) Other Costs: \$54,000 federal + \$5,000 match = \$59,000. This includes:
1. Fishing vessel stipends (federal) for 10 vessels for 12 months at \$600 per month. A fleet of 10 vessels will be utilized each month to obtain the proposed biological samples. The total stipend is computed at 75% due to fluctuations in vessel sampling associated with weather, vessel maintenance, and seasonal black sea bass distribution.
 2. Executive Assistance (in-kind match) covers the administration assistance for the project (including, review of fleet applications and invoices, work agreements, progress/final reports) by the CFRF President and Vice President, who provide these services at no cost. Costs proposed at \$250 per day for 10 days for 2 people over the duration of the project.
- i) Total Direct Charges: \$113,040, federal + \$5,000 in-kind = \$118,040 total. This is the total direct charges for cost items a-h.
- j) Indirect Charges: \$22,608 federal + \$27,594 in-kind = \$50,202 total. Indirect general and administrative costs are calculated as 20.0% of federally requested Total Direct Charges (\$113,040). Indirect general and administrative costs are used to cover costs associated with the general operations of the CFRF including accounting services, legal services, maintenance of office space, liability insurance, payroll fees, phone/fax lines, internet service, board member participation, etc. The CFRF's FY2017 Indirect Cost Rate Agreement dated 4/7/17 is for 42.53% based on FY2016 actual costs. The 22.53% indirect cost rate differential is a voluntary nonfederal match by CFRF. CFRF has historically averaged around 20% of Indirect G&A which is proposed for this project.

G. Construction. There are no construction costs on this grant

H. Other Costs. There are no other costs associated with this grant.

I. Total Direct Charges: \$135,648 Federal + \$49,202 In-Kind = \$184,850 total. This is the total direct charges for cost items A-H.

- J. Indirect Charges: \$3,099 In-Kind (RIDEM). Indirect charges are charged on RIDEM Salaries only. The Negotiated Indirect Cost Rate for FY2017 is 25%. (Total personnel is \$12,394 x 25% = \$3,099.)
- K. Total Proposal Costs: \$135,648 Federal + \$52,301 In-Kind = \$187,949 Total.

Summary of Proposal for Ranking Purposes

Type: Maintenance (Year 3)

Primary Program Priorities:

This project follows fishery-dependent sampling protocols to collect black sea bass catch and effort, biological, and bycatch data from the SNE/MAB region. The percentage of project effort devoted to each of these modules is as follows: 40% Biological, 30% Catch and Effort, 30% Bycatch. Thus, Biological sampling is the primary program priority. The estimated project effort devoted to biological sampling reflects the collection of black sea bass length and sex data by participant vessels during three trips per month for twelve months (approximately 432 trips and 21,600 black sea bass total).

Project Quality Factors:

Multi-Partner/Regional impact including broad applications:

The results of the proposed project have regional impacts and broad applications, as black sea bass are expanding to inhabit, and potentially be harvested from, the majority of the US east coast. Furthermore, the social and economic implications of this work could be extensive, as project data contributes to the improvement of the northern Atlantic black sea bass stock assessment and potentially the creation of new economic opportunities. From a collaboration perspective, this project provides a unique opportunity for the RI DEM and CFRF to maintain a fisherman-based research fleet to address ACCSP priorities, drawing upon networks of partners in industry, fisheries research, and management. This project will help RI DEM and CFRF demonstrate that, with support from ACCSP, they have the ability to bring stakeholders together, outside of a contentious management environment, to collect, communicate, and analyze critically needed data to address the data needs of the data poor northern Atlantic black sea bass.

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

This proposal is for a one-year study to continue an industry-based research fleet approach to biological, catch, and bycatch sampling for northern Atlantic black sea bass. The project was widely successful in its first year, with 8,439 black sea bass sampled during the first funding year. Year 2 funding is expected to result in increased sampling

rates and coverage as the Research Fleet was able to expand by two vessels while reducing overall costs. An additional year of funding would result in the first multiple year, year-round biosamples database for this data poor species. Ultimately, long term maintenance of this project will provide invaluable data to the ACCSP, ASMFC, and MAFMC, and improve the assessment and management of the northern Atlantic black sea bass resource. The CFRF and RI DEM will continue to pursue other sources of funding to support the Research Fleet sampling efforts long-term.

In-kind contribution: The total project cost is \$169,033. In-kind contributions provided by RI DEM and CFRF are \$12,394 and \$16,577, respectively. Thus, RI DEM and CFRF will provide 21% of total project costs.

Improvement in data quality/quantity/timeliness:

The proposed project addresses the critical need to improve the quality, quantity, and timeliness of biological, catch and effort, and bycatch data for the northern Atlantic black sea bass, which the ACCSP Biological Review Panel identified as having inadequate biological sampling and high stakeholder priority, resulting in the highest-ranking priority score. Ultimately, the proposed project will help to meet ACCSP's mission of improving data quality for fisheries science by contributing to a single data management system that will meet the needs of fishery managers, scientists, and fishermen.

Potential secondary modules as by-products:

The potential secondary modules are catch and effort (30 %) and bycatch sampling (30%). The estimated effort devoted to the catch and effort module is based upon sampling during the roughly 156 days of open black sea bass fishing season in Rhode Island in 2016 (42% of the year). The project effort allocated to the bycatch module reflects sampling efforts conducted while the commercial black sea bass fishing season is closed and while participant vessels are targeting other species but still interacting with black sea bass as bycatch.

Impact on stock assessment:

The northern Atlantic black sea bass stock assessment was recently approved for management (December 2016), but the new model requires spatially and temporally comprehensive data that is currently lacking. Thus, the proposed project aims to provide critically needed biological data from retained and discarded black sea bass, and fishery data from a variety of gear types to continue to evolve and improve the black sea bass stock assessment. The project team will also explore novel fishery dependent indices for the black sea bass stock assessment, as time permits.

The Research Fleet collected data has the potential to directly improve the federal stock assessment in a number of ways including reducing the uncertainty in recruitment rates,

gear type specific CPUE indices of abundance, and gear (and location) specific discard rates.

Currently, the indices of abundance relied upon in the black sea bass stock assessment come primarily from the NEFSC winter and spring trawl survey, Northeast Area Monitoring and Assessment Program (NEAMAP) survey trawls, recreational catch per effort, and is supplemented with various state trawl survey indices of abundance (NEFSC 2017). The utility of the Research Fleet data in this respect is the creation of gear-type specific CPUE indices of abundance. Whereas the stock assessment currently only delineates between trawl and non-trawl gear types, after building a multiple-year time-series the Research Fleet data could potentially be utilized to create a variety of CPUE indices of abundance (trawl, gillnet, lobster pot, rod & reel, fish pot, and multigear). Further, the Research Fleet data has the potential to be directly used to create a discard characterization for the northern stock sub-unit and reduce uncertainties in the annual total fishery removals. Finally, due to the nature of the Research Fleet being comprised entirely of commercial and recreational fishing vessels, from a variety of gear types, the data collected is spatially and temporally expansive across the northern black sea bass sub unit in locations and times of year not covered by any of the federal or state survey programs utilized in the stock assessment. Therefore, there is the potential to reduce the uncertainties in recruitment rates within the northern sub unit as the Research Fleet is able to record presence and absences of juvenile and young of the year black sea bass in entirely unsampled locations and times of year.

Innovative:

The innovative and cost-effective nature of the proposed project, which relies upon collaboration between a Program partner and the fishing industry, can provide an opportunity for fishermen to constructively engage in the data collection process for black sea bass and provide a model for future data collection efforts in other regions and fisheries. In addition to demonstrating a novel sampling approach, the proposed project also leverages modern technology to improve the efficiency of data collection and communication.

Properly Prepared:

This proposal follows the guidelines provided in the ACCSP Funding Decision Document.

Principal Investigators:

The co-Principal Investigators of the proposed project are: Jason McNamee (Chief, RI DEM Marine Fisheries) and Anna Malek Mercer (Executive Director, CFRF). Curriculum vitae are provided in the following pages.

Jason McNamee will play an advisory/support role in this project, given his existing commitments at the RI DEM Division of Marine Fisheries. More specifically, Jason will provide advice for sampling protocols, act as a liaison to the existing black sea bass assessment/management infrastructure and assist with data analysis as his time permits (data review/analysis will primarily be the role of the CFRF Research Associate). In his role as both a technical committee member, and having been a member of the contracted stock assessment team for the MAFMC, Jason McNamee will be able to help the project with capturing the correct information and making sure this information is formatted appropriately for inclusion in future northern Atlantic black sea bass stock assessment projects.

Anna Mercer, CFRF Executive Director, will provide administrative and technical support throughout the project, including staff oversight and report composition. She will also assist the CFRF Research Associate with Research Fleet management, data analysis, and outreach tasks.

Thomas Heimann, CFRF Research Associate, will be the primary individual responsible for Research Fleet maintenance and support, as well as data management, communication, and analysis. As the current CFRF Program Administrator for the Black Sea Bass Research Fleet, Heimann has gained extensive experience with the work involved in initiating and supporting an industry-based research fleet.

Jason Earl McNamee
519 Congdon Hill Rd
Saunderstown, RI 02874
Day Phone: 401-423-1943
Email: jason.mcnamee@dem.ri.gov

WORK EXPERIENCE

RI Department of Environmental Management 12/2002 - Present

Jamestown, RI US

Chief, Marine Resource Management

Duties:

- Management of the Marine Fisheries program for the RI Dept. of Environmental Management
- Management of a staff of 20 professionals in the field of marine fisheries
- Manage operating budgets for multiple federal grants and state accounts
- Creation of grant proposals for marine fisheries projects
- Management of the Ft Wetherill Marine Laboratory building and research vessels
- Membership on several technical panels: the New England Council Science and Statistics Committee (Chair), Atlantic States Marine Fisheries Commission Menhaden (chair), Tautog (chair), and Summer Flounder/Scup/Black Sea Bass technical and stock assessment committees, Biological and Ecological Reference Point committee
- Support to the RI Marine Fisheries Council
- Creation and administration of the RI Marine Fisheries Institute
- Principal investigator (PI) on the Narragansett Bay juvenile seine survey
- PI for the Narragansett Bay Menhaden monitoring program
- Small vessel operation
- Production and review of multiple annual technical and grant completion reports
- Perform stock assessment analyses

Skills developed: Personnel and budget management experience; Supervisory experience; Good statistical and computer skills (ADMB, R, Microsoft software, ADAPT, JMP, ASAP, Oracle Discoverer, web design); Species identification experience; Experience using water quality instrumentation (DO meter, pH meter, Gas Chromatograph, Conductivity meter, flow meter); GIS Experience (Arcview and R); Field work experience; Experience in the construction and maintenance of technical research equipment; Seine, fyke net, trawl net, gillnet, fish pot, and electroshock surveying; Small boat handling (State of Rhode Island and Coast Guard certified)

Supervisor's Name: Larry Mouradjian

Supervisor's Phone: 401-222-4700 ext. 2414

RI Department of Environmental Management 4/2000 - 12/2002

Providence US

Senior Natural Resource Specialist

Rhode Island Department of Environmental Management & Commercial Fisheries Research Foundation
ACCSP Funding Proposal (Maintenance Project – Year 3): Fishery Dependent Sampling for Black Sea Bass (*Centropristis striata*)
Proposal components that address the ranking criteria are underlined and a summary is provided on pages 27-29.
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Duties: My duties were to perform all tasks necessary to conduct and complete a Total Maximum Daily Load reports including field work, data collection and processing, and writing of the report. I also participated with other staff to help in the completion of their reports.

Skills developed: Good statistical and computer background (Microsoft software), Experience designing and implementing a personal research project, Experience preparing a federally approved Quality Assurance Protection Plan, Experience using water quality instrumentation (DO meter, pH meter, Conductivity meter), Experience in the collection of water samples for testing (biological and metals), GIS Experience (Arcview) Field work experience, Small boat handling (State of Rhode Island and Coast Guard certified), Experience in the preparation of a federally approved Total Maximum Daily Load report, Experience disseminating information to the public

Supervisor's Name: Christian Turner

Supervisor's Phone: unsure, no longer employed at RIDEM

EDUCATION

University of Rhode Island – Graduate School of Oceanography

Narragansett, RI US

PhD – 8/2018

Major: Biological Oceanography

Doctoral Dissertation Topic: Multispecies Statistical Catch-At-Age Model for a Mid Atlantic Species Complex

University of Connecticut

Groton, CT US

Masters of Science Degree - 6/2006

38 Semester Hours

Major: Biological Oceanography

University of Rhode Island

Kingston, RI US

Bachelor's Degree - 5/1996

136 Semester Hours

Major: Zoology

PROFESSIONAL PUBLICATIONS

- ASMFC Lobster stock assessment (2015), ASMFC Menhaden stock assessment (2004, 2012, 2015), ASMFC Tautog stock assessment (2006, 2011, 2015), NEFSC Summer flounder stock assessment (2011, 2013), NEFSC Scup stock assessment (2011, 2015), NEFSC Black sea bass stock assessment (2004, 2016), Interactions between the introduced Asian shore crab, *Hemigrapsus sanguineus*, and three common rocky intertidal littorine gastropods in Southern New England (MS Thesis).
- Taylor, DL, J McNamee, J Lake, CL Gervasi , and DG Palance. 2016. Juvenile winter flounder (*Pseudopleuronectes americanus*) and summer flounder (*Paralichthys dentatus*) utilization of Southern New England nurseries: Comparisons among estuarine, tidal river, and coastal lagoon shallow-water habitats. *Estuaries and Coasts*. 39:1505-1525.

Rhode Island Department of Environmental Management & Commercial Fisheries Research Foundation

ACCSP Funding Proposal (Maintenance Project – Year 3): Fishery Dependent Sampling for Black Sea Bass (*Centropristis striata*)

Proposal components that address the ranking criteria are underlined and a summary is provided on pages 27-29.

Changes from the initial proposal are highlighted in **yellow**.

Anna J. Malek Mercer, PhD

P.O. Box 278 • Saunderstown, RI • 02874 • 401-515-4662 • amalek@cfrfoundation.org

EDUCATION

Graduate School of Oceanography, University of Rhode Island (URI GSO) <i>Doctor of Philosophy in Oceanography (Fisheries Oceanography)</i>	Narragansett, RI August 2015
University of New Hampshire <i>Bachelor of Science in Biology (Marine and Freshwater Biology), Summa Cum Laude</i>	Durham, NH May 2008
School for International Training <i>Coastal Ecology and Natural Resources Management Training</i>	Zanzibar, Tanzania December 2006

PREVIOUS EXPERIENCE (2008 - present)

November 2015-present: Executive Director, Commercial Fisheries Research Foundation, Kingston, RI

- Responsible for developing and administering all functions of the Foundation, including implementation of collaborative fisheries research projects, industry and public outreach, financial management, staff oversight, networking efforts, and fundraising

January 2012-October 2015: Program Administrator, Commercial Fisheries Research Foundation, Kingston, RI

- Developed and managed the Lobster and Jonah Crab Research Fleet and Shelf Research Fleet including: research protocol development, technology coordination/application, permit acquisition, fishing industry outreach and training, at-sea equipment deployment, and database QA/QC.
- Conducted research to identify the research needs and approaches for assessing the potential impacts of offshore wind farm development on fisheries resources in the Northeast region
- Assisted with development of research proposals, CFRF web presence, and project reports

June 2013-present: Field Coordinator, Southern New England Cooperative Ventless Trap Survey, URI GSO, RI

- Coordinated and conducted a fixed gear survey to assess the American lobster population in the Rhode Island/Massachusetts Wind Energy Area, including: development of research protocol, selection and distribution of sampling gear, training of sea-sampling team, coordination and participation in at-sea sampling, database development & management, statistical analysis, and publication composition

August 2009-present: Doctoral Research Scientist, URI GSO, Narragansett, RI

- Led an investigation of the spatial distributions, population structures, and interactions of demersal fish and their habitat in Rhode Island's coastal waters to inform ecosystem-based marine spatial planning
- Carried out field work (otter trawls, beam trawls, and underwater videography aboard commercial fishing vessels), laboratory work (fish stomach content analysis and stable isotope analysis), data management and analysis, and manuscript development for compilation into a doctoral dissertation

August 2009-present: Outreach Scientist, URI Office of Marine Programs, Narragansett, RI

- Lead educational fish trawls aboard the R/V Cap'n Bert for school groups and journalists
- Prepare and present oceanography lectures and exploratory activities for groups of all ages

August 2009-August 2011: Fish Trawl Assistant, URI Graduate School of Oceanography, Narragansett, RI

- Conducted weekly trawl surveys and water column profiles at two sites in Narragansett Bay, RI
- Managed the GSO Fish Trawl database and fulfilled data requests for state and federal agencies

January-May 2009: Tropical Ecology Research Assistant, CIEE Research Station, Bonaire, Netherlands Antilles

- Established a long-term reef monitoring program to assess the effects of coastline development on the reefs surrounding Bonaire, including SCUBA and sedimentation surveys
- Assisted CIEE faculty with classroom instruction, advised students on independent research projects

Rhode Island Department of Environmental Management & Commercial Fisheries Research Foundation
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- Established collaborations with Bonaire’s local government and conservation organizations

June-November 2008: Research Technician, Department of Marine and Coastal Resources, Nantucket, MA

- Completed research on survival, growth and reproduction of the bay scallop, *Argopectens irradians*, including the impact of physical, chemical, and optical water properties and habitat availability
- Assisted with bay scallop stock enhancement efforts, including the care of one million bay scallop seed and the operation of three floating upweller units

February-May 2008: Research Assistant, Ocean Process Analysis Lab, Durham, NH

- Assisted with oceanographic and biological sampling aboard the R/V Gulf Challenger in the Gulf of Maine
- Organized, prepared, and analyzed chlorophyll and CDOM samples collected during cruises

PROFESSIONAL PUBLICATIONS (2010 to present)

Gawarkiewicz, G., and **Malek Mercer, A.J.** *In press*. Partnering with Fishing Fleets to Monitor Ocean Conditions. Annual Review of Marine Science.

Malek Mercer, A.J., Ellertson, A., Spencer, D., and Heimann, T. *In press*. Fishermen fill data gaps for American lobster (*Homarus americanus*) and Jonah crab (*Cancer borealis*) in the Northeast USA. Bulletin of Marine Science.

Gawarkiewicz, G., Todd, R.E., Zhang, W., Partida, J., Gangopadhyay, A., Monim, M.-U.-H., Fratantoni, P., **Malek Mercer, A.J.**, and Dent, M. 2018. The changing nature of the shelf break exchange revealed by the OOI Pioneer Array. *Oceanography* 31(1): 60–70.

Malek, A.J., Collie, J.S., and Taylor, D.L. 2016. Dietary guilds and trophic structure of the fish community in Rhode Island Sound and Block Island Sound, USA. *Journal of Fish Biology* 89(3): 1513-36.

Byers, J., **Malek, A.J.**, Quevillon, L.E., Altman, I., and Keogh, C.L. 2015. Opposing selective pressures decouple pattern and process of parasitic infection over small spatial scale. *Oikos*.

Malek, A.J., Collie, J.C., and Gartland, J. 2014. Fine-scale spatial patterns in the demersal fish and invertebrate community in a northwest Atlantic ecosystem. *Estuarine Coastal & Shelf Science* 147: 1-10.

Taylor, D.T., Kutil, N.J., **Malek, A.J.**, and Collie, J.S. 2014. Mercury bioaccumulation in cartilaginous fishes from Southern New England coastal waters: Contamination from a trophic ecology and human health perspective. *Marine Environmental Research* 99: 20-33.

Malek, A.J., LaFrance, M.L, Collie, J.S. and King, J. 2010. Fisheries Ecology in Rhode Island and Block Island Sounds *in* Rhode Island Ocean Special Area Management Plan, Volume 2, Report #14.

Bohaboy, E., **Malek, A.J.** and Collie, J. 2010. [Baseline Characterization: Data sources, methods, and results in Rhode Island Ocean Special Area Management Plan](#), Volume 2, Report #13.

SPECIAL AWARDS/HONORS

- Outstanding Organization of the Year (2016), American Fisheries Society, Southern New England Chapter
- University of Rhode Island Graduate Fellowship Recipient 2012-2013
- URI Graduate School of Oceanography Alumni Award Recipient – 2011 & 2012
- Joshua MacMillan Award in Fisheries Oceanography 2011 (URI Graduate School of Oceanography)
- John Knauss Oceanography Award 2010 (URI Graduate School of Oceanography)

LEADERSHIP

- Board of Directors Member, American Fisheries Society, Southern New England Chapter
- Elected Member, Rhode Island Food Policy Council
- Steering Committee Member, Food to Institutions Rhode Island
- Member, Rhode Island Sea Grant Advisory Council

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Thomas E. Heimann

114 Olney Street Unit 1
Providence, RI 02906
(508)728 3401
theimann@cfrfoundation.org

EDUCATION

NORTHEASTERN UNIVERSITY

Master's: Marine Biology, Jan 2016

Boston, MA

PRESCOTT COLLEGE

B.A. Marine Science, May 2013

Prescott, AZ

RELATED WORK EXPERIENCE

Commercial Fisheries Research Foundation

Research Associate

South Kingston, RI

Sep 2015 – Present

- Research project management position working collaboratively with the Rhode Island fishing industry and Rhode Island Department of Environmental Management. Responsible for management of both Black sea bass Research Fleet and Quahog Research Fleet. Duties include Fleet support and training, sampling protocol development, database management, and outreach.

Northeastern University

Diving Research Methods TA

Nahant, MA

Sep 2015 – Oct 2015

- Employed by Northeastern University to be a teacher's assistant for an intensive AAUS diving research methods course. Duties included demonstrating underwater research and diving skills, minor SCUBA gear maintenance and repair, and supervision of student divers.

Mote Marine Laboratory

REU Intern

Sarasota, FL

May 2012 – Jul 2012

- National Science Foundation funded internship at Mote Marine Laboratory in Florida. Worked closely with a postdoctoral fellow on an independent research project in sensory biology and behavior of the common snook, a local sportfish. Project dealt specifically with the impacts of the hatchery rearing environment on the survival of released fish in the wild. Worked extensively with Microsoft Excel for data analysis.

Sheriff's Meadow Foundation

Property Stewardship Intern

Vineyard Haven, MA

May 2010 – Aug 2010

- Summer Intern position on Martha's Vineyard. Full time employment. Responsibilities included property management, invasive species control, vegetation identification, and tour guide.

CERTIFICATIONS AND SKILLS

- AAUS Scientific Diver
- PADI Rescue Diver
- Small Watercraft Operation
- Microsoft Office Package
- Statistical Language R
- ArcGIS

References:

- Atlantic Coastal Cooperative Statistics Program (ACCSP). 2018. Biological Sampling Priority Matrix. 4 p.
- Atlantic States Marine Fisheries Commission (ASMFC). 2013. Research Priorities and Recommendations to Support Interjurisdictional Fisheries Management for Black Sea Bass. Special Report # 89. ASMFC, Arlington, VA. 58pp.
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- Northeast Fisheries Science Center (NEFSC). 2011. 53rd Northeast Regional Stock Assessment Workshop (53rd SAW) Assessment Report. US Department of Commerce, Northeast Fish Science Center Reference Document 12-05; 559 p.
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- Southeast Fisheries Science Center (SEFSC). 2013. Stock Assessment of Black Sea Bass off the Southeastern United States: SEDAR Update Assessment. 102 p.
- Zhang, Y. and S.X. Cadrin .2013. Estimating Effective Sample Size for Monitoring Length Distributions: A Comparative Study of Georges Bank Groundfish, Transactions of the American Fisheries Society 142 (1): 59-67.



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

NATURAL AND HISTORIC RESOURCES

DIVISION OF FISH AND WILDLIFE

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Larry Herrightly, Director

PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

CATHERINE R. MCCABE
Acting Commissioner

August 13, 2018

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

Enclosed, please find the New Jersey Marine Fisheries Administration's proposal for the continuation of the project, "Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries". Please direct any questions or concerns directly to me.

Chad Power, Fisheries Biologist
NJ Marine Fisheries Administration

Chad.Power@dep.nj.gov

NJ Division of Fish & Wildlife
Nacote Creek Research Station
PO Box 418
Port Republic, NJ 08241

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;
Chad Power
New Jersey Division of Fish and Wildlife
P.O. Box 418
Port Republic, NJ 08241

Proposal for FY2019 ACCSP Funding

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: Greg Hinks, Principal Biologist (NJDFW)

Principal Investigator: Chad Power, Assistant Biologist (NJDFW)

Project Staff: Scott Stueber, NJ ACCSP Fisheries Specialist
Matthew Heyl, NJ ACCSP Fisheries Specialist

Requested Amount: \$164,356

Requested Award Period: September 1, 2019 to August 31, 2020

NJ Comment 1: Page 7

NJ updated sampling numbers: Page 18

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 all commercially important species including American eel, Atlantic menhaden, blue crab, and tautog; port sampling of the American eel, Atlantic menhaden, Atlantic croaker, weakfish, and American shad 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). Four of the species that NJ collects biological data for occur in the upper quartile of the ACCSP Biological Priority Matrix. These species include, Atlantic menhaden, American lobster, American eel, and black sea bass. The major scope of work for the current FY2019 proposal has not changed from the accepted FY2018 proposal. As part of the ACCSP funding process, NJ has submitted all progress reports to date covering the FY2017 project to the ACCSP. The final FY2017 Report will be due on November 30, 2018. The NJ FY2018 project will begin on September 1, 2018.

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. In addition, port sampling for tautog is also performed as a source of characterizing the commercial landings. 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 through FY2019 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.

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 2018 are found in Table 3 of the Appendix. Sampling is conducted through port of landings intercepts and will be continued in FY2019 for Atlantic menhaden, American eel, weakfish, Atlantic croaker, American shad, and tautog. 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 to fulfill various ASMFC's FMPs. Equally important to the collection of fisheries dependent data is the guarantee 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. NJ has shifted to entering trip reporting data directly

to SAFIS to increase efficiency in supplying the ACCSP and its partners with fishery dependent data. This was initiated in FY2016 and will continue for FY2019.

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 FY2018. Included again in the FY2019 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 FY2019 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 seven fiscal years (2010-2017) for the NJ ACCSP Program and continues to be the case for FY2019 (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 FY2019 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 black sea bass, Atlantic menhaden, American eel, weakfish, Atlantic croaker, American shad, summer flounder, tautog, and river herring was a maintenance project for FY2017. Sampling targets were near 100% of set goals during the first 12 years (2006-2018, Table 1) and will be similar for FY2019.

Commercial American eel, Atlantic croaker, weakfish, tautog, and American shad samples collected are processed 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 collected and 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 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, processed for QA/QC, 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 on 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. 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.

4. Data Delivery Plan

4.A. 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. FY2016 initiated the direct entry of trip level data into SAFIS. This will ensure a more efficient process for quality assurance and quality control performed by NJ ACCSP staff. It will also allow for a smooth transfer of data for the “End of the Year” Fisheries of the U.S. report submission.

4.B. Commercial Trip and Dealer Reporting (eTRIPS, eDR, Commercial Harvester & Dealer Reports)

The ACCSP and the State of NJ have accumulated 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 Atlantic 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 larger amount of commercial landings data through eDR for tautog, American eel, Atlantic menhaden, and blue crab. NJ ACCSP staff remove duplicate reports from multiple sources (paper, e-TRIPS) prior to ACCSP data uploads, ensuring accurate landings. 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 paper reporting forms are entered into SAFIS, reviewed for quality assurance, and are available to the ACCSP immediately.

5. Approach

5.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 13 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, as well as whole samples from the commercial hook and line fishery. Data collected from both sectors include, sex, length, weight, area fished, and effort data. This data is taken for collected fish as well as those that are discarded. can be found in Table 3 of the Appendix. Data from the recreational and commercial observer coverage will be entered into the NJDFW Biological Characterization database. Data will be formatted to ACCSP standards and submitted annually.

5.B. Biological Characterization 15% Allocated Funds

Sampling of black sea bass, Atlantic menhaden, American eel, weakfish, Atlantic croaker, American shad, summer flounder, and river herring (alewife and blueback) will continue in FY2019 based on 2017 annual landings of each species. Four 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' at the NJDFW Nacote Creek facility in Port Republic NJ will age all hard parts collected, except Atlantic menhaden, summer flounder, and black sea bass. Atlantic menhaden are sent to the NMFS aging lab in Beaufort, NC throughout the sampling year and are aged pro-bono. We have been providing samples for over 13 years and this has been beneficial to the coastwide stock assessment for Atlantic menhaden (Ray Mroch, Ray.Mroch@noaa.gov); summer flounder and black sea bass will be sent to the NMFS aging lab in Woods Hole, MA in early 2018 (Eric Robillard, Eric.Robillard@noaa.gov). 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 2018 can be found in Table 3 of the Appendix.

5.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 trip level landings of all commercially harvested fish by state permitted fishermen. Biological characterization data are collected for American lobster, black sea bass, American eel, tautog, weakfish, American shad, Atlantic croaker, summer flounder, and river herring. Following collection, the data are then input into SAFIS for future use and analyses by NJ and all other partners.

5.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 (eTRIPS), 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') 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 collected data. 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 all commercial species. Compliance of fishermen monthly reports is facilitated using the eTRIPS program and the New Jersey Harvester Trip Reporting forms.

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, provide 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 SAFIS and are processed for QA/QC. NJ ACCSP staff enter all harvest data received by paper trip report forms directly into SAFIS to increase efficiency.

6. Geographic Location

The ACCSP Fisheries Specialists (2) will serve as the project 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.

7. 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

8. 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 monthly. 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.

9. FY2019 Budget (Letters in parenthesis pertain to Federal Grant Object Codes)

<i>Item</i>	<i>Total NJ DFW in-kind support</i>
<i>Salaries (NJDFW)</i>	
Supervising Biologist 5% in-kind (current FTE)	\$4,821
Principal Biologist-Lab Supervisor- 15% in-kind (current FTE)	\$12,739
Assistant Biologist- 50% in-kind (current FTE)	\$24,632
Biologist Trainee - 50% in-kind (current FTE)	\$22,527
Clerical 10%	\$2,600
Fringe benefits (46.35% on FTEs)	\$31,202
Hourly Technician (current PTE)	\$11,700
Fringe benefits (7.65% on PTE)	\$895
<i>Supplies & Materials</i>	
Scientific Equipment (Measuring boards, scales, calipers)	\$250
Materials for collection and preparation of scales, otoliths, opercula, etc.	\$350
purchase of samples (American eels)	\$600
<i>Other</i>	
NJDFW Trawl Survey (\$5,900 per day x 10 days)	\$59,000
Department Network account (OIRM)	\$4,000
NJ DFW indirect costs (20.29% of salaries)	\$23,601
Subtotal NJ funds	\$198,916
Append to ACCSP Administrative Grant	
<i>Salaries (NJ ACCSP Staff)</i>	
(a) 2 ACCSP Fisheries Specialists (ASMFC employees)	\$86,528
(b) Benefits 25%	\$21,632
<i>Other</i>	
(c) Travel (mileage and tolls)	\$4,000
(d) NMFS Contract; process and age summer flounder/black sea bass otoliths, (\$12.94/sample, 1,000 samples)	\$12,940
(f) * ASMFC Overhead (35%)	\$39,256
(g) ACCSP Admin Grant Project Costs	\$164,356
Total Project Costs (includes in-kind)	\$363,272

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 number of miles traveled over the last three years to commercial docks, vessels, and instate meetings with industry representatives for the entire project = 7,477 miles / year.

$7,477 \times \$0.545 = \$4,075$ 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.

(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 FY2019 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 \$164,356 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 is also 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, Biologist Trainee, and Clerical; supplies for port sampling, aging laboratory materials, and purchasing American 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 as 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.

9.1 FY2018 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)		
Supervising Biologist 5% in-kind (current FTE)		\$4,821
Principal Biologist-Lab Supervisor- 15% in-kind (current FTE)		\$12,739
Assistant Biologist- 50% in-kind (current FTE)		\$24,632
Biologist Trainee - 50% in-kind (current FTE)		\$22,527
Clerical 10%		\$2,600
Fringe benefits (46.35% on FTEs)		\$31,202
Hourly Technician (current PTE)		\$11,700
Fringe benefits (7.65% on PTE)		\$895
Supplies & Materials		
Scientific Equipment (Measuring boards, scales, Materials for collection and preparation of scales, otoliths, operculi, etc.)		\$250
purchase of samples (American eels)		\$350
		\$600
Other		
NJDFW Trawl Survey (\$5,900 per day x 10 days)		\$59,000
Department Network account (OIRM)		\$4,000
NJ DFW indirect costs (20.29% of salaries)		\$23,601
Subtotal NJ funds		\$198,916
Append to ACCSP Administrative Grant		
Salaries (NJ ACCSP Staff)		
(a) 2 ACCSP Fisheries Specialists (ASMFC employees)	2x(2080hrs x 20.80/hr	\$86,528
(b) Benefits 25%	25% of total salaries	\$21,632
(c) Travel (mileage and tolls)	7,408 Miles x &.054/mile	\$4,000
(d) NMFS Contract; process and age summer flounder/black sea bass otoliths,	\$12.94/sample, 1,000 samples	\$12,940
(f) * ASMFC Overhead (35%)	35% of the sum of budget items a, b, c	\$39,256
(g) ACCSP Admin Grant Project Costs		\$164,356
Total Project Costs (includes in-kind)		\$363,272

10. 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 Request	Appended to ACCSP Admin Grant	NJDFW In-Kind	In-Kind Percentage of Total Project Cost
2001	3/01/2001 through 8/31/2002	Integration of Commercial Blue Crab Harvest Data into the ACCSP	\$133,388	\$0	\$0	0%
2005	5/01/2005 through 4/30/2006	Implementation of Phase 2 of the ACCSP for the State of New Jersey	\$83,180	\$84,375	\$41,831	19%
2006	3/01/2006 through 8/31/2007	Biological Characterization of Four New Jersey Commercial Fisheries	\$73,722	\$0	\$59,386	43%
2006	3/01/2006 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	3/01/2007 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	3/1/2008 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	3/1/2009 through 8/31/2010	Introduction & Continuance of SAFIS and Biological Characterization of Commercial Fisheries in NJ	\$52,814	\$174,096	\$132,008	37%
2010	3/1/2010 through 8/31/2011	Further Development of SAFIS and Biological Characterization of Commercial Fisheries in NJ	\$24,301	\$174,096	\$131,008	43%
2011	3/1/2011 through 8/31/2012	Continued Expansion of SAFIS and Biological Sampling for the Commercial Fisheries of NJ	\$0	\$188,779	\$131,008	50%
2012	3/1/2012 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	3/1/2013 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	3/1/2014 through 8/31/2015	Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ	\$75,388	\$152,602	\$159,227	41%
2015	3/1/2015 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	3/1/2016 through 8/31/2017	Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ	\$0	\$167,356	\$205,725	55%
2017	3/1/2017 through 8/31/2018	Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ	\$0	\$158,547	\$205,725	56%
2018	3/1/2018 through 8/31/2019	Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ	\$0	\$164,356	\$198,316	55%
Total Amount for all ACCSP Projects			\$833,337	\$2,124,660	\$2,334,735	44%

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 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 FY2019.

In-kind Contribution:

The NJDFW is providing 55% of the project cost (see section 9).

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, 4 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, all of which are regionally managed through the ASMFC's FMPs including weakfish, Atlantic croaker, American shad/river herring, tautog, Atlantic menhaden, American eel, 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.

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 committees. 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. American eel, American lobster, Atlantic menhaden, black sea bass all appear on the upper quartile of the ACCSP Biological Priority Matrix. (NJDFW recognizes biological samples by calendar year, not project year)

NJ ACCSP Biological Sampling Summary (Calendar Year)															
Year	Weakfish			American Eel			Atlantic Croaker			American Shad			Atlantic Menhaden		
	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	27	81	77	0	890	890	814
2015	88	88	86	256	256	136	170	169	166	130	128	0	1300	1300	1078
2016	80	80	76	279	279	170	166	166	163	149	148	0	1120	1120	778
2017	70	70	*	166	166	*	27	27	*	83	82	0	1461	1461	*
2018	36	36	*	156	154	*	4	4	*	23	23	*	690	690	*
TOTAL	3638	3451	3267	3776	3025	1977	4346	3812	3738	741	724	0	10141	10141	6608

* All samples denoted by an asterisk collected thus far have not been entered/processed at the time of submission.
 2018 is the current sampling year, numbers provided are up to date as of submission

Year	Tautog			American Lobster		Black Sea Bass			River Herring			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	0	N/A	N/A	N/A
2010	563	486	486	5569	10	91	91	90	378	306	0	247	247	231
2011	363	346	346	8661	14	106	106	106	655	509	0	340	340	335
2012	265	259	259	23690	20	109	109	108	891	889	0	393	393	377
2013	460	431	300	9954	9	142	142	141	226	226	0	360	360	350
2014	783	783	294	13482	13	113	113	113	319	319	0	347	343	323
2015	569	536	200	6352	10	126	120	120	156	156	0	360	359	336
2016	493	493	253	3710	5	112	112	110	49	48	*	338	338	327
2017	504	504	*	9543	10	119	119	119	247	243	*	318	318	295
2018	215	215	*	664	3	51	51	*	117	114	*	135	135	*
TOTAL	7290	6163	3879	94740	119	969	963	907	5047	4660	N/A	2838	2833	2574

* All samples denoted by an asterisk collected thus far have not been entered/processed at the time of submission.
 2018 is the current sampling year, numbers provided are up to date as of submission

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

Fishery	Year									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
AMERICAN SHAD	X	X	X	X	X	X	X	X	X	X
CRAB DREDGE	X	X	X	X	X	X	X	X	X	X
BAIT NET									X	X
CRAB POT	X	X	X	X	X	X	X	X	X	X
LOBSTER, FISH CONCH POTS									X	X
DRIFTING GILL NET									X	X
FYKE NET									X	X
GILL NET MESH EXEMPTION PERMIT (GNMEP)	X	X	X	X	X	X	X	X	X	X
HAUL SEINE									X	X
MENHADEN									X	X
MINIATURE FYKES OR POTS	X	X	X	X	X	X	X	X	X	X
POUND NET									X	X
SHIRRED NET, PURSE SEINES, OTTER/BEAM TRAWLS									X	X
SHRIMP TRAWL									X	X
STAKED AND ANCHORED GILL NET									X	X
TAUTOG	X	X	X	X	X	X	X	X	X	X
WIRE POUND NET									X	X

Table 3. 2018 sampling targets for each of the nine species currently funded through the ACCSP.

2018 NJ ACCSP SAMPLING TARGETS		
Species	Target Lengths	Target Ages
American eel	350	350
Atlantic croaker	540	540
Atlantic menhaden	709	709
Weakfish	270	135
American shad	250	250
Summer flounder	500	500
Black sea bass	500	500
River herring	500	500
Tautog	200	200

Figure 1. Historical summary of the NJDFW tautog aging program (1993-2015).

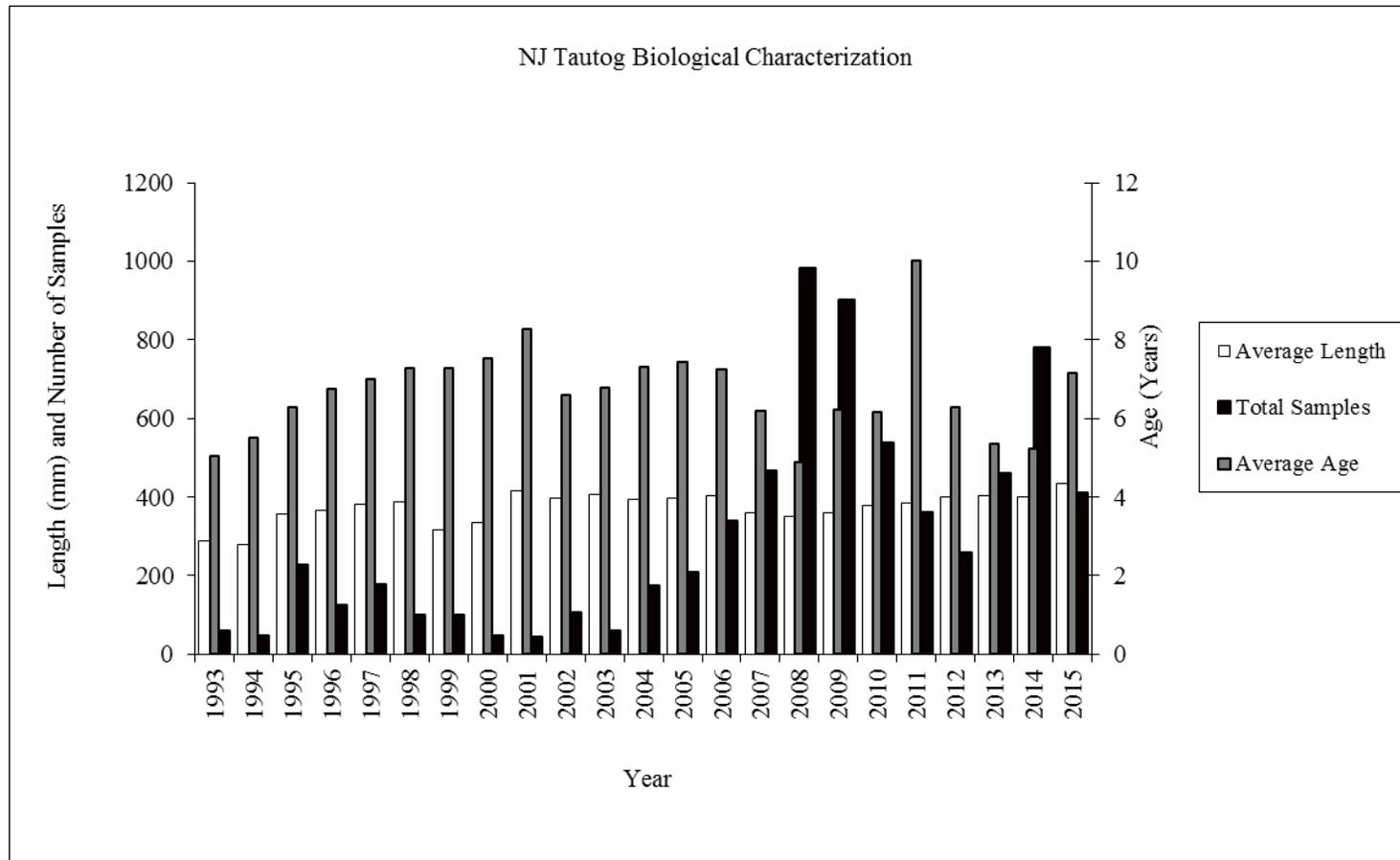


Figure 2. Average length at age for summer flounder samples collected through the NJ ACCSP Project (2006-2017).

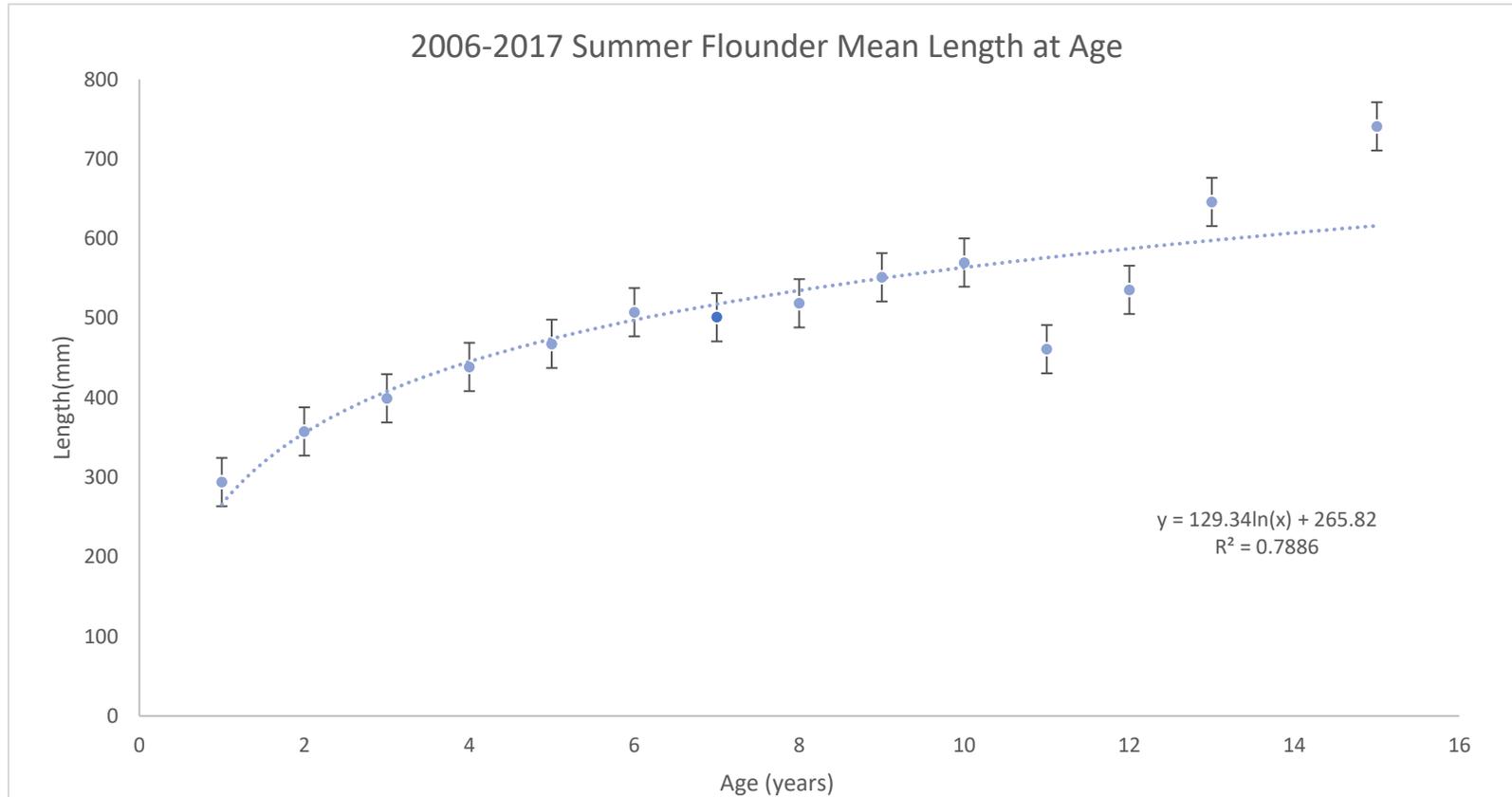
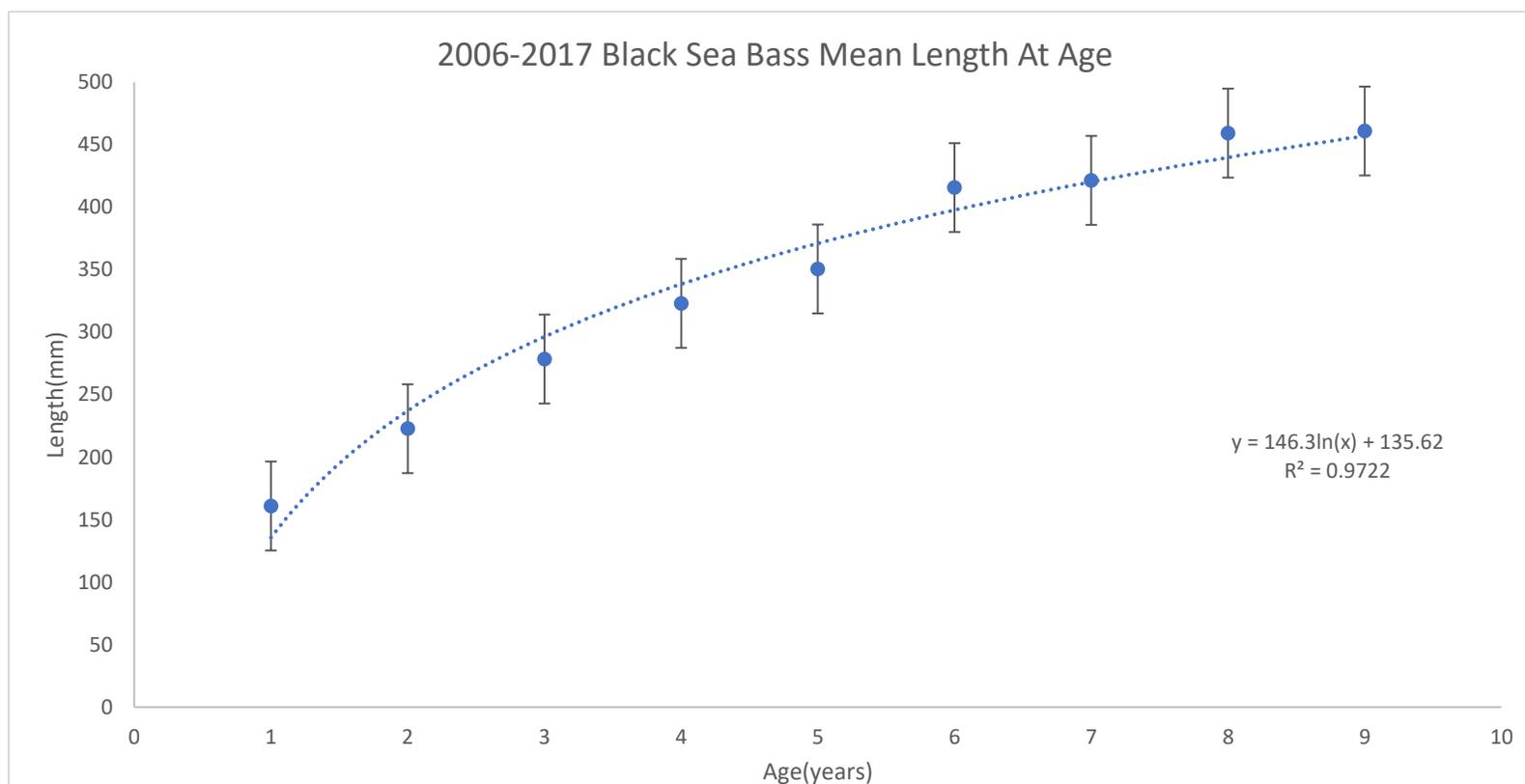


Figure 3. Average length at age for black sea bass samples collected through the NJ ACCSP Project (2006-2017).



Chad A. Power

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Education

Bachelors of Science, Marine Science, 2012 GPA- 3.68
Stockton University, Pomona, N.J

Associates of Chemistry, 2010 GPA- 3.30
Gloucester County College, Sewell, N.J

Employment

APRIL 2017- PRESENT
WILDLIFE

NEW JERSEY DIVISION OF FISH AND

Marine Fisheries Biologist

- Manage and Monitor allocations and seasonal quotas for New Jersey's commercial fisheries
- Oversee the duties and responsibilities of New Jersey's Atlantic Coastal Cooperative Statistics Program's (ACCSP) contracted fisheries specialists
- Lead and assist numerous field and lab oriented projects administered by the New Jersey Division of Fish and Wildlife
 - Lead on NJ's yellow eel survey
 - Support crew on NJ's Ocean Trawl Stock Assessment Survey
 - Lead on NJ's Gut Content Analysis Project
- Active member of the Atlantic States Marine Fisheries Commission's (ASMFC) American lobster Technical Committee, and the acting chair ACCSP's Biological Review Panel
- Oversee operations and maintenance of New Jersey's Commercial Harvester Trip Reporting Program

Chad A. Power

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Williamstown, NJ 08094
(609) 334-6479
Chad0826@gmail.com

OCTOBER 2013- APRIL 2017
STATISTICS PROGRAM

ATLANTIC COASTAL COOPERATIVE

NJ ACCSP Fisheries Specialist

- Interact and assist New Jersey fishermen and dealers on submitting commercial harvest and landings reporting forms on both paper and electronic formats through the Standard Atlantic Fisheries Information System (SAFIS)
- Draft and design formal documents, including request for funding (RFP) documents and regulatory correspondence letters
- Created and implemented New Jersey's first Commercial Harvester Trip Reporting Program
- Coordinate with upper management on commercial fishery closures based on monitoring quotas

- Supervision of seasonal and part time New Jersey Division of Fish and Wildlife employees
- Supervise and take part in at sea observing and dock side sampling programs to assess New Jersey fisheries species populations

JUNE 2012- JUNE 2013
WILDLIFE

NEW JERSEY DIVISION OF FISH AND

Marine Fisheries Technician

- Exportation and evaluation of collection data, using both software and online applications
 - Microsoft Office
 - SAFIS
 - Infoview, a database application of SAP BusinessObjects
- Outreach to commercial fishermen about monthly reporting issues and violations
- Extraction of fish otoliths and other hard parts for use in aging
- Operation and maintenance of sampling equipment
 - haul seines, dredges, fyke nets, benthic grabs, trawls, gill nets

Chad A. Power

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Williamstown, NJ 08094
(609) 334-6479
Chad0826@gmail.com

JUNE 2012- OCTOBER 2013

Field Station Technician

STOCKTON UNIVERSITY

Marine Science and Environmental Field Station

- Provide support to research and educational activities; participate in vessel trips including assisting with field oriented classes
- Vessel and equipment preparation, deployment, and operation
- Oversight of equipment, facility, and vessel maintenance
 - Remote operated vehicle, side scan sonar towfish, depth finders, YSI water quality sondes, Boat Motors
 - Maintenance shop, storage units, office buildings
 - Upkeep and Husbandry on lab's multiple aquaculture systems

SCOTT STUEBER

320 Huntington Avenue, Pine Beach, NJ 08741

(732) 664-0967

scottwstueber@gmail.com

EDUCATION

Stockton University, Galloway, NJ

Bachelor of Science: Marine Science and Biology, May 2017

PROFESSIONAL EXPERIENCE

Atlantic States Marine Fisheries Commission

Atlantic Coastal Cooperative Statistics Program, Port Republic, NJ

Fisheries Specialist, May 2017-Present

- Oversee and participate in NJ's American Lobster at-sea observer program. Coordinate with lobster fishermen to schedule at-sea observer trips. Obtain length, sex, and other biometric data for all American lobsters brought on board
- Manage commercial fishery harvest data that is regulated by the Atlantic States Marine Fisheries Commission such as tautog, Atlantic menhaden, black sea bass, and summer flounder
- Oversee and participate in New Jersey's biological sampling program for summer flounder, black sea bass, American shad, American eel, Atlantic croaker, tautog, and Atlantic menhaden. lengths, weights, and sexes are recorded and age structures are collected
- Fulfill commercial landings data requests for NJDFW biologists and ACCSP staff.
- Assist with drafting, designing, and mailing opening/closing letters, annual quota/ trip limit letter, and other formal documents.
- Draft and design mandated semi-annual and annual reports required to stay in compliance for NJDFW's current ACCSP Biological Characterization project
- Design and submit bi-annual reports of NJ's commercial trip-level landings data to the ACCSP to be used in NOAA's Fisheries of the U.S. annual report
- NJDFW's representative on the ACCSP's Standard Codes Technical Committee, Information Systems Technical Committee, and Outreach Committee.
- Coordinate outreach efforts to ensure proper commercial reporting and identification of NJ marine species.
- Crew member for sampling various species of fish and invertebrates in the Atlantic Ocean aboard 80' research vessel as a part of New Jersey's Ocean Trawl Survey
- Assist with monitoring commercial quotas for New Jersey commercially important species including summer flounder, black sea bass, scup, bluefish and Atlantic Menhaden
- Transcribe data from at-sea biological sampling trips into the appropriate biological data base for analysis
- Collaborate with fisherman to enact New Jersey's Commercial Harvester Trip Reporting form to ensure accurate reporting

SCOTT STUEBER

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New Jersey Department of Environmental Protection
Division of Fish and Wildlife, Bureau of Shellfisheries, Port Republic, NJ

Seasonal Fisheries Technician, June 2015-May 2017

- Crew member for sampling hard clams aboard 42' research vessel equipped with hydraulic clam dredge
- Crew member for sampling surf clams in the Atlantic Ocean using chartered commercial surf clam vessel
- Safe deployment and retrieval of Petersen bottom sediment grab sampler for collection of sediment and juvenile shellfish samples and associated species
- Extensive laboratory work sorting, enumerating, and identifying benthic samples for juvenile shellfish
- Laboratory work performing sediment grain size analysis

Atlantic City Aquarium, Atlantic City, NJ

Intern, January 2015-May 2015

- Educate guests on exhibits throughout the aquarium.
- Perform interactive animal demonstrations and presentations to the public
- Act as a dive tender to assure safety of divers while in 25,000 gallon tank

New Jersey Department of Environmental Protection
Division of Fish and Wildlife Bureau of Fisheries, Port Republic, NJ

Volunteer, June 2014-August 2014

- Crew member on river herring survey - sampled populations in several different rivers across the state of New Jersey
- Sampling methods included: seining, enumerating, measuring and recording species data for later analysis

PROFESSIONAL SKILLS

- Proper use of equipment: seine net, Niskin bottle, hydrometer, salinity refractometer, otter trawl, Van Veen sediment grab sampler, Peterson grab sampler, clam rake, clam tongs, plankton net, YSI water quality testing monitor, field guides, refugium, tank filtration systems and heaters.
- Experience using Microsoft Excel for data collected, and Microsoft PowerPoint for preparation of oral presentations
- Experience in extracting Otoliths, scales, and opercula bones from a variety of species for aging purposes
- Experience in extracting gut contents from various species including striped bass, spiny dogfish, and summer flounder
- Experience with MatLab, SAS, and Microsoft Office

SCOTT STUEBER

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- Experience in oracle based software, SAFIS and ACCSP's Data warehouse

HONORS AND PROFESSIONAL AFFILIATIONS

- PADI Open Water Scuba Diver Certification, 2014
- American Heart Association CPR/AED and First Aid Certification, 2016
- New Jersey Boater Safety Certificate, 2011
- Boy Scouts of America, **Eagle Scout**, 2010

Matthew V Heyl

6 Provincial Place, Neptune, NJ 07753 | C: (908) 433-1166 | phewman@msn.com

Objective

- To obtain a responsible and challenging position, where I can apply my experience and educational background and contribute with my desire to learn and work with others.

Experience

FISHERIES SPECIALIST | ATLANTIC COASTAL COOPERATIVE STATISTICS PROGRAM | 01/18 TO CURRENT

- Monitor multiple databases to keep track of all state and federal seafood dealers and fishermen as regulated by the Atlantic States Marine Fisheries Commission(ASMFC) and the New Jersey Division of Fish and Wildlife
- Conducting dockside sampling of marine fish from commercial and recreational fisherman
- Field sampling that includes fisheries dependent and independent surveys
- Biological sampling of marine fish while in a lab and in the field which includes extracting otolith, operculum, and scales for aging
- Work with New Jersey seafood dealers and fishermen, and with state, federal, and ACCSP staff to implement the ACCSP Standard Atlantic Fisheries Information System (SAFIS) for electronic Dealer Reporting, and electronic Vessel Trip Reporting
- Perform entry of commercial fisheries data collected from individual fishermen for the use of stock assessment
- Provide New Jersey biologist commercial fisheries data upon request
- Supervise hourly and summer workers and proof reading and editing work before submission

MARINE BIOLOGIST | NEW JERSEY FISH AND WILDLIFE | 05/2008 TO 01/2018

- Successfully helped create and lead New Jersey's River Herring Project which resulted in much needed data and a time line that will be used in management and regulation of the fishery
- Knowledge and experience conducting fisheries surveys of adult and juvenile saltwater, freshwater and estuarine fishes with a focus on anadromous fish
- Provide supervision and training to hourly and summer workers
- Documented and collected fisheries data while working in the field and at the office
- Created and monitored river herring field survey database keeping track of fisheries data using Microsoft office
- Certified and experienced using electro-fishing equipment
- Monitored water quality, atmospheric conditions, and flow rates of various water bodies
- Processing and aging of otoliths and scales
- Prepares time restricted reports for supervisors
- Knowledge and experience of various sampling methods including Seine Nets, Gill Nets, Otter Trawl, and Fyke Nets
- Maintenance and purchasing of nets, vehicles, boats, trailers and field equipment

Matthew V Heyl

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CONSERVATION OFFICER | NEW JERSEY FISH AND WILDLIFE | 01/2016 TO 03/2017

- Full law enforcement powers
- Conducting field investigations, inspections and surveying and patrolling a designated area of the State by motor vehicle, boat, and foot
- Conducts environmental inspections and investigations and collects field information to determine compliance with the appropriate environmental laws and regulations
- Educates and informs the public regarding rules, laws, procedures and management practices regarding the recreational and commercial uses of fish, game and wildlife to ensure the protection of the environment
- Prepares investigating reports of hunter-related accidents, and completion of a thorough and comprehensive report on all such incidents
- Maintain field notes and prepare for record retention

LAB PROFESSOR | BROOKDALE COMMUNITY COLLEGE | 09/2013 TO 01/2016

- Teach college age student Oceanography and Environmental Science concepts
- Plan and lead labs and field trips
- Grade students work including lab practical, class work, and research papers

Education

BACHELOR OF SCIENCE | 2008 | RICHARD STOCKTON COLLEGE OF NEW JERSEY

- Major: Marine Biology

BROOKDALE COMMUNITY COLLEGE

- Major: Environmental Science
 - transferred

Skills & Abilities

ACCOMPLISHMENTS

- Gloucester County, New Jersey Police Academy Graduate
- Boy Scout Eagle Scout Award

PUBLICATIONS

- Books:
 - Heyl, M. River Herring Status: Research Hold the Key, NJ Fish and Wildlife Marine Fish Digest, 2018.
 - Heyl, M. It's a Short! Safely Releasing Summer Flounder Unharmed, NJ Fish and Wildlife Marine Fish Digest 2017

Matthew V Heyl

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- Technical Report:
 - Heyl, M. 2013 An Assessment and Restoration Program of River Herring (Alewife and Blueback Herring) in the Rancocas Creek and Maurice River, Mid Atlantic Chapter American Fisheries Society

PRESENTATIONS

- “An Assessment and Restoration Program of River Herring (Alewife and Blueback Herring) in the Rancocas Creek and Maurice River”; Mid-Atlantic Chapter of the American Fisheries Society Annual Conference Tuckerton, NJ, 2013

CERTIFICATIONS

- Rutgers IFISH Fisheries Management Class
- New Jersey Police Training Commission Certificate
- Boating Safety Certificate with Driver’s License endorsement
- Advance Scuba Diver Certificate
- CPR and AED Certificate
- US Fish and Wildlife Service Electrofishing Safety Certificate
- New Jersey Department of Environmental Protection ArcMap/GIS Training

**FY 2019 Atlantic Coastal Cooperative Statistics Program (ACCSP)
Funding Request Proposal – June 11, 2018
Revised – August 13, 2018**

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: \$168,870 (Excludes 5% NOAA Administrative Fee)

Requested Award Period: One-year, September 1, 2019 thru August 31, 2020, or after receipt of funds

Objective: The objective of this study is to successfully execute two ACCSP Primary Program Priorities with South Carolina Commercial Fisheries:
Catch/Effort Data Collection (70%)
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 the collection of biological samples, including otoliths and length frequencies, from species in the Snapper/Grouper, Pelagic, and Coastal Migratory complexes landed commercially in South Carolina. These data serve as an integral aspect of the development, implementation, assessment and maintenance of fisheries management plans for Atlantic Coastal fish stocks.

Need: 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 fishermen, has a direct impact on fisheries management and the sustainability of 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. The Atlantic States Marine Fisheries Commission also needs reliable and detailed data to evaluate the effectiveness of Fisheries Management Plans.

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/electronic applications.** These data are collected through a one ticket system, denoting that all fishing effort (provided by the harvester at the 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/electronic applications 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 1,571 licensed commercial saltwater fishermen, 55 bait dealers, and 271 wholesale seafood dealers in South Carolina, of which 243 are reporting via paper logbook and 28 federal dealers. 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 24 federal dealers (still actively engaged in outreach and education for several new/retuning dealers) that are currently using the provided data platforms have successfully transitioned to this reporting method. 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 Commercial Outreach Coordinator's goal has been to provide outreach, education, and support to federal dealers while initiating efforts to have state-only dealers utilize the electronic infrastructure. There are very few state only dealers that have shown interests or pilot tested the electronic platform.** The coordinator continues to excel in this position with respect to best practices for commercial data collections, building relationships with existing federal dealers and partner agency staff, and providing technical support to dealers and federal partners with request to data requests/corrections. **Additionally, work has begun with ACCSP staff to revise the existing SAFIS platform, which was developed in 2010, to ensure that all of the data parameters are updated. This process is very slow to progress giving the high demand on ACCSP staff with no increase in infrastructure.** The final step, which is under developmental construction now, is to provide functional outreach tools on the agencies commercial data information website, and will include video tutorials, a frequently asked questions list, etc. for SAFIS users to utilize. It is the Agency's intent to create a seamless transition to electronic data reporting for all dealers, while ensuring compliance and data integrity. Although electronic data collections are a priority, at this time, staff are not prepared to request that state legislation change regulations to require mandatory electronic data. As federal agencies continue to increase electronic monitoring programs for many fishing sectors, their momentum may serve as a catalyst to increase state only fishing sectors to report electronically as well. Quality of data remains the critical foundation for fisheries data collections, and provided that electronic reporting has not been well received by all, staff feel that at this time, requiring electronic data reporting would not result in maintaining the highest quality of data possible.

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 a data entry position, 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 and to 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 vital 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.

Data Delivery Plan:

All available South Carolina trip-level catch and effort data will be converted to ACCSP codes and follow all established standards. Data will be transmitted to ACCSP at minimum quarterly, followed by complete calendar year data being transmitted on or prior to typical March deadlines established by ACCSP. Additionally, when unique data needs are requested (i.e. related to quota monitoring), SCDNR staff will work with SERO, HMS, and ACCSP staff to provide the most accurate and complete data in order to fulfill the request.

Electronic data collections of offshore fisheries products from federally permitted dealers through SAFIS and Bluefin data applications continue to be a primary focus for the Agency. Electronic data allows for better efficiency with respect to quota monitoring efforts. SCDNR staff continue to work with federally permitted dealers to insure they understand and can utilize the available electronic applications to enter and submit data in order to meet compliance deadlines. This outreach effort has resulted in improved timeliness and completeness of this data, as well as the state managed fisheries data. QA/QC checks of the offshore federal data, within the

quarterly submission timeframe, will occur in order to ensure that the provided data is accurate and complete. The SAFIS data will be loaded directly into the data warehouse on a similar quarterly basis.

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.
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 examine inconsistencies and as necessary edit 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 in a manner 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 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 will be 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.

Project Accomplishments Goals and Measurement:

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

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.

- Quality assured quality controlled data transmissions to ACCSP, submitted on time and in approved formats.
- Catch/effort and biological sample data collections program maintained through internal databases with electronic data collections from the SAFIS/Bluefin programs.
- Provide support to SC licenses wholesale seafood dealers, with focused efforts to improve data collection quality, timeliness and accuracy.
- Commercial landings from state and federal dealers will be effectively used to monitor quota species, track data compliance, verify licensed fishermen and there fishing activities, and support best management practices.

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.

Funding Transition:

SCDNR continues to have discussions with state representatives and legislators about securing reoccurring 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.

Milestone Schedule:

Catch and Effort	A	S	O	N	D	J	F	M	A	M	J	J	A	S
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	A	S	O	N	D	J	F	M	A	M	J	J	A	S
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

Cost Summary:

1. BUDGET FOR PROPOSAL PLANNING - FY2019

	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	\$40,590
Database Manager (Catch & Effort - EH)	4	\$17,548	4	\$17,548
Biologist I (Commercial Outreach - JD)	6	\$19,308	3	\$9,654
Data Administrator (Catch & Effort - VG)	3	\$9,798	4	\$13,064
Data Coordinator I (Catch & Effort - SM)	5	\$14,080	4	\$11,264
Biologist I (Biological - DP)	6	\$18,378	4	\$12,252
Biologist I (Biological - EM)	6	\$18,378	4	\$12,252
Total Salary Costs		\$97,490		\$116,624
Fringe Costs (38%)		\$37,046		\$44,317
Indirect Costs (28.55%)		\$27,833		\$33,296
Total Personnel Expenses		\$162,370		\$194,237
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 \$9.12. Typical usage of these logbooks varies from year to year. During the last fiscal year, just over 300 logbooks were distributed to dealers, with a replacement cost of \$2,736..		\$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 \$1,598 in returned mail during the 2018 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, filet 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		\$168,870		\$207,237
Total Project Cost				\$376,107
Percentage Contribution		45%		55%

Info on increased budget: SCDNR initiated a Pay Plan for staff 2 years ago. With approved training and continuing education training/classes, staff qualify for a 3% raise every other year.

2. BUDGET – FY18 – Approved By ACCSP

	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	\$36,902
Database Manager (Catch & Effort - EH)	3	\$11,967	3	\$11,967
Biologist I (Commercial Outreach - JD)	6	\$15,402	2	\$5,135
Data Administrator (Catch & Effort - VG)	4	\$13,064	4	\$13,064
Data Coordinator I (Catch & Effort - SM)	6	\$14,478	4	\$9,653
Biologist I (Biological - DP)	7	\$21,441	4	\$12,252
Biologist I (Biological - EM)	6	\$18,378	5	\$15,316
Total Salary Costs		\$94,730		\$104,289
Fringe Costs (38%)		\$35,997		\$39,630
Indirect Costs (27.44%)		\$25,994		\$28,617
Total Personnel Expenses		\$156,721		\$172,536
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 \$8.74. Typical usage of these logbooks varies from year to year. During the last fiscal year, # 300 logbooks were distributed to dealers, with a replacement coast estimated at \$2,622.		\$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 2017 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		\$163,221		\$185,536
Total Project Cost		\$348,757		
Percentage Contribution		47%		53%

BUDGET NARRATIVE
(Requested Funding Period, FY19)

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#: NOAA-NMFS-SE-2019- TBD

Project Period: 1 September 2019 – 31 August 2020

1 Year Funding: \$168,870

Prepared by: Amy Dukes (PI)

Personnel (Salaries) \$97,490: Six SCDNR employees' salary time will be utilized with these funds. The six current employees are: Database Manager, for 4 months (\$17,548); Commercial Outreach Coordinator, for 6 months (\$19,308); Wildlife Biologist I (Port Agent) for 6 months (\$18,378); Wildlife Biologist I (Port Agent) for 6 months (\$18,378); a Data Compliance Administrator for 3 months (\$9,798); and a Data Coordinator for 5 months (\$14,080).

Fringe Benefits \$37,046: 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: 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, 350 logbooks were distributed to dealers, with an average price of \$8.17 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: 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 \$27,834: The current SCDNR indirect cost is set at 28.55% which is only applied toward salaries and wages.

Totals: \$168,870

BUDGET NARAVTIVE
(Approved Funding Period, FY18)

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#: NOAA-NMFS-SE-2018- TBD
Project Period: 1 September 2018 – 31 August 2019
1 Year Funding: \$163,221
Prepared by: Amy Dukes (PI)

Personnel (Salaries) \$94,730: Six SCDNR employees' salary time will be utilized with these funds. The six current employees are: Database Manager, for 3 months (\$11,967); Commercial Outreach Coordinator, for 6 months (\$15,402); Wildlife Biologist I (Port Agent), for 7 months (\$21,441); Wildlife Biologist I (Port Agent), for 6 months (\$18,378); Data Administrator, for 4 months (\$13,064); and 1 Data Coordinator, for 6 months (\$14,478).

Fringe Benefits \$35,997: 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 the last fiscal year, 300 logbooks were distributed to dealers, with an average price of \$8.74 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 \$25,994: The current SCDNR indirect cost is set at 27.44% which is only applied toward salaries and wages.

Totals: \$163,221

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 Fiscal 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.
2016	\$161,504	1 July 2016 – 30 June 2017	Catch and Effort data collection from the Commercial Module and Biological Sampling efforts.
2017	\$163,221	1 July 2017 – 30 June 2018	Catch and Effort data collection from the Commercial Module and Biological Sampling efforts.

ACCSP - Ranking Criteria Summary – Full Ranking Process

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. **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. Twelve of the species sampled fall within the ACCSP Biological Sampling Priority Matrix.
- Data Delivery Plan - Data will be transmitted to ACCSP quarterly, ensuring that all SC trip-level catch and effort data has been converted to ACCSP codes and follow all established standards.

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-SERO based in part by SCDNR fisheries data collections, 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 and legislators about securing reoccurring 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.
- In-kind Contribution - The agency does utilize other funding sources to offset the non-existent state funds, which represents the 55% 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 SAFIS data loads to the warehouse 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.
- Merit – These funds are essential to continue seamless commercial catch/effort and biological data collections in SC until reoccurring state appropriate funds can be established. A delay or stoppage in these data collections may be unfavorable for fisheries management and regulations.

ACCSP - Ranking Criteria Summary – Abridged Ranking Process

Achieved Goals – This project has and will continue to meet and endeavor to exceed established project goals. SCDNR staff diligently and consistently work with ACCSP staff to ensure quality data is provided in a timely manner in a clean format which is consistent with established data standards.

Data Delivery Plan - Data will be transmitted to ACCSP quarterly, at minimum, ensuring that all SC trip-level catch and effort data has been converted to ACCSP codes and follow all established standards. Any data refresh, based upon continuous QA/QC efforts by SCDNR staff, will be provided as necessary.

Level Funding – This proposal did increase slightly, as a new state agency pay plan was introduced. The increase is approximately \$2,700. Additionally, the agency increased the indirect rate from 27.44% to 28.55% which also contributed to the overall increase in requested funds. Although this increase in requested funds will adversely affect raking, there was no other available funding to offset the increase in salary to much deserving, hard working staff!

Properly Prepared – This proposal follows the guidelines under the ACCSP Funding Decision Process Document.

Merit – These funds are essential to continue seamless commercial catch/effort and biological data collections in SC until reoccurring state appropriate funds can be established. A delay or stoppage in these data collections may be unfavorable for fisheries management and regulations.

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	# HAILS		HOURS	
	616 ELECTRAMATE				LENGTH (MILES)	TOTAL SOAK TIME (HRS)		# CP SPIARS	
	660 TROLL	1	1	4	TOTAL SOAK TIME (HRS)			# CP DIVES	
665 MACKEREL TROLL				DAYS FISHED		657	GREEN STICK		
400 GILL NET	LENGTH (YRD)		TOTAL SOAK TIME (HRS)	HOURS FISHED		LINE LENGTH (FT)	# CP HOOKS	HRS FISHED	

CIRCLE AREA WHERE MOST OF CATCH WAS MADE											
3378	<= 60 MILES OFF G/TOWN 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)	3278	> 60 MILES OFF CHARLESTON - CHAS. BUMP	3178	BLAKE PLATEAU

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	Triggrfish	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

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:	
TRIP START DATE:		06 / 04 / 16		VESSEL NUMBER:	
		999999		Sea Robin	
		UNLOAD DATE:		06 / 04 / 16	

CIRCLE GEAR USED AND FILL IN INFORMATION

610	HANDLINES (ROD & REEL)	345	TRAPS	620	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/W/W - 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

Principle Investigator: Curriculum Vitae**Name:** Amy Whitaker Dukes**Position:** Fisheries Biologist III
Office of Fisheries Management
Fisheries Statistics Section**Phone:** (843) 953-9365 Voice
(843) 953-9386 Fax**Professional Address:**
217 Fort Johnson Road
Charleston, SC 29412-9641**E-mail:** DukesA@dnr.sc.gov**EDUCATION:**Spartanburg Methodist College (SMC),
Spartanburg SC
Associate in Science, Biology
August 1994 to May 1996Coastal Carolina University (CCU),
Conway, SC
Bachelor of Science, Marine Science
August 1996 to May 1999**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
Excellent Communication Skills to Diverse Audiences

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

Supplemental At-Sea Sampling for the Recreational Headboat Fishery on the Atlantic Coast

Submitted by:

ACCSP Recreational Technical Committee

Proposal for FY19 ACCSP Funding

Applicant name:	ACCSP Recreational Technical Committee (RTC)
Project title:	Supplemental At-Sea Sampling for the Recreational Headboat Fishery on the Atlantic Coast
Project type:	Maintenance Project
Requested award amount:	\$107,087 (NH, NJ, & NC via ACCSP = \$16,541, FL = \$90,546)
Requested award period:	January 1 through December 31, 2019
Original date submitted:	June 11, 2018

Objectives

- 1) Continue at-sea observer coverage in the recreational for-hire headboat¹ fishery for ACCSP partner states in the South Atlantic region to provide biological data necessary to monitor the species and size composition of retained and discarded fish in the recreational fishery, which are vital data feeds for assessing important managed fish stocks in the region.
- 2) Enhance at-sea observer coverage in the recreational for-hire headboat fishery for ACCSP partner states in the Middle and North Atlantic regions to improve precision around estimates of harvest and total catch for managed stocks and increase biological data for discarded and harvested fish

Need

In contemporary recreational fisheries, regulatory discards may make up all or a majority of the catch. Reliable and robust data for released catch requires at-sea surveys. 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. Headboat mode is the only segment of the recreational fishery anywhere along the Atlantic coast with observer coverage; thus, no other information on size composition of discards is currently available for any other recreational fishing mode across the South, Middle and North Atlantic regions².

In the South Atlantic (NC through eastern FL), effort and catch in the headboat fishery is monitored through the Southeast Region Headboat Survey (SRHS), which includes dockside sampling of harvested fish and validation of trip level landings and discards that are reported on logbooks by vessel operators. Separate at-sea observer coverage provides important biological data needed to characterize the species and size composition of released fish, and is also used to validate self-reported logbook data for discards (age structures may also be collected from harvested fish in Florida, which supplement dockside samples from the SRHS). Stock assessments were conducted during 2017 for black sea bass, vermilion snapper, red grouper and blueline tilefish in the South Atlantic, and are ongoing in 2018 for cobia, greater amberjack and red porgy. For all of these stocks, headboat at-sea observer coverage is the only source of information on the size composition of recreational discards. No fishery independent monitoring program exists in the region to monitor abundance of greater amberjack, and data collected at-sea by observers on

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.

headboats are currently being evaluated as a potential index of abundance for this stock assessment. Additional station-level and fish level information collected in Florida also provide valuable information on the depths that discarding occurs, the prevalence of hook injuries and barotrauma exposure, and whether fish are vented or descended prior to release and able to re-submerge. This information is important for stock assessments to accurately quantify fishing mortality attributed to discarding in recreational fisheries, which often exceeds harvest removals for some highly regulated species, such as red snapper.

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 estimate catch with reasonable precision 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 report all catch to National Marine Fisheries Service on logbook trip reports through the Vessel Trip Reporting Program (VTR). At-sea observer data is useful for characterizing the biological composition of harvest and discard portions of the catch, and may also be used to validate catch reported through the VTR program.

At-sea observer coverage has been supported coast-wide throughout the Atlantic with funding from ACCSP since 2005. These funds are particularly important to the South Atlantic region, where ACCSP funds 100% of observer coverage along the Atlantic coast of Florida. Base allocation for at-sea sampling through MRIP has been reduced to zero in the region since the SRHS serves as the official source of catch and effort estimates, and at-sea data are no longer used by NMFS S&T to generate separate estimates for the headboat fishing mode. In North Carolina, if 2018 is the last year that base level MRIP allocation is available for at-sea observer coverage, the state will cover the previous NOAA at-sea observer allocation and ACCSP funds are needed to support the remaining 26% for continued coverage in 2019. If South Carolina loses MRIP support in 2018, the state will continue sampling in 2019 without support from ACCSP; and historically Georgia has no base allocation for at-sea sampling, but plans to continue to cover 100% of funds to sample the small fleet that operates in the state. Given that the majority of headboat effort takes place in NC and FL, important data streams needed for regional stock assessments cannot be continued at their current level without support from ACCSP. State and federal partners are currently discussing how to transition when funding for long-term maintenance projects through ACCSP sunsets starting in FY20; however, fishery dependent monitoring in the South Atlantic region is extremely limited and a transition plan has not been identified at this time.

In the Middle and North Atlantic regions, 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 increased biological data for assessing important managed fish stocks. Since the conduct of MRIP on the Atlantic coast has been covered through cooperative agreements with states, a number of partners have been able to transition away from requesting additional ACCSP funds to cover the costs of enhanced sampling. More states have joined that list of partners no longer seeking ACCSP funds for enhanced at-sea sampling in this current proposal. In 2019, only New Hampshire and New Jersey request additional funds to support enhanced sampling levels. This maintenance proposal will continue activities that have been funded in the past as ACCSP partners continue to seek alternative funding. Because of the importance of enhanced headboat sampling, future state APAIS budget requests may include supplemental samples historically supported through ACCSP in their base sample requests.

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 selects 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.

Data Delivery Plan

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. The data collected as add-on assignments from New Hampshire and New Jersey will be delivered to ACCSP concurrent with base assignments, processed and edited at ACCSP, and delivered electronically to MRIP monthly as part of the existing APAIS cooperative agreement. MRIP produces the catch estimates by two-month wave 45 days after the end of the wave. After public release of the recreational estimates, those estimates are made available through the ACCSP Data Warehouse. Data collected from North Carolina will also be delivered to ACCSP and made available through the Data Warehouse.

Biological data (lengths, weights, 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 and are 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. 2015, 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. Likewise, in the North, at-sea headboat discard sampling is the only source of recreational biological discard information for the depleted Atlantic cod fishery.

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 Middle 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

Coastal New Hampshire, New Jersey, North Carolina, and Eastern Florida (through Miami/Dade County).

Ranking Criteria Summary

- There are 11 ACCSP funding priorities for recreational fisheries as identified by the Recreational Technical Committee. The five priorities listed below, addressed by this proposal, constitute all of the top 5 priorities of the total 11 priorities:
 1. Improve precision (PSE) of MRIP catch estimates
 2. Comprehensive for-hire data collection and monitoring
 3. Improved recreational fishery discard and release data
 4. Biological sampling for recreational fisheries separate from MRIP APAIS
 5. Improved spatial resolution

- Primary Program Priority: Biological Data (80%)
 - Species in the top quartile of ACCSP's Biological Priority matrix affected by this proposal:
 - Black Sea Bass, Spanish Mackerel, and Cobia:
 - High priority overall for ACCSP.
 - Biological sampling is inadequate.
 - Winter Flounder
 - High priority overall for ACCSP.
 - Gag, Red Grouper, Snowy Grouper, Scamp, Gray Triggerfish, Blueline Tilefish, Tilefish, Red Drum
 - High priority in the South Atlantic region.
 - Biological sampling is inadequate.
 - Red Snapper:
 - High priority in the South Atlantic region.
 - Recreational harvest is only open 0 to 9 days per year.
 - Discard lengths represent up to 100% of biological samples for this species.

- Secondary Program Priority: Catch, effort and landings data (20%)
 - Additional trips sampled in NH and NJ will improve precision of estimates for both landings and discards.
 - Trips sampled in the South Atlantic (NC through FL) contribute to validation of logbook data for discards.
 - Additional data elements collected in FL contribute to estimated total removals from combined harvest and discard mortality.

- Data Delivery Plan:
 - Catch estimates, CPUE, and biological data available to the public through the Marine Recreational Information Program website.
 - Data and files are shared with ACCSP's Data Warehouse.
 - Data collected in NH and NJ delivered to ACCSP concurrent with base assignments.
 - Data collected from North Carolina delivered to ACCSP and routinely shared during regional stock assessments.
 - Biological data (lengths, weights, ages, and associated trip data) from Florida:
 - Housed in a relational database (SQL) on servers maintained by the Florida Fish and Wildlife Conservation Commission.
 - Shared with Gulf States Marine Fisheries Commission and included in FIN biological database.

- Data and analyses routinely shared during regional stock assessments and are available upon request.
- Multi-Partner/Regional:
 - The following ACCSP partners will benefit from this supplemental data collection:
 - Four states: FL, NC, NJ, NH
 - 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
 - USFWS
- In kind Contribution: \$20,328 (16% of requested plus in-kind)
- Funding Transition Plan:
 - In earlier years, proposals for this maintenance project requested funds for 100% of add-on sample requested by all partner states. The percentage of add-on sample that ACCSP funds are requested to support in FY19 has decreased to 48% (Table 2), compared to 91% in FY18.
 - Since state conduct of the MRIP Access Point Angler Intercept Survey (APAIS) began in 2016, many states are now able to conduct additional headboat sampling without ACCSP funds:
 - MA, CT, RI, NY, MD, and VA will conduct additional trips above base MRIP levels at no cost to ACCSP (Table 2).
 - ME and DE no longer request additional headboat sample.
 - NJ and NH continue to rely upon ACCSP funds for additional headboat sample.

The net result is a decreased dependence on ACCSP funding in FY19 in the Middle and North Atlantic regions.
 - Two states in the South Atlantic (GA, FL) currently do not receive allocation through MRIP for base level headboat sampling. In 2019, no partner states in this region will receive APAIS base level allocation for headboat at-sea sampling.
 - GA and SC will continue headboat sampling at no additional cost to ACCSP.
 - NC will augment sample for the loss of the NOAA base allocation and request continuance of FY18 level funding through ACCSP to maintain sampling levels in 2019
 - FL continues to rely upon ACCSP funds for 100% of headboat sampling.
 - The net result is a decreased dependence on ACCSP funding in FY19 in the South Atlantic region.
 - The ACCSP Recreational Technical Committee includes representatives from Atlantic coast states and NOAA Fisheries, and this Committee recommends that the additional samples historically collected through this maintenance proposal be included in future negotiations with NMFS via both the Atlantic and Gulf of Mexico cooperative agreements to increase the base sample sizes of Headboat at-sea sampling.
- Improvement in data quality/quantity:
 - This proposal requests funds to maintain a minimum level of data collection needed in the South Atlantic region,

- This proposal will fund 100% of headboat observer coverage on the Atlantic coast of Florida.
 - Requested funds will also maintain enhanced data collection in the Middle and North Atlantic regions.
- Impact on Stock Assessments:
 - Species impacted by this work are priorities for upcoming stock assessments, including:
 - Black Sea Bass, Bluefish, Cobia, Scup, Summer Flounder, and Weakfish will undergo either benchmark or update assessments through the Atlantic States Marine Fisheries Commission (ASMFC) NEFSC, and/or SEFSC in 2019 and 2020.
 - 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 fisheries along the Atlantic coast, and this project is the only source of representative information available to characterize the size composition of recreational discards.
 - 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.
 - 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 Angler 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 (Table 1). 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 \$107,087 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 Georgia 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.
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 NH, NJ and NC, 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 \$20,328 or 16% 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

With state conduct of the APAIS underway since 2016, the Recreational Technical Committee (RTC) continues to look ahead to a longer-term funding transition plan for this sampling. The funding history for this maintenance proposal is summarized in Table 5. This proposal has decreased from previous years' award amounts (Tables 5 and 6). Since the 2018 data collection period is ongoing and the budget/accomplishments comparison for this year are incomplete, the summary of costs for the previous year is provided in Table 6. A total of six states no longer request additional funds to support headboat add-ons above base sampling levels (MA, RI, CT, NY, MD, VA), and three states (ME, DE, SC)

discontinued additional sampling above base in previous years. Starting in 2019, states in the South Atlantic will no longer have base APAIS sample allocation for headboat mode. Two states (SC, GA) plan to conduct sampling at 2018 levels without requesting funds through ACCSP. NC will augment sampling and request additional ACCSP funds to maintain continuous sampling coverage. State and federal partners in the South Atlantic region are discussing how to transition when funding for this maintenance proposal sunsets; however, funds in this region are limited and an alternative funding source has currently not been identified.

References

Sauls, B., A. Gray, C. Wilson and K. Fitzpatrick. 2015. Size distribution, release condition, and estimated discard mortality of Red Snapper observed in for-hire recreational fisheries in the South Atlantic. SEDAR41-DW33. SEDAR, North Charleston, SC.

SEDAR (Southeast Data, Assessment and Review). 2016. SEDAR41 Stock Assessment Report South Atlantic Red Snapper. SEDAR, North Charleston, SC.

Sustainable Fisheries Branch, National Marine Fisheries Service. 2011. Standardized discard rates of U.S. Black Seabass (*Centropristus striata*) from headboat at-sea observer data. SEDAR25-DW13. SEDAR, North Charleston, SC.

Sustainable Fisheries Branch, National Marine Fisheries Service. 2015. Standardized catch rates of Red Snapper (*Lutjanus campechanus*) from headboat at-sea-observer data. SEDAR41-DW14. SEDAR, North Charleston, SC.

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
Raw Data Delivery to ACCSP (NH, NJ, NC)	X	X	X	X	X	X	X	X	X	X	X	X
Data delivery to SEDAR and GSMFC (FL)	X	X	X	X	X	X	X	X	X	X	X	X

Table 2. Headboat at-sea sample allocation (base sample) and additional trips to be conducted during 2019.

State	Number of Vessel Trips								Requested % Add-On (Funded by ACCSP)
	MRIP Base Sample	Jan/Feb	Mar/Apr	May/June	Jul/Aug	Sep/Oct	Nov/Dec	Total Add-On	
		Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6		
ME	16	-	-	-	-	-	-	0	0%
NH	20	-	1	2	3	1	-	7	35%
MA	44	-	-	-	-	-	-	0	0%
RI	28	-	-	-	-	-	-	0	0%
CT	20	-	-	-	-	-	-	0	0%
NY	50	-	-	-	-	-	-	0	0%
NJ	56	-	-	5	6	5	2	18	31%
DE	34	-	-	-	-	-	-	0	
MD	42	-	-	-	-	-	-	0	0%
VA	34	-	-	-	-	-	-	0	0%
NC	0	-	4	6	6	4	-	20	100%
SC	0	-	-	-	-	-	-	0	0%
GA	0	-	-	-	-	-	-	0	0%
East FL	0	16	22	22	22	22	16	120	100%
Total	344	16	27	35	37	32	18	165	48%

Table 3. Cost summary for funds requested from ACCSP.

NH	NJ	NC	FL
Personnel (a)	Personnel (a)	Personnel (a)	Personnel (a)
(10 hr/trip x \$20.60/hr x 7 trips x 2 staff) \$2,884	(8 hr/trip x \$19.00/hr x 18 trips x 0.5 tech staff) + (8 hr/trip x \$13.00/hr x 18 trips x 1 hourly staff) \$3,240		(10 hr/trip x \$15.00/hr x 120trips x 2 staff) \$36,000
Fringe (b)	Fringe (b)	Fringe (b)	Fringe (b)
51.07% \$1,473	53.95% tech + 7.65% hourly \$881		35.45% \$12,762
Travel (c)	Travel (c)	Travel (c)	Travel (c)
\$0.54/mi x 7 trips x 54 mi \$204	[(100 mi/trip*18 trips)/20 mpg]*\$4/gallon \$360	\$0.54/mi x 20 trips x 80 mi \$864	\$0.445/mi x 120 trips * 80 mi * 2 staff \$8,544
	Headboat fare (\$55/trip x 18 trips x 2 staff) \$1,980	Headboat fare (\$75/trip x 20 trips x 2 staff) \$3,000	Headboat fare (2 staff x \$62/trip x 120 trips) \$14,880
	Parking and highway tolls \$200	Parking and Permits \$0	Parking and highway tolls \$251
Total Direct Charges (i) \$4,561	Total Direct Charges (i) \$6,661	Total Direct Charges (i) \$3,864	Total Direct Charges (i) \$72,437
Indirect (j)	Indirect (j)	Indirect (j)	Indirect (j)
State indirect = 20% of TDC, charge 10% as per ASMFC policy \$456	15% of TDC \$999	26.8% of Salary and Wages \$ 0	State indirect = 25% of TDC \$18,109
Sum of Direct and Indirect (k) \$5,017	Sum of Direct and Indirect (k) \$7,660	Sum of Direct and Indirect (k) \$3,864	Sum of Direct and Indirect (k) \$90,546

Table 4. Cost summary for in-kind contributions.

FLORIDA	In kind	NOAA	In kind
Personnel (a)		Personnel (a)	
5% of time for one Research Scientist and two Assistant Research Scientists	\$6,500	5% one full time salary	\$10,000
Fringe (b)		Fringe (b)	
34.50%	\$2,243		
Supplies (d)		Supplies (d)	
pre-printed forms on waterproof paper, measuring boards, scales	\$425		
Other (h)		Other (h)	
Mailing, copying, cell phone service	\$1,160		
Total	\$10,328	Total	\$10,000

Table 5. ACCSP Funding Related to the For-Hire Headboat Fishery: 1999-2018.

Year	Project Description	Funds Received	# At-Sea Trips	Data Delivery
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	X
FY04	Increase charter and party/headboat sampling levels from ME through GA (100% increase)	\$533,410	456	X
FY05	Increase charter and party/headboat sampling levels from ME through FL (100% increase in general, FL HB sampling added)	\$666,740	565	X
FY06	Increase charter (100% increase) and party/headboat (50% increase ME-GA, FL level funded) sampling levels from ME through FL	\$389,700	560	X
FY07	Increase charter (100% increase) ME through GA and party/headboat (50% increase) sampling levels from ME through FL	\$391,940	357	X
FY08	Increase charter (100% increase) ME through GA and party/headboat (50% increase) sampling levels from ME through FL (excluding GA)	\$359,753	310	X
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	X
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	X
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	X
FY12	Increase party/headboat (50% increase) sampling levels from NH through FL (excluding ME, CT, RI, VA)	\$159,573	285	X
FY13	Increase party/headboat (50% increase) sampling levels from NH through FL	\$147,707	302	X
FY14	Increase party/headboat sampling levels from NH through FL	\$155,490	314	X
FY15	Increase party/headboat sampling levels from NH through FL	\$168,738	327	X
FY16	Increase party/headboat sampling levels from NH through FL (excluding SC)	\$179,286	327	X
FY17	Increase At-Sea Sampling Levels for the Recreational Headboat Fishery on the Atlantic Coast	\$155,373	247	X
FY18	Supplemental At-Sea Sampling for the Recreational Headboat Fishery on the Atlantic Coast	\$134,370	247	X

Table 6: Prior complete year (2017) Cost Summary Budget Narrative.

Florida		New Hampshire		Rhode Island		Massachusetts		Connecticut		New York	
Description	Cost	Description	Cost	Description	Cost	Description	Cost	Description	Cost	Description	Cost
Personnel (a)		Personnel (a)		Personnel (a)		Personnel (a)		Personnel (a)		Personnel (a)	
(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	(10 hr/trip x \$20.60/hr x 7 trips x 2 staff)	\$2,884		\$0	(\$236/trip x 18 trips x 1.5 staff)	\$6,372	(10 hr/trip x \$12.00/hr x 8 trips x 1 staff)	\$960		
Fringe (b)		Fringe (b)		Fringe (b)		Fringe (b)		Fringe (b)		Fringe (b)	
34.50%	\$11,903	51.07%	\$1,473					62.70%	\$602		
Travel (c)		Travel (c)		Travel (c)		Travel (c)		Travel (c)		Travel (c)	
\$0.445/mi x 120 trips * 80 mi	\$8,544	\$0.54/mi x 7 trips x 54 mi	\$204	2 FI x 8 trips 30 miles @ \$.535/mile	\$257			\$0.535/mi x 8 trips x 30 mi	\$128	\$0.54/mi x 18 trips x 85 mi	\$826
Headboat fare (2 staff x \$75/trip x 110 trips) + (1 staff x \$75/trip X 10 trips)	\$17,250			Headboat fare (\$65/trip x 8 trips x 2 staff)	\$1,040			Headboat fare (2 staff x \$40/trip x 8 trips)	\$640	Headboat fare (\$60/trip x 9 trips x 2 staff) + (\$60/trip x 9 trips x 1 staff)	\$1,620
Parking and highway tolls	\$240									Parking and tolls (\$27 x 6 trips)	\$162
Total Direct Charges (i)	\$72,437		\$4,561		\$1,297		\$6,372		\$2,330		\$2,608
Indirect (j)											
State indirect = 25% of TDC	\$18,109	State indirect = 20% of TDC, charge 10% as per ASMFC policy	\$456			10% of TDC	\$637	State indirect = 23.82% of Salaries	\$229		
Sum of Direct and Indirect (k)	\$90,546		\$5,017		\$1,297		\$7,009		\$2,559		\$2,608

New Jersey		Maryland		Virginia		North Carolina		Georgia	
Personnel (a)		Personnel (a)		Personnel (a)		Personnel (a)		Personnel (a)	
(8 hr/trip x \$19.00/hr x 18 trips x 0.5 tech staff) + (8 hr/trip x \$13.00/hr x 18 trips x 1 hourly staff)	\$3,240	(8 hr/trip x \$14.5/hr x 12 trips x 1.5 staff)	\$2,088	(8 hr/trip x \$20.00/hr x 15 trips x 1.5 staff)	\$3,600			10 hrs/trip x \$13/hr x 8 trips	\$1,040
Fringe (b)		Fringe (b)		Fringe (b)		Fringe (b)		Fringe (b)	
53.95% tech + 7.65% hourly	\$881	8%	\$167					1.45% FICA x personnel	\$15
Travel (c)		Travel (c)		Travel (c)		Travel (c)		Travel (c)	
[(100 mi/trip*18 trips)/20 mpg]*\$4/gallon	\$360	\$0.535/mi * 12 trips * 4 mi * 1.5 staff	\$433	\$0.54/mi x 30 trips * 50 mi	\$840	\$0.54/mi x 20 trips x 80 mi	\$864	\$0.535 x 29 mi/trip x 8 trips	\$124
Headboat fare (\$55/trip x 18 trips x 2 staff)	\$1,980	Headboat fare (\$75/trip x 12 trips x 1.5 staff)	\$1,350	Headboat fare (\$50/trip x 15 trips x 2 staff)	\$1,500	Headboat fare (\$75/trip x 20 trips x 2 staff)	\$3,000	Headboat fare (\$75/trip x 8 trips x 1 sampler)	\$600
Parking and highway tolls	\$200					Parking and Permits	\$280		
Total Direct Charges (i)	\$6,661		\$4,038		\$5,940		\$4,144		\$1,779
Indirect (j)									
15% of TDC	\$999	10% of personnel and fringe	\$349.44	10% of TDC	\$594	20% of TDC	\$829		
Sum of Direct and Indirect (k)	\$7,660		\$4,388		\$6,534		\$4,973		\$1,779

Table 7: Prior Complete Year (2017) Summary of Headboat Assignments Completed

State	Number of Vessel Trips								
	MRIP Base Sample	Add-On to Base	Jan/Feb	Mar/Apr	May/Jun	Jul/Aug	Sep/Oct	Nov/Dec	Total completed
			Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6	
ME	16	0	-	-	5	8	3	-	16(0)
NH	20	7	-	3	10	11	3	-	27(0)
MA	44	22	-	4	26	32	10	4	76(10)
RI	28	16	-	4	12	17	11	6	50(6)
CT	20	8	-	-	11	12	12	4	39(11)
NY	50	18	-	4	17	22	14	10	67(-1)
NJ	56	18	-	7	17	20	17	8	69(-5)
DE	34	0	-	2	7	9	5	2	25(-9)
MD	42	12	-	8	16	23	14	6	67(13)
VA	34	15	-	2	11	14	12	6	45(-4)
NC	56	20	-	8	21	23	17	5	74(-2)
SC	28	0	-	5	6	13	3	1	28(0)
GA	0	8	-	1	3	2	2	1	9(1)
East FL	0	120	21	24	19	22	17	16	119 (-1)
Total	428	264	21	72	181	228	140	69	711(19)

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EDUCATION

Clemson University, B.S. in Aquaculture, Fisheries, and Wildlife Biology, 1998.

WORK EXPERIENCE

October 2006 – Present: Wildlife & Fisheries Biologist, SCDNR-MRD/OFM
Core responsibilities involve overseeing collection of fisheries dependent data within the Office of Fisheries Management. Supervise biologists and natural resource technicians conducting creel surveys, managing data flow, and working with commercial fishermen and wholesale dealers to meet reporting requirements. Perform quality control and quality assurance review of all fisheries dependent data collected through both state and federal (NMFS) surveys. Work with other SCDNR personnel to plan budgets, write grants, and corresponding reports. Plan and implement data collection for fisheries managers as needs are identified in a variety of commercial and recreational fisheries. Plan and implement pilot projects and studies aimed at filling gaps in the state's fisheries dependent data. Serve as one of SCDNR's top advisors on the state's flounder fishery (*Paralichthys ssp.*), one of the top three recreationally important species in South Carolina. Assist managing/monitoring the horseshoe crab and commercial shrimp fisheries in South Carolina.

-State Representative (current Chair) for ACCSP-Recreational Technical Committee

PROFESSIONAL SOCIETIES

South Carolina Chapter of the American Fisheries Society

REFERENCES

David Whitaker, Assistant Deputy Director of Marine Resources Division, SCDNR
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Mel Bell, Director of Office of Fisheries Management, SCDNR-MRD
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Phil Maier, Director of Coastal Resources and Outreach, SCDNR-MRD
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Beverly J. Sauls, Research Scientist

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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: Recreational Technical Committee
- Gulf States Marine Fisheries Commission: Technical Coordinating Committee, Fisheries Information Network (Gulf FIN) Committee, and Data Management Subcommittee
- Southeast Data Assessment and Review (SEDAR): Data Workshop Panelist for South Atlantic and Gulf of Mexico stock assessments
- South Atlantic Fishery Management Council: Citizen Science Project Management Team

Select Peer-Reviewed Publications

2017. 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. *North American Journal of Fisheries Management* 37: 302-313.

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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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



United States Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southeast Fisheries Science Center
NOAA Beaufort Laboratory
101 Pivers Island Road
Beaufort, NC 28516 USA

August 1, 2018

Mike Cahall
Director
Atlantic Coastal Cooperative Statistics Program
1050 N. Highland St
Suite 200A-N
Arlington, VA 22201

Dear Mr. Cahall,

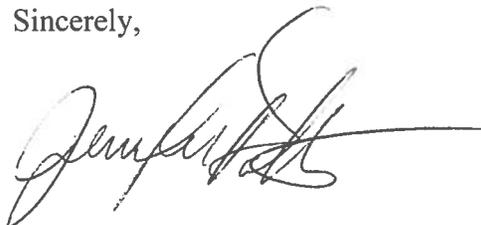
I appreciate you forwarding the reviewers' comments on my FY2019 Maintenance Project: "Continued processing and aging of biological samples collected from U.S. South Atlantic commercial and recreational fisheries." Regarding Blueline Tilefish, age reading is an issue and the assessment was recently conducted with mixed reviews. The ageing issues for Blueline Tilefish are best addressed through an age validation study. The NOAA Beaufort Laboratory is currently conducting age validation studies of more shallow water reef fish species. We are proposing and encouraging partner labs and universities in the region to seek funding for more in depth age validation study of Blueline Tilefish and other deep water species, such as snowy grouper. Blueline Tilefish is not on the near-term SEDAR schedule, so now is the time to get a study underway.

The budget for contract labor was increased for several reasons. The blanket purchase agreement (BPA) with the vendor providing contract labor to NMFS at the NOAA Beaufort Laboratory expired. This resulted in a new, considerably higher (>7%) fee schedule for the new vendor. Unfortunately, the FY18 awarded grant from ACCSP, which started in June 2018, was not quite enough to cover the cost of contract labor for a full year. The SEFSC has cobbled together funds to cover the shortfall. The SEFSC is still in transition with vendors for contract labor. The current vendor has already increased cost by 6% for the "bridge contracts", and we anticipate further increases after December 2018.

The AGO fee was requested in the 2019 budget at the request of the SEFSC leadership. Last year, SEFSC agreed to cover that fee, but SEFSC has since established a new protocol requiring all proposals to include the AGO fee. For background, the AGO fee was instituted near the end of FY16, so that is why it was not requested in past proposals.

I am very grateful for the support of your organization over the years. NOAA Beaufort Laboratory Life History Group have produced substantial amounts of age data, by due dates, for South Atlantic SEDAR stock assessments because of the grant funding from ACCSP. I wish to thank you and the panel for reviewing this year's proposal.

Sincerely,

A handwritten signature in black ink, appearing to read "Jennifer Potts", with a long horizontal flourish extending to the right.

Jennifer Potts

Attachment:

FY2019 Maintenance Project Proposal with response to reviewers' questions.

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 ageing of biological samples collected from U.S. South Atlantic
commercial and recreational fisheries**

Submitted by:
Jennifer Potts
NOAA National Marine Fisheries Service
SEFSC/Beaufort Laboratory
101 Pivers Island Rd.
Beaufort, NC 28516
Jennifer.Potts@noaa.gov

NOAA National Marine Fisheries Service ACCSP
Funding Proposal: Continue ageing 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 page20-21.

Applicant: NOAA Fisheries Service, Southeast Fisheries Science Center, Beaufort, NC

Principal Investigator:
Jennifer C. Potts

Project Title: Continued processing and ageing of biological samples collected from U.S. South Atlantic commercial and recreational

Project Type: Maintenance

Requested Award Amount: \$300,550

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

Original Date Submitted: June 11, 2018

Objectives:

The primary objective of the proposed work is to continue processing and ageing 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 FY2018 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 NOAA 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 participate in ageing workshops and exchange reference, or calibration sets, of processed otolith samples**. These collaborations will allow us to address collectively issues of **consistency in processing methodology and interpretation of age structures** between laboratories, allowing data sets to be combined for stock assessments. Staff at the NOAA Beaufort Laboratory have been actively involved in the **GSMFC/ASMFC Age Manual** update currently underway. The manual will further standardize processing and age reading methodology throughout the entire Atlantic coast. Also, because the NOAA 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. **Metadata associated with the age data from fishery-dependent sources will be provided to ACCSP in accordance with the Atlantic Coast Fisheries Data Collection Standards** (http://www.accsp.org/sites/default/files/ACCSP_StandardsandAppendices2012_Final05082012.pdf). **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 fifty-six 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) and Siegfried et al. (2016). Their studies 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, Yin and Sampson's study suggests improvement to the models can be made with increased age composition sampling, for the least cost. Siegfried et al. found that increased age composition data, specifically commercial age composition, had the greatest effect on the accuracy of assessments.

NOAA Beaufort Laboratory is in a unique position of holding fishery-dependent age data for many of the most important reef fish species of the U.S. South Atlantic dating back to the 1970s. These collections have been greatly enhanced because state natural resource agency partners and NMFS Southeast Fisheries 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 25,000 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.

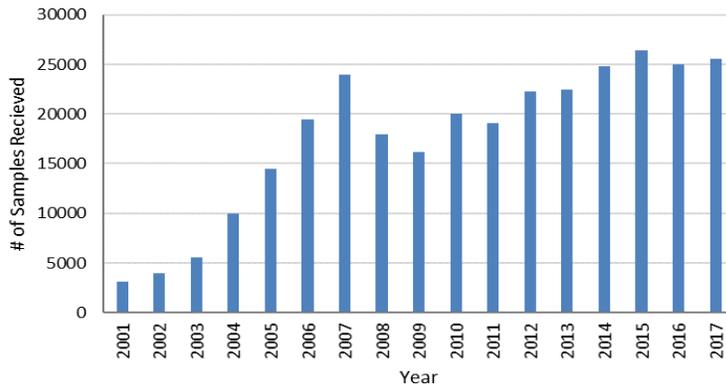
Another strong research recommendation from several SEDARs pertained to age and growth studies of the same species performed by more than one laboratory. Researchers have been asked to standardize processing techniques, be consistent in age determination analysis, and resolve ageing discrepancies between laboratories. **The NOAA 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 NOAA Beaufort in ageing of blueline tilefish, snowy grouper and cobia.** Funding is required to support workshops to discuss processing methodology and interpretation of the ageing 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.**

Validation of ages is another critical factor in stock assessments. Consistency between age readers produces precision, but accuracy is more important. Several southeast regional laboratories are currently conducting age validation projects for reef fish species. NOAA Beaufort Laboratory has finished age validation studies on red porgy and gray triggerfish through chemical marking and rearing experiment and has begun a similar study for vermilion snapper and black sea bass; SCDNR has conducted age validation studies on deep-water species such as blueline tilefish and wreckfish (Lytton et al, 2016) using bomb radio-carbon in otoliths;

and NMFS Panama City has used bomb radio-carbon or radiometric age validation techniques on golden tilefish and speckled hind (Lombardi-Carlson and Andrew, 2015; Allen et al., 2013). Funding will need to be sought for more in depth age validation of blueline tilefish and other deep-water species within their entire U. S. range (Atlantic and Gulf of Mexico). The regional laboratories are also collaborating with other state agencies and universities to expand the validation studies. These data will improve our between lab consistency in ageing, direct age workshops and improve stock assessments for management of the fisheries.

Ageing of reef fish species and fiscal support of that work at the Beaufort Laboratory have evolved over the years. Initially, ageing 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 ageing 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 - 2018, which is the primary source of funding for production ageing work at the Beaufort Laboratory. Through ACCSP (3 positions) and two NMFS FTE staff (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 per year for stock assessments. 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, gray triggerfish, and gray snapper. 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 – 2017.



Results/Benefits:

The NOAA Beaufort Laboratory has been collecting samples and ageing reef fish species for more than 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 ageing of fish from the 2019 - 2020 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 2019, following the completion of the data input requirements for scamp, cobia, tilefish and snowy grouper. Also, ongoing efforts to stay up to date on black sea bass, vermilion snapper, gag, red snapper, red grouper, blueline tilefish and gray triggerfish will be continued. The data provided will 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.

Ten species currently managed in the SAFMC Snapper Grouper FMP are listed in the upper 25% of the ACCSP Bio-Sampling Priority Matrix. Scamp will be on a SEDAR “Research Track” in 2019, which includes the South Atlantic and Gulf of Mexico, with assessments to follow in 2020. Data for snowy grouper and tilefish will be due to SEDAR mid-2019. Red snapper will start on a “Research Track” in 2020, and gag will also be assessed starting in mid-2020. Gray triggerfish, red grouper and black sea bass will have age data due by the end of 2020. 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 ten 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 25,000 white grunt samples and approximately 8,000 lane snapper samples dating back to the early 1980s. Over 900 days will be needed to process and read the backlog 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 NOAA 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, NOAA 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 2012 - 2017. The annual cost estimate per species for processing and ageing 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. 2012-2017 Fishery-dependent age samples of the top priority species received at the NOAA 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	2012	2013	2014	2015	2016	2017	Annual Cost to Age
BLACK SEA BASS	2333	2289	2196	2423	1448	1685	\$28,764
SNOWY GROUPE	949	644	818	861	787	726	\$20,976
BLUELINE TILEFISH	1200	811	494	262	328	458	\$17,450
GRAY TRIGGERFISH	1161	1008	1112	1125	1594	1527	\$36,686
GAG	1261	734	890	650	585	516	\$18,029
RED GROUPE	812	448	521	230	349	318	\$11,156
TILEFISH	1713	1035	911	558	895	836	\$27,274
RED PORGY	937	868	939	673	740	693	\$25,172

NOAA National Marine Fisheries Service ACCSP
 Funding Proposal: Continue ageing 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 page20-21.

RED SNAPPER	338	700	912	64	0	856	\$8,967
VERMILION SNAPPER	4902	4219	4121	3751	5187	4545	\$99,401
SCAMP	1021	647	825	452	752	547	\$22,491
GRAY SNAPPER	322	607	1336	1238	1325	713	\$18,313
WHITE GRUNT	995	1635	2374	2415	2649	1767	\$42,427
LANE SNAPPER	333	544	830	562	950	1309	\$14,978
Total	18277	16189	18279	15264	19605	16496	\$392,082

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 NOAA 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 and the GSMFC/ASMFC Age Manual. 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 28 years of experience ageing marine fish. Also, they will be required to read reference collections and meet acceptable standards of between reader consistency with no bias. 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.

NOAA Beaufort Laboratory will provide to ACCSP metadata for all age samples in accordance with ACCSP's standards included in Atlantic Coast Fisheries Data collection Standards part 3

(http://www.accsp.org/sites/default/files/ACCSP_StandardsandAppendices2012_Final05082012.pdf). "Other Biological Standards: Until these documents are completed and the methodologies approved as standard partners are encouraged to submit metadata on any biological data submitted to the ACCSP. These metadata parameters should include the following by species, for each data type (e.g., otoliths, fecundity, etc.): 1. Agency submitting data 2. Name of principle investigator 3. Description of interpretation methodologies used."

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:

NOAA National Marine Fisheries Service ACCSP
Funding Proposal: Continue ageing 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 page20-21.

Allen, A. H., B. K. Barnett, R. J. Allman, R. P. Moyer, and H. D. Trowbridge. 2013. Great longevity of speckled hind (*Epinephelus drummondhayi*), a deep water grouper, with novel use of postbomb radiocarbon dating in the Gulf of Mexico. *Canadian Journal of Fisheries and Aquatic Sciences*. 70(8): 1131 – 1140.

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.

Lombardi-Carlson, L., and A. H. Andrews. 2015. Age estimation and lead-radium dating of golden tilefish, *Lopholatilus chamaeleonticeps*. *Environmental Biology of Fish* 98:1787 – 1801.

Lytton, A. R., J. C. Ballenger, M. J. M. Reichert, and T. I Smart. 2016. Age validation of the North Atlantic stock of wreckfish (*Polyprion americanus*), based on bomb radiocarbon (¹⁴C), and new estimates of life history parameters. *Fishery Bulletin* 114(1):77 – 88.

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.

Siegfried, K. I., E. H. Williams, K. W. Shertzer, and L. G. Coggins. 2016. Improving stock assessments through data prioritization. *Canadian Journal of Fisheries and Aquatic Science* 73:1 – 9.

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			

Project Accomplishments Measurement:

The ultimate accomplishment measurement of this project will be the successful completion of all age data for SEDAR scheduled species in FY2019-2020. Five species are currently on the schedule for 2019 – 2020 which include Scamp, snowy grouper, tilefish, red snapper, and gag. The work will have been begun prior to the funding of this project. Some processing has already been done on those species, but the high volume of scamp, snowy grouper, and tilefish will take most of the staff's time to complete in time to meet the SEDAR schedule. Also, the lab intends to continue the ageing of samples collected in 2018 for the species listed in Table 1. As a result of age validation projects, gray triggerfish samples previously aged may need to be re-aged, creating a heavy workload on the staff.

Cost Summary:

	ACCSP	NMFS In-Kind	Total
Personnel Services/Salaries			
P.I. Salary		\$88,000	\$88,000
FTE Biologist salary		\$58,000	\$58,000
Contract staff (3)	\$285,000		\$285,000
Subtotal	\$285,000	\$146,000	\$431,000
Fringe Benefits			
\$138,500 *30%		\$43,800	\$43,800
Travel			
For age workshops (3 people * 1 trip)	\$2,000		\$2,000
Supplies			
Consumables (slides, saw blades, chemicals)	\$5,000		\$5,000
Facilities Cost Recovery Fee		\$61,000	\$61,000
Equipment (saws, image analysis systems)		\$70,000	\$70,000
AGO Fee	\$8,550		\$8,550
TOTAL	\$300,550	\$329,350	\$621,350

BUDGET NARRATIVE for REQUESTED FUNDING
July 1, 2019 – June 30, 2020

Category	Cost	Justification
Personnel	\$285,000	Contract staff positions are negotiated pricing through the federal government. (2080 hrs x \$45.67/hr x 3 staff). The purchase agreement with one vendor, whom we have used in the past, expired, and the new vendor cost was considerably higher. We anticipate an additional increase in the fee schedule, thus the higher hourly rate calculated in this request.
Travel	\$2,000	Travel for 3 contract personnel to age workshop for 3 days (\$2,000).
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.
AGO fee	\$8,550	As of July 2016 NOAA's Acquisitions and Grants Office charges a 3% fee to process contract services. The SEFSC has required all proposals that include contract services to include this fee.
Total Request	\$300,550	

BUDGET NARRATIVE for NMFS IN-KIND FUNDING
July 1, 2019 – June 30, 2020

Category	Cost	Justification
Personnel	\$146,000	Includes 83% of PIs time and 100% of FTE biologist. The personnel are directly involved with the day to day processing and ageing of samples, laboratory management and data analyses.
Fringe Benefits	\$43,800	Fringe benefits 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 IT 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.
Equipment	\$70,000	This proposal is not requesting any equipment to be purchased to accomplish the work. The equipment has been provided by NOAA and includes saws and image analysis systems.
Total	\$248,400	

Maintenance Project:

Table 2. History of related projects funded by ACCSP.

Funding Year	Project Title	ACCSP Funds	In-Kind Funds
2018	Continued processing and ageing of biological samples collected from U.S. South Atlantic commercial and recreational fisheries	\$251,600	\$248,400
2017	Continued processing and ageing of biological samples collected from U.S. South Atlantic commercial and recreational fisheries in response to ACCSP bio-sample targets	\$256,038	\$232,809
2016	Continued processing and ageing 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 ageing 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 ageing 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 ageing 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 FY 2018 (A), FY 2017 (B), FY2016 (C), FY 2015 (D), FY 2013 (E), and 2012 (F) funding.

A. 2018

Category	Cost	Justification
Personnel	\$245,000	Contract staff positions are negotiated pricing through the federal government. (2080 hrs x \$39.26/hr x 3 staff).
Travel	\$1,600	Travel for 3 contract personnel to age workshop for 3 days (\$1,600).
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	\$251,600	

B. FY2017

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 (\$1,600).
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	\$258,038	

C. FY2016

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	

D. FY2015

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	

E.FY2013

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.
Total Request	\$249,946		

F. FY2012

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), 2015 (C), 2016 (D), and 2017 (E) 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 Pogy	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

D. 2016

Species	# of Samples Sectioned	# of Samples Aged	SEDAR
Black Sea Bass		9,037	SEDAR 56
Vermilion Snapper	7,400	13,676	SEDAR 55
Gray Snapper	4,725	7,945	SEDAR 51
Greater Amberjack	687	131	Due 2018
Red Porgy	1635		Due 2018
Scamp	1,300	10,055	Due 2018
Lane Snapper	3971	1735	

E. 2017

Species	# of Samples Sectioned	# of Samples Aged	SEDAR
Cobia	242	242	SEDAR58
Greater Amberjack	120	2000	SEDAR59
Red Porgy	2043	4620	SEDAR60
Scamp	800	3600	Due 12/2018
Tilefish	1000	985	Due 6/2019
Snowy Grouper	1440		Due 6/2019
Gag		1200	
Red Grouper		420	
Vermilion Snapper	2812	742	
Lane Snapper	810	371	

Summary of Proposal for Ranking Purposes

Proposal Type: *Maintenance*

Primary Program Priority:

Biological Sampling: 100% of age samples collected from the nine 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. Until the module for biological data is developed within ACCSP Data Warehouse, metadata for age data will be provided to ACCSP.

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 NOAA 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 one other primary species remains to be processed –White Grunt (n > 25,000). 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 52% 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 in the SAFMC Research Prioritization Plan, 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 and recent publications on improving the accuracy of stock assessments - 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

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 Investigation 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)

Potts, J. C., and M. L. Burton. 2017. Preliminary observations on the age and growth of dog snapper (*Lutjanus jocu*) and mahogany snapper (*Lutjanus mahogoni*) from the Southeastern U.S. PeerJ 5:e3167; DOI 10.7717/peerj.3167

Burton, M. L., J. C. Potts, J. Page, and A. Poholek. 2017. Age, growth, natural mortality and reproductive seasonality of jolthead porgy, *Calamus bajaranado*, from Florida waters. PeerJ 5:e3774; DOI 10.7717/peerj.3774.

Burton, ML, Potts JC. 2017. Age, growth and natural mortality of cubera snapper *Lutjanus cyanopterus* from the southeastern United States. Bulletin of Marine Science, 93(3):815 – 828 DOI 10.5343/bms.2016.1116.

- Shertzer, K. W., J. Fieberg, J. C. Potts, and M.L. Burton. 2017. Identifying growth morphs from mixtures of size-at-age data. *Fisheries Research*, 185:83 – 89. DOI 10.1016/j.fishres.2016.09.032.
- Burton, M. L., J. C. Potts and D. R. Carr. 2016. Age, growth and natural mortality of blackfin snapper *Lutjanus buccanella* from the southeastern United States and U.S. Caribbean. *Gulf and Caribbean Research*, 27:66-73. DOI: 10.18785/gcr.2701.10.
- Potts, J. C., M. L. Burton, and A. R. Myers. 2016. Age, growth, and natural mortality of schoolmaster (*Lutjanus apodus*) from the southeastern United States. *PeerJ* 4:e2543; DOI 10.7717/peerj.2543
- 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.
- Burton, M. L., J. C. Potts, D. R. Carr, M. Cooper, and J. Lewis. 2015. Age, growth and mortality of gray triggerfish (*Balistes capriscus*) 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.
- 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., 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, 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.

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

An Updated Economic and Social Analysis of the Commercial Seafood Dealers of North Carolina

Submitted by:
Adam Stemle
North Carolina Division of Marine Fisheries
PO Box 769
3441 Arendell Street
Morehead City, NC 28557
adam.stemle@ncdenr.gov

Applicant Name: North Carolina Department of Environmental Quality, Division of Marine Fisheries

Project Title: An Updated Economic and Social Analysis of the Commercial Seafood Dealers of North Carolina

Project Type: New project

Principal Investigator: Adam Stemle, Fisheries Economics Program Manager, North Carolina Division of Marine Fisheries

Requested Award Amount: \$19,850

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

Date Submitted: Original: June 11, 2018; Revised & Resubmitted: August 13 2018¹

¹ See Appendix III on page 20 for ACCSP & ASMFC reviewer's comments and responses by the Principal Investigator

Objective:

The proposed study will seek to examine the changes in economic and social status of North Carolina's commercial seafood dealers. Specifically, information will be sought on changes in economic performance, business predictability, import & exports trends, industry consolidation, and to quantify the downstream supply chain economic impacts. The study will provide updated social and demographic information on North Carolina's commercial seafood dealers. Additionally, this study provides an opportunity for analytical insight into the methodology and costs that the Committee on Economics and Social Sciences and Atlantic Coastal Cooperative Statistics Program (ACCSP) partners need to consider for collecting socioeconomic fishery management-oriented data

Need:

North Carolina's coastal fishery resources are a major source of economic and social importance to many coastal communities. There is a need for regular, timely, and detailed socioeconomic information on the state's fishing industry to understand the cumulative impacts of regulations and restrictions on individual fishermen and their communities over time. The implementation of the Sustainable Fisheries Act of 1996 and Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006, the Atlantic Coastal Fisheries Management Act of 1993, and the Fisheries Reform Act of 1997 required the implementation of restrictive management measures to rebuild fish stocks and maintain a sustainable level of resource extraction. These management measures often cause consolidation of participants within a fishery, changes to business operations, and noticeable changes in fishing behavior.

Historically open access of common rights fisheries resources has led to overexploitation of many stocks. The findings of the original Magnuson-Stevens Act in 1976 stated "certain stocks of fish have declined to the point where their survival is threatened, and other stocks of fish have been so substantially reduced in number that they could become similarly threatened as a consequence" (MSFCMA 2014). Magnuson-Stevens' act required prevention of overfishing and rebuilding of overfished stocks through increased management measure where necessary. The Fisheries Conservation Act of 1996 and the reauthorization of 2007 strengthened and extended these requirements. To prevent overfishing and rebuild overfished stocks, management measures typically attempt to reduce the overall fishing mortality on stocks. This is commonly achieved through reducing overall effort in the fishery. Wilen (1976) and Bjørndal and Conrad (1987) are two widely cited studies on the economic relationship of open-access fisheries management and over exploitation of fish stocks. The North Carolina General Assembly enacted similar measures to Magnuson-Stevens' for its own state-managed species in 1997 with the Fisheries Reform Act (FRA). The FRA required management plans for all of the state's commercially and recreationally significant marine fisheries species, beginning in 1998 (FRA 1997). Magnuson-Stevens' act recognized that management measures directly impact stakeholders and communities both economically and socially as fisheries resources are of high importance to specific communities and management measure shall attempt "to minimize adverse economic impacts on such communities" (MSFCMA 104-297, 109-479, p. 58). Legislation such as the reauthorization of 2007 Magnuson-Stevens' Act, the FRA of 1997, and economic literature suggest that historical open-access fisheries required management measures to prevent and rebuild overfished stocks, which in turn requires a broad reduction in effort to reduce fishing mortality on certain stocks. This gives rise to the economic idea that management measures required like Magnuson-Stevens' will often cause consolidation of participants within a fishery, changes to business operations, and noticeable changes in fishing behavior to reduce fishing mortality

Understanding the impacts of these restrictions on the commercial fishing industry as a whole requires knowledge of the social and economic characteristics of these commercial seafood dealers and their businesses. This information is important for the development of both state and federal fishery management plans as required by the North Carolina Fisheries Reform Act of 1997 and the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act.

The North Carolina Division of Marine Fisheries (NCDMF) has been collecting socioeconomic information on commercial fishermen and commercial fishing operations in North Carolina for more than a decade. The North Carolina coast has been divided into five regions and fishermen fishing in those regions have been surveyed on a rotational basis to keep social, demographic, and economic information up to date. These data are used to compare industry trends over time as well as estimate the economic impact of commercial fisheries. Traditionally, these survey data have been updated every five years. These studies on economic contributions of the commercial fishing industry to the economy of North Carolina are estimated solely based upon commercial catch landings data and associated expenditures of commercial fishermen. Not included in the estimated impacts are downstream economic contributions that occur after a commercial fisherman's catch is sold, including the contributions of seafood dealers, restaurants, and transportation services.

In 2010, the NCDMF conducted a study to examine the economic impact and socioeconomic profile of the seafood dealer industry in North Carolina. Hadley and Crosson (2010) focused on researching the expenditures and business profiles of seafood dealers. The purpose of the proposed study is to update information collected by Hadley and Crosson (2010) to meet the need for regular, timely, and detailed socioeconomic information on the state's fishing industry.

Data Delivery Plan:

Once all surveys have been returned and the raw data has been cleaned and finalized, survey data will be delivered in the appropriate file format along with a final summary report of the findings. This will be a one-time data delivery as the collection of data will only occur within the reported study's timeframe.

Approach:

1) Determine the targeted population and design appropriate sampling procedures

A stratified random sampling technique will be used for this survey. Determination of group assignment will be based on trip ticket landings **and area-district**. Seafood dealer license holders with contact information and reports of their landings from 2018 will be obtained from the NCDMF license and trip ticket databases. Each licensed dealer (person or business) with at least \$10,000 in ex-vessel value from seafood sales **on average annually from 2015-2018** will be included in the sample frame. Licenses include the Fish Dealer License issued by NCDMF. **This threshold was originally used by Hadley and Crosson (2010), and in the interest of keeping the proposed study in the framework of an update to the 2010 study,** similar criteria will be used. The threshold was used in order isolate seafood dealers who operate on a part-time or limited basis, as a dealer license is required for any retail sale of seafood. **Some harvesters may possess a dealer license to sell excess catch themselves.**

2) Data collection

Survey responses will be collected using the Tailored Design Method (Dillman et al. 2014). The Tailored Design Method for survey research is proven methodology for maximizing complete responses based upon the social exchange theory. In short, surveys are designed to reduce costs, increase benefits, and

build trust so that the expected benefits of responding outweigh the costs of completing the survey. The survey employed for this study will determine if the general business operations for seafood dealers in the state have changed. Questions will focus on economic performance, changes in business profitability, perceptions of management measures, and changes in sales trends, as well as primary species dealt. Additionally, there will be questions identical to those used in the earlier studies by NCDMF that focus on expenditures, demographics, community reliance on commercial fishing, and business challenges. See Appendix 1 for a copy of the survey sent out by Hadley and Crosson (2010) that will be used as a template for this project's survey and will be updated with additional survey questions. The previous iteration of this study noted "Overall, dealers indicated that they are facing significant headwinds in the long-term operation of their businesses. The top three challenges that were mentioned include state and federal government regulations, difficulties in obtaining an adequate supply of seafood, and competition from imported seafood" (Hadley and Crosson 2010)

The return rate desired from this survey is 40% which equates to about 150 completed surveys based on the previous number of dealers meeting the minimum requirements. The previous iteration of this study achieved a positive 66% response rate. In 2009, 43.6% of dealers were deemed eligible to participate. In 2018 that would be approximately 300 potential survey respondents. With an eligible population of 300 and an expected return rate of 40%, we can estimate that we would need sample size of 119 respondents for our results to be statistically valid with a 95% confidence interval and a 7% margin of error. Secondary data from various sources (Bureau of Labor Statistics, North Carolina Office of State Budget and Management, etc.) will also be utilized.

The instrument will be pretested with a select group of seafood dealers who have a good history of trip ticket reporting and participation in any previous studies. The instrument will be revised according to feed-back received from the initial pretest.

Once the contact information for potential survey participants has been obtained, a random number generator will be used to assign the study identification number. Participants will be entered into the study according to the random number they were assigned.

A cover letter describing the need for the study will be sent to the potential participants explaining the survey. The letter will indicate the option to take the survey online via www.surveymonkey.com, or complete the included paper survey and return it in the self-addressed and pre-paid envelope. A reminder letter and an additional copy of the survey will be sent to dealers who do not return a survey after 2-3 weeks of the first mail out. Following the second attempt to reach the participant through mail, an interviewer will attempt to contact the dealer by phone. One full-time, temporary interviewer hired specifically for the project will conduct reminder phone calls of the seafood dealers. If the survey is not taken online or by mail, the interviewer will call the dealer to determine if they wish to participate, and if so, arrangements for a time to take the interview will be made.

At least four attempts will be made to reach the dealers by telephone after the initial mailings. If the dealer cannot be reached by telephone, or the US Post Office returns the letter, the interviewer will attempt to drive to the physical address listed in the NCDMF database. A dealer will be removed from the study and coded as "Ineligible-Unable to Locate" if they cannot be contacted after all these steps have been exhausted.

There are four codes that will be used to describe the level of participation by the dealer:

1. Completed survey
2. Refused to participate
3. Ineligible to participate
4. Incomplete Survey

For incomplete surveys, the interviewer will call at least twice to ask if they will complete missing information on the phone to ensure a complete survey. If they are not able to be reached by phone, an additional copy of the original returned survey will be printed from a scan, highlighted with missing fields, and re-mailed with a letter asking to please return the survey with the highlighted questions answered.

Non-response bias will be accounted for by utilizing the Tailored Designed methods to increase the likelihood of response. Non-response selected participants will receive a follow-up phone call with a separate instrument of questions to be asked. Data will also be checked for non-normal distribution.

The data to be collected in the survey will include information concerning:

- 1) Business characteristics and expenditures
- 2) Major buyers and markets
- 3) Species sold
- 4) Current issues and business challenges
- 5) Attitudes regarding fishery management
- 6) User group conflicts
- 7) Perceptions of the fishing industry
- 8) Individual socio-demographics of commercial seafood dealers

All data collection efforts will be completed under the direct supervision of the Principal Investigator and all data will be kept confidential.

Bjørndal, T. and Conrad, J. 1987. The Dynamics of an Open Access Fishery. *The Canadian Journal of Economics*, Vol. 20-1.

Dillman, D.A., J.D. Smyth, and L.M. Christian. 2014. *Internet, Phone, Mail, and Mixed-Mode Surveys. The Tailored Design Method*. Fourth Edition. John Wiley & Sons, Inc., New Jersey. 856 p.

Hadley, J. and S. Crosson. 2010. A Business and Economic Profile of Seafood Dealers in North Carolina. North Carolina Division of Marine Fisheries, Department of Environment and Natural Resources. 24 p.

Wilén, J.E. (1976) 'Common property resources and the dynamics of over-exploitation: The case of the North Pacific fur seal.' Paper No. 3 in the Programme in Resource Economics, Department of Economics, University of British Columbia.

3) Code and analyze data

All data will be entered into an Excel. Quantitative data will be analyzed using Excel and R statistical software. Economic data from the survey will be used to estimate the economic impacts of commercial fisheries on the study area using IMPLAN software. IMPLAN is a computerized database and modeling system that provides a regional input-output analysis of economic activity.

4) Complete final reports for fishery management plans.

Results from this survey will be analyzed along with data from previous surveys for the development of social and economic sections of state, ASMFC, and Federal Council fishery management plans. Project progress and a final report, as well as data, will be provided to the ACCSP.

Expected Results and Benefits:

The primary benefit of this study will be to update social and economic data on the commercial seafood dealer industry in North Carolina. Social and demographic information aids in assessing trends and the overall health of the industry in the region. Economic information such as operating costs and industry trade data is highly important in the estimation of the economic impact of seafood dealers and specific target species. This information is incorporated into fishery management plans and available for use by policy makers such as the Mid Atlantic Fishery Management Council, the South Atlantic Fishery Management Council, the North Carolina Marine Fisheries Commission, the Atlantic States Marine Fisheries Commission, and the North Carolina General Assembly.

Geographic Location:

The location and scope of this project would cover all of North Carolina and the adjacent state and federal waters fished by North Carolina standard commercial fishing license holders.

Milestone Schedule:

Month	1	2	3	4	5	6	7	8	9	10	11	12
Survey Preparation	X											
Outreach	X	X										
Interviews		X	X	X	X	X	X	X				
Analysis									X	X		
Report										X	X	X

Project Accomplishment Measurement:

The goal of the proposed study is to collect information on the socioeconomic changes to the commercial seafood dealer industry originating from management actions taken as a result of the Sustainable Fisheries Act of 1996 and Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006, and the North Carolina Fisheries Reform Act of 1997. Additional data on expenditures, marketing characteristics, demographics and dealers’ perceptions of the fisheries resources and management measures will also be collected. To adequately meet these goals, the action items listed in the “Approach” must be closely followed and a statistically significant sample size must be obtained. Data and results will be made available to the federal fishery management councils, the National Marine Fisheries Service, the North Carolina Division of Marine Fisheries, all users of the ACCSP Data Warehouse, and all of the general public. The final report will be disseminated through NCDMF website and made available to all interested parties that may inquire about the study.

Cost Summary:

Expense	ACCSP Request	State In-Kind
Personnel		
Temp – 480 hours * \$17.96/hr	\$8,621	
Economist (NCDMF) – 120 hours * \$25.20/hr		\$3,024
Subtotal	\$11,645	
Fringe		
Temp	\$818	
Economist (26.09% + \$5,869/year for health insurance – insurance for 120 hours = \$338.4)		\$1,128
Subtotal	\$1,946	
Indirect		
Temp (26.8%)	\$2,311	
Subtotal	\$2,311	
Subscription Services	\$400	
Survey materials (photo copies, office supplies, etc.)	\$3,000	
Postage	\$2,000	
Survey reward	\$200	
Travel	\$2,500	
Subtotal	\$8,100	
Column Totals	\$19,850	\$4,152
TOTAL Request	\$19,850	
Total Project Cost	\$24,002	
% Contribution	83%	17%

Cost Justification:

Personnel: \$11,645

To administer the survey and build a database of responses, one temporary, part-time Social Research Assistant I position will be hired through the state’s temporary employment agency, Temporary Solutions, and will be paid an hourly wage of \$14.83 per hour for 480 hours in FY 2019. Temporary Solutions charges a rate of \$17.96 per hour, which is inclusive of wages, social security (7.65% of wages) and a \$2/hour administrative fee (\$17.96/hr * 480 hours = \$8,620.80).

In-Kind Economist salary is 120 hours * \$25.20/hr=\$3,024

Fringe: \$1,946

An additional \$136.30 per month is budgeted for healthcare costs associated with the Affordable Care Act (\$136.30/month * 6 months = \$817.80).

Fringe for the Economist is based on 26.09% of salary (\$526) + \$5,869/year for health insurance. Health insurance for 120 hours = \$225.60. Total fringe for Economist is \$1,128.

Indirect: \$2,311

Indirect rate for temporary employee is based on NCDMF indirect rate for federal grants of 26.8%. Indirect rate is only applied to direct salaries and wages including vacation, holiday, sick pay and other paid absences but excluding all other fringe benefits ².

Subscription Services: \$400

An updated Survey Monkey “advantage” subscription. NCDMF has used Survey Monkey for quite some time to conduct various socioeconomic survey; offering email & digital response. It continues to prove to be one of the premier online survey service.

Survey materials (photo copies, office supplies, etc.): \$3,000

Letters will be mailed to possible survey participants introducing and describing the proposed study and providing a copy of the survey that can be completed and mailed back to NCDMF via an included envelope with postage that is prepaid. An estimated 1,000 surveys will be distributed as several mailings will occur.

Postage: \$2,000

Postage will be needed for initial mailings, follow-up mailings, and for prepaid postage on envelopes to return surveys to NCDMF.

Survey Reward: \$200

As an incentive for survey participation, names of four participants that fully complete the survey will be drawn at random and mailed a \$50 Visa gift card.

Travel: \$ 2,500

Travel expenses are being requested to attend and present the findings of this study at the North American Association of Fisheries Economists (NAAFE). This is a biennial forum that host international group of industry, government and academic practitioners of fisheries economics. Expected expenses are airfare, hotel, registration fees, transportation, and per diem for meals. Expected travel cost is based on the Principal Investigator’s previous travel to NAAFE 2017.

Funding Transition Plan

This project should be completed within the grant cycle and will not require additional funding in subsequent years to be maintained.

² See Appendix II for current NCDEQ - USEPA indirect agreement

Summary of Proposal for Ranking Purposes

Proposal Type: *New*

Program Priority

Catch and Effort: 0%

Biological Sampling: 0%

Bycatch/Species Interactions: 0%

Social and Economic: 100%

The NCDMF trip ticket program collects prices by species and market grade from dealers on a voluntary basis to estimate the ex-vessel value for each species reported to the program. This value is used by the NCDMF Economist when creating economic profile reports and writing socio-economic sections of state FMPs. Value and price data are provided to the ACCSP Data Warehouse with trip level landings data.

Project Quality Factors

Multi-Partner/Regional impact including broad applications:

This information will be available for use by policy makers such as the Mid Atlantic Fishery Management Council, the South Atlantic Fishery Management Council, and the Atlantic States Marine Fisheries Commission. The data and information collected in this study will provide valuable insight into North Carolina's seafood dealers role in regional seafood market trade and impact to surrounding state's economies.

Contains funding transition plan/Defined end-point:

The goals defined in this project should be completed within the grant cycle (see Page 8)

In-kind contribution:

17% (See cost table on page 7)

Improvement in data quality/quantity/timeliness:

Update social and economic data for seafood dealers in North Carolina increasing timeliness of data used to create economic impacts related to commercial fishing in the state, and data for use in interstate and federal FMP development. (See page 3)

Potential secondary module as a by-product:

None

Impact on stock assessment:

None

Appendix 1

1. Introduction

*** 1. Please enter your last name.**

*** 2. Please enter the identification number on the letter you received.**

Id #:

3. Please provide your email address:

4. What town is this business located in?

2. background questions

5. What would you consider to be the most important fish or shellfish for your business?

6. What would you consider to be the single biggest challenge to your dealer business at this time?

7. NOT including yourself, how many year-round employees did you have last year?

8. NOT including yourself, how many seasonal employees did you have last year?

9. What months did you use seasonal employees?

	January	February	March	April	May	June	July	August	September	October	November	December
Month	<input type="checkbox"/>											

3. Expenses

10. In DOLLAR terms (not pounds), what percentage of your sales last year were...

% sold directly to customers from my shop	<input type="text"/>
% sold to restaurants	<input type="text"/>
% sold to another dealer (in-state)	<input type="text"/>
% shipped to an out-of-state dealer	<input type="text"/>
% other	<input type="text"/>

11. How much would you estimate that your dealer business spent last year

on...

\$ spent on purchases from NC fishermen

\$ spent on purchases from other NC fish dealers

\$ spent on purchases of fish from out of state

\$ spent on electricity

\$ spent on water bills

\$ spent on telephones (including business cell phones)

\$ spent on building repair and other maintenance costs

\$ spent on insurance (including health)

\$ spent on office supplies, computers etc

\$ spent on rent (if you do not own the property where the business operates)

\$ spent on business mortgage, loan payments or other banking costs

\$ spent on wages and payroll

\$ spent on shipping containers

\$ spent on transportation costs

\$ spent on non-seafood products that you sell (seasonings, cookbooks, etc) in this business

\$ spent on other costs

12. How much are your property taxes where the business operates?

13. What was the total dollar value of your sales last year?

14. How much (in dollar terms) did you lose to spoilage of the product?

4. Thank you!

The North Carolina Division of Marine Fisheries is expanding its data collection on the commercial fishing industry, and your willingness to take this survey is appreciated.

Sincerely,

Scott Crosson, Ph.D.
Socioeconomics Program Manager

15. Please add any comments you have on the structure or substance of this survey.

Appendix II



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460
COGNIZANT AGENCY
NEGOTIATION AGREEMENT

Page 1 of 2

State of North Carolina
Department of Environmental Quality
Raleigh, North Carolina

Date: March 30, 2018
Filing Ref: February 3, 2017

The indirect cost rates contained herein are for use on grants and contracts with the Federal Government to which Office of Management and Budget 2 CFR Part 200 applies, subject to the limitations contained in the Circular and in Section II, A below.

SECTION I: RATES

Type <u>Fixed:</u>	Effective Period		Rate	Base
	From	To		
Marine Fisheries	7/1/2018	6/30/2019	26.8%	(a)
Coastal Management	7/1/2018	6/30/2019	25.8%	(a)
Waste Management	7/1/2018	6/30/2019	17.5%	(a)
Land Resources	7/1/2018	6/30/2019	19.9%	(a)
Air Quality	7/1/2018	6/30/2019	13.9%	(a)
Division of Mitigation Services	7/1/2018	6/30/2019	15.5%	(a)
Environmental Assistance & Customer Service	7/1/2018	6/30/2019	10.2%	(a)
Water Infrastructure	7/1/2018	6/30/2019	13.5%	(a)
Water Resources	7/1/2018	6/30/2019	13.7%	(a)

Basis for Application:

(a) Direct salaries and wages including vacation, holiday, sick pay and other paid absences but excluding all other fringe benefits.

Treatment of Fringe Benefits: Fringe benefits are specifically identified to each employee and are charged individually as direct costs.

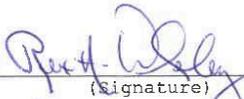
SECTION II: GENERAL

A. **LIMITATIONS:** The rates in this Agreement are subject to any statutory and administrative limitations and apply to a given grant, contract or other agreement only to the extent that funds are available. Acceptance of the rates is subject to the following conditions: (1) Only costs incurred by the department/agency or allocated to the department/agency by an approved cost allocation plan were included in the indirect cost pool as finally accepted; such costs are legal obligations of the department/agency and are allowable under governing cost principles; (2) The same costs that have been treated as indirect costs have not been claimed as direct costs; (3) Similar types of costs have been accorded consistent accounting treatment; and (4) The information provided by the department/agency which was used to establish the rates is not later found to be materially incomplete or inaccurate by the Federal Government. In such situations the rate(s) would be subject to renegotiation at the discretion of the Federal Government.

- B. CHANGES. The fixed rate contained in this agreement is based on the organizational structure and the accounting system in effect at the time the proposal was submitted. Changes in the organizational structure or changes in the method of accounting for costs which affect the amount of reimbursement resulting from use of the rate in this agreement, require the prior approval of the authorized representative of the responsible negotiation agency. Failure to obtain such approval may result in subsequent audit disallowances.
- C. THE FIXED RATE contained in this agreement is based on an estimate of the cost which will be incurred during the period for which the rate applies. When the actual costs for such a period have been determined, an adjustment will be made in the negotiation following such determination to compensate for the difference between the cost used to establish the fixed rate and that which would have been used were the actual costs known at the time.
- D. NOTIFICATION TO FEDERAL AGENCIES: Copies of this document may be provided to other Federal agencies as a means of notifying them of the agreement contained herein.
- E. SPECIAL REMARKS: Please confirm your acceptance of the terms of the indirect cost rate agreement by signing and returning this letter to me. Please retain a copy for your records.

ACCEPTANCE

The undersigned official warrants that he/she has the proper authority to execute this agreement on the behalf of the State Agency:



(Signature)
Rex A. Whaley

(Name)
Chief Financial Officer

(Title)
NC DEQ

(Agency)
4/3/2018

(Date)

By the Federal Agency:

JACQUELINE SMITH

(Signature)
Digitally signed by
JACQUELINE SMITH
Date: 2018.03.30 14:38:02
-04'00'

Jacqueline Smith, Rate Negotiator
Financial Analysis and
Oversight Service Center
U.S. Environmental
Protection Agency

Negotiated by: Jacqueline Smith
Telephone: (202) 564-5055

Adam T. Stemle

EDUCATION

University of Rhode Island Kingstown, RI
Master of Science in Environmental and Natural Resource Economics (2014)

University of Georgia Athens, GA
Bachelor of Science in Environmental Economics and Management (2012)

PUBLICATIONS

- Stemle, A., et al., 2016 "Have Dockside Prices Improved after MSC Certification? Analysis of Multiple Fisheries". *Fisheries Research* 182, 116–123
- Liese, C., Stemle, A. 2017. Economics of the Federal South Atlantic Shrimp Fisheries - 2012. NOAA Technical Memorandum NMFS-SEFSC-710, 26p.
- Stemle, A., and C. Wiegand. 2017. A Social and Economic Analysis Of Commercial Fisheries In North Carolina: Core Sound to the South Carolina State Line. Division of Marine Fisheries, Morehead City, N.C. Atlantic Coastal Fisheries Cooperative Management Act (ACFCMA), National Oceanic and Atmospheric Administration, under Grant Award NA15NMF4270334.

PROFESSIONAL EXPERIENCE AND RESEARCH

- North Carolina Department of Marine Fisheries* Nov. 2016- Present
Socioeconomic Program Manager – Morehead City, NC
- Analyze economic and social effects of proposed and actual fisheries statutes, rules, and proclamations
 - Develop and implement research topics and surveys to provide baseline and trend data and analyses concerning economic and social values of coastal fisheries
 - Conduct Marine Fisheries Commission Fiscal Rule Analyses and prepare socioeconomic aspects of state fishery management plans
 - Conduct socioeconomic assessments on regional and Atlantic coastal states under the auspices of the Atlantic States Marine Fisheries Commission and Regional Fishery Management Councils
 - Acquire funding for development of the NCDMF Socio-economic Program, and assist other License and Statistics and NCDMF initiatives
 - Manage temporary and part-time employees implementing social and economic research surveys
 - Principal Investigator on a NOAA Fisheries Saltonstall-Kennedy Grant funded study

University of Miami/ NOAA National Marine Fisheries Service

Mar. 2015-Aug. 2016

CIMAS Contractor – Southeast Fisheries Science Center, Key Biscayne FL

- Implemented the 2016 For-Hire Economic Survey for Federal Gulf and South Atlantic Permit Holders. Duties include: designing a statistical sampling frame and instrument, preparing OMB materials, conducting personal interviews and focus groups, data processing and statistical, and econometric analysis. Results will be disseminated to the public through technical reports written using LaTeX, R, and Knitr.
- Oversee the Annual Economic Mail Survey of Federal Gulf and South Atlantic Shrimp Permit Holders including survey mail outs, raw data processing, analyses, and communication with respondents
- Prepared dynamic and replicable publications for NOAA’s Marine Fisheries Review, and technical reports using LaTeX
- Automate NMFS SEFSC data collections for updating and improving catch share performance indicators in the southeast.

University of Rhode Island

Sep. 2012 - Aug. 2014

Graduate Research Assistant

- Worked on two research projects funded by the USDA and Rhode Island Sea Grant.
- Conducted experimental auction and survey sessions with 400 public participants.
Oversaw multiple data collections and performed statistical and econometrical analysis
Designed two treatment based difference in differences econometric models.
Published an article in Fisheries Research

University of Rhode Island Outreach Center

May 2013-Sept. 2013

Graduate Energy Fellow

- Worked as a Data Collection Specialist for the Rhode Island Public Energy Partnership funded through the U.S. EPA
- Supervised a team of five undergraduate fellows in collecting energy consumption data for all of Rhode Island State, Municipal and Public facilities and buildings
- Worked jointly with Rhode Island Office of Energy Resources, State and Municipal Officials, and National Grid
- Presented findings to local municipal and state officials

SKILLS

- Comprehensive knowledge of statistical software such as R, STATA and SAS
- Ample econometric analysis experience
- Proficient skills with Python and LaTeX for multiple operating systems
- Comprehensive Excel, Word, and PowerPoint knowledge
- Outreach driven social science research experience
- Data collection, synthesis, and management experience
- Excellent communication and speaking skills

Appendix III

Reviews and Questions from the ACCSP Operations and Advisory Committees for: *An Updated Economic and Social Analysis of the Commercial Seafood Dealers of North Carolina*

Questions

- *To what baseline are the data compared—data from the previous iteration of the survey only or additional historical data?*

The data will be compared to the previous iteration of this survey. NCDMF does not regularly collect economic data from seafood dealers such as operating expenditures, revenue, employee compensation, etc. Mandatory reporting of ex-vessel prices is not a statutory requirement for seafood dealers in North Carolina.

- *Please explain how you will ascertain whether any apparent changes in economic and social status of North Carolina's commercial seafood dealers are due to regulations as opposed to other causes.*

The previous iteration of this survey asked respondents a series of question designed to rank perceptions and attitudes of management measures and their implications on the fisheries and business operations. This study will utilize the same set of questions and differences in the responses of these questions will be compared to the previous iteration. Relevant commercial harvest trip ticket data, (including overall landings and value estimates) will used in conjunction with this studies survey data to profile changes to the industry in the last ten years . It is difficult to isolate only the direct relationship of changing management efforts economic and social status changes of North Carolina's commercial seafood dealers. The focus of this study is to collect voluntary updated economic, demographic, and stated perceptions data of the regulated community and utilize relevant statistical commercial harvest data to update a profile on the socioeconomics of North Carolina seafood dealers. Collecting voluntary socioeconomic data through this study provides analytical insight to the methodology and costs that the CESS & ACCSP partners need to consider for collecting socioeconomic fishery management-oriented data

The "Description of Need" states, without including evidence from NCDMF or reference to the literature, that Magnuson-Stevens imposed "restrictive management measures" that "often cause consolidation of participants within a fishery, changes to business operations, and noticeable changes in fishing behavior". Does the NCDMF propose to focus on fishery supply chains governed by catch shares, or fisheries affected by capacity reduction efforts such as limited entry or buybacks?

- o *If so, why? i.e., what are the organizing hypotheses vis-a-vis the supply chain?*

The previous iteration of this study cited the reauthorization of the Magnuson-Stevens act in 2006 as a broad source for increasing regulation and management measures to protect the long-term viability of fisheries resources compared to historical management. Historically open access of common rights fisheries resources has led to overexploitation of many stocks. The findings of the original Magnuson-Stevens act in 1976 stated “certain stocks of fish have declined to the point where their survival is threatened, and other stocks of fish have been so substantially reduced in number that they could become similarly threatened as a consequence” (MSFCMA 2014). Magnuson-Stevens act required prevention of overfishing and rebuilding of overfished stocks through increased management measure where necessary.

The Fisheries Conservation Act of 1996 and the reauthorization of 2007 strengthened and extended these requirements. To prevent overfishing and rebuild overfished stocks, management measures typically attempt to reduce the overall fishing mortality on stocks. This is commonly achieved through reducing overall effort in the fishery. Wilen 1976 and Bjørndal & Conrad 1987 are two widely cited studies on the economic relationship of open-access fisheries management and over exploitation of fish stocks. The North Carolina General Assembly enacted similar measures to Magnuson-Stevens' for its own state-managed species in 1997 with the Fisheries Reform Act (FRA). The FRA required management plans for all of the state's commercially and recreationally significant marine fisheries species, beginning in 1998 (FRA 1997). Magnuson-Stevens' act recognized that management measures directly impact stakeholders and communities both economically and socially as fisheries resources are of high importance to specific communities and management measure shall attempt "to minimize adverse economic impacts on such communities" (MSFCMA 104-297, 109-479, pg 58). Legislation such as the reauthorization of 2007 Magnuson-Stevens' Act, the FRA of 1997, and economic literature suggest that historical open-access fisheries required management measures to prevent and rebuild overfished stocks, which in turn requires a broad reduction in effort to reduce fishing mortality on certain stocks. This gives rise to the economic idea that management measures required like Magnuson-Stevens' will often cause consolidation of participants within a fishery, changes to business operations, and noticeable changes in fishing behavior to reduce fishing mortality.

NCDMF is not proposing that the focus of this study will solely be on fisheries that have any limited entry or quota/share systems. The intent of this study is to focus on the socioeconomics of North Carolina Seafood Dealers and if management measures required by the Magnuson-Stevens' Act, or the North Carolina Fisheries Reform Act have any real or perceived effect on North Carolina Seafood Dealers.

- *If not, consider asking the dealers to identify or estimate what % of the shell-/fish they buy come from catch share vs. commons fisheries*

This is an intended question, although other than Stripped Bass (*Morone saxatilis*) I'm not aware of anything other species managed under a share quota.

- *In either case, ask the dealers to estimate the difference in the number of fishermen selling to them over past 5 years in order to be able to see whether economic changes since 2010 correspond to changes in fisheries regulations.*

Acknowledged and agreed. Will include in the instrument.

- *Why is Magnuson highlighted but there is no mention of the Atlantic Coastal Fisheries Management Act as a relevant mandate to NC fisheries and seafood dealers? Are you only dealing with federally managed (SAFMC/MAFMC) species? If PIs agree, please add ACFCMA to the justification section.*

ACFMA and NC-FRM have been added to the justification section. No the study includes seafood dealers of all commercial species landed in North Carolina.

- *How is the stratification selected? Is it by area, size of business in pounds handled, dollar amount, or otherwise?*

Stratification will be done by respective area-districts and total pounds recorded according to the NCDMF commercial fishing trip ticket system to ensure adequate sampling of dealers state-wide of. Dealers can be concentrated in specific areas and species landings vary around the state.

- *What criteria were used to select at least \$10,000 in ex-vessel value from 2018 seafood sales for inclusion in the sample frame?*

The \$10,000 threshold was originally used by Crosson and Hadley (2010), and in the interest of keeping the proposed study in the framework of an update to the 2010 study, similar criteria will be used. The \$10,000 threshold was used in order isolate Seafood Dealers who operate on a part-time or limited basis, as a dealer license is required for any retail sale of seafood. Some harvest may possess a dealer license to sell excess catch themselves. We are specifically interested in full-time active seafood dealers who are not harvesters.

- *Is there a minimum threshold return rate needed to ensure valid/representative results?*

43.6% of dealers were deemed eligible in 2009. In 2018 that would be approximately 300 potential survey respondents. With an eligible population of 300 and an expected return rate of 40%, we can estimate that we would need sample size of 119 respondents for our results to be statistically valid with a 95% confidence interval and a 7% margin of error. (double check math, drew on eligible population with

- *Will possible non-response bias be addressed?*

Yes, we will attempt to address any non-response bias through a non-response telephone call will be attempted. Revised the methodology to include this.

- *p.8 - Does the \$400 include additional training materials or just the survey subscription?*

The \$400 training materials is exclusively for a Survey Monkey “advantage” subscription. NCDMF has used Survey Monkey for quite some time to conduct various socioeconomic survey; offering a email & digital response. It continues to prove to be one of the premier online survey service. Revised renaming to subscription services rather than training materials.

Recommendations

- *A bit more history about this research program would be useful for the reviewers.*
 - o *What has NC DMF learned from previous iterations of the study with regards to sampling design?*
 - o *Include a summary of key findings from Hadley & Crosson's 2010 survey to help reviewers understand NCDMF's organizing hypotheses.*

The previous iteration of this study had a positive response rate of 66%. The principal investigator of this study did not conduct the previous iteration. Sampling design from the previous iteration appears to have been effective. Recent economic surveys conducted by the NCDMF of commercial harvesters indicate that response rates are declining as a contentious political climate surround current North Carolina fisheries management. Low burden, succinct survey instruments coupled with outreach measure are key to generating an effective response rates.

The previous iteration of this study noted “Overall, dealers indicated that they are facing significant headwinds in the long-term operation of their businesses. The top three challenges that were mentioned include state and federal government regulations, difficulties in obtaining an adequate supply of seafood, and competition from imported seafood” (Crosson & Hadley 2010)

- *Sampling Frame*

- *Indicate the current population of dealers, and the number of "eligible" dealers in 2010 vs 2018 from the NCDMF's Fish Dealer License database.*

In 2009, there were 683 licensed dealers in North Carolina who reported commercial landings. Any person or business holding a dealer license is considered a seafood dealer. In the most recent year of 2016 there were 575 dealers who reported landings.

Recommend using multi-year total or average of dealer landings in order to account for inter-annual variability; using 2018 data only may give a less representative sampling frame.

Agreed, will move to a 3-year average or 5 depending on recommendations from fellow NCDMF Staff

- *Pre-testing could prove valuable to ascertain if there are current issues with the dealers that may not have been considered, or if some questions are non-issues.*
Will implement a pretest with a select group of dealers, updated proposal to indicate this.
- *Consider asking the dealers for additional data on the following:*
 - *Major buyers and markets*
 - *Amount and/or percent of shell-/fish sold as food vs. bait vs. fertilizer, industrial.*
 - *Species*
 - *Amount and/or Percent wild vs. cultivated*
 - *Amount and/or Percent local vs imported*
 - *Amount and/or Percent waste (i.e., amount/% disposed of w/o finding a market)*
 - *Current issues and business challenges*
 - *Attitudes regarding fed/state management of dealers re. compliance w/ fed/state fishery and health laws*
 - *Attitude/perceptions of fed/state enforcement efforts vis-a-vis dealers, fisheries, supply chain etc.*
 - *Attitudes regarding fishery management*
 - *User group conflicts*
 - *Perceptions of the fishing industry - regulation of the supply chain.*
 - *Individual socio-demographics of commercial seafood dealers*
 - *Cost for renting &/or leasing freezer space.*
- *Collect and independently report basic regulatory info and compliance data regarding the dealers.*
- *From a CESS & ACCSP perspective, it would be useful if one of the survey objectives included providing analysis insight to the methodology and costs that the CESS & ACCSP partners need to consider for collecting socioeconomic fishery management-oriented data*
 - *For example, it appears that some of the check-off answers for question 46 in the preliminary NC question list are congruent with this CESS/ACCSP consideration.*

Objective will be updated in the proposal to include CESS/ACCSP objective.

- *p. 5 - Remove the word "database" after Excel.*
- *p. 5 - Add "to be used for development of social and economic sections of state, ASMFC, and Council fishery management plans"?*

CESS Reviews of FY19 Socioeconomic ACCSP Project Proposal from NC

Review 1

Comments

- *Supports funding the proposal. It looks straightforward and of good quality.*

Recommendations

- *If there are email addresses on file for the dealers/processors, then send an email to the online version of the survey first, to save costs of mailing, and follow with a paper copy if they don't complete the online version in one week.*

Review 2

Comments

- *In the reviewer's experience, 40% is a very high response rate for a mail survey, though this may not be the case for NC, which may typically be better.*

The last iteration of this survey had a 66% response rate. Objectively we are hopeful that we could achieve a similar result, but chose to go with a more conservative, but hopeful estimate.

- *It is difficult to give direct comments on questions that "may be included" on the survey.*

Clarifying Questions

- *How is the stratification selected? Is it by area, size of business in lbs handled, or dollar amount, or otherwise?*

See response to similar question in OAC reviewers section above

Recommendations

- *Pre-testing could prove valuable to ascertain if there are current issues with the dealers that may not have been considered, or if some questions are non-issues.*

See response to similar question in OAC reviewers section above

Review 3

Clarifying Questions

- *The "Description of Need" states, w/o including evidence from NCDMF or reference to the literature, that Mag Stevens imposed "restrictive management measures" that "often cause consolidation of participants within a fishery, changes to business operations, and noticeable changes in fishing behavior". Does the NCDMF propose to focus on fishery supply chains governed by catch shares, or fisheries affected by capacity reduction efforts such as limited entry or buybacks.*
 - *If so, why? i.e., what are the organizing hypotheses vis a vis the supply chain?*
 - *If not, consider asking the dealers to <<Identify or estimate what % of the shell-/fish they buy come from catch share vs. commons fisheries>>*
 - *In either case, ask the dealers to <<Estimate the difference in the # fishermen selling to them over past5(?) years>> In order to be able to see whether econ changes since 2010 correspond to changes in fisheries regulations.*

See response to similar question in OAC reviewers section above

- *Why does the NCDMF proposes this to be a 1-time submittal of data to the ACCSP re regulated dealers once it has gone to the effort to re-/design and distribute this survey?*

Information collected in this study is not a part of any legislative mandatory data collection. NCDMF does not have the funding resources to conduct this survey on a regular basis. However, the objective of the NCDMF socioeconomic program is to update socioeconomic information on the state fisheries resources. Socioeconomic data pertaining to seafood dealers had not been updated in 10 years. However, as mentioned by another reviewer, utilizing this study as an analytical insight to the methodology and costs that the CESS & ACCSP partners need to consider for collecting socioeconomic fishery management-oriented data provides a beneficial outcome and could potentially help develop the groundwork for a longer time-series of data.

Recommendations

- *Indicate the current population of dealers, and the number of "eligible" dealers in 2010 vs 2018 from the NCDMF's Fish Dealer License database.*
- *Include a summary of key findings from Hadley & Crosson's 2010 survey of [150 respondents of 375?] dealers in order to understand NCDMF's organizing hypotheses.*

See response to similar question in OAC reviewers section above

- *Explicitly ask the dealers to identify or estimate:*
 - Business characteristics and expenditures*
 - Major buyers and markets, i.e., more specifically, <<amount and/or percent of shell-/fish sold as food vs. bait vs. fertilizer, industrial.... xxx, yyy>>*
 - Species [Amount and/or Percent wild vs. cultivated and local vs imported] shell-/fish species sold to distributors, restaurants, individuals etc. in order to understand demand for wild v. cultivated, local v. imported.*
 - <<new or previously "underutilized" local v imported species>> since 2010 or 2015*
 - << Amount and/or % waste, i.e., amount/% disposed of w/o finding a market>> [per month to the extent that the NCDMF thinks there might be a seasonal pattern re fisheries, and waste from these fisheries**]*
 - Current issues and business challenges*
 - Attitudes regarding fed/state management of dealers re. compliance w/ fed/state fishery and health laws*
 - Attitude/perceptions of fed/state enforcement efforts vis-a-vis dealers, fisheries, supply chain etc.*
 - Attitudes regarding fishery management*
 - User group conflicts*
 - Perceptions of the fishing industry - regulation of the supply chain.*
 - Individual socio-demographics of commercial seafood dealers*
- *Collect and independently report basic regulatory info and compliance data re the dealers.*
- *Ensure that the data gathered from this survey are archived and available on the ACCSP database.*
- *Ensure that this survey is explicitly used to help develop ASMFC and State protocols for gathering data from Atlantic coast dealers re the domestic and imported fisheries supply chains.*

Review 4

Comments

- *NC has been able to maintain consistent and quality socioeconomic sample surveys. Therefore, in general, I would give this NC proposal a high ranking & despite some of my comments listed below.*

Clarifying Questions

- *Pre-testing is not mentioned in the proposal's "Approach" section. Are there plans to conduct some small sample (panel) pre-testing of the instrument?*

See response to similar question in OAC reviewers section above

- *As a sample survey, will possible non-response bias issues be addressed?*

See response to similar question in OAC reviewers section above

Recommendations

- *From a CESS & ACCSP perspective, it would be useful if one of the survey objectives included providing analysis insight to the methodology and costs that the CESS & ACCSP partners need to consider for collecting socioeconomic fishery management-oriented data. For example, it appears that some of the check-off answers for question 46 in the preliminary NC question list are congruent with this CESS/ACCSP consideration. Specifically, in Appendix L of the ACCSP's "...Fisheries Data Collection Standards" manual (2012) it states that the CESS should work to incorporate "...Attitudes and perceptions of stakeholders: Underlying aspects of stakeholders' general satisfaction with the fishery and its operations."*

See response to similar question in OAC reviewers section above

- *A minor consideration: Consider adding a cost question about how much a dealer might spend on renting &/or leasing freezer space.*

Review 5

Comments

- *Agree with other CESS responses, especially Review 2's assessment*
- *If the gap in social science data (in the questions included in the proposal) will be filled, it is an adequate proposal.*

Recommendations

- *Incorporate demographic, attitudinal, and other non-economic information*

**Reviews and Questions from the ACCSP Operations and Advisory Committees for:
*An Updated Economic and Social Analysis of the Commercial Seafood Dealers of North Carolina***

Questions

- *To what baseline are the data compared—data from the previous iteration of the survey only or additional historical data?*

The data will be compared to the previous iteration of this survey. NCDMF does not regularly collect economic data from seafood dealers such as operating expenditures, revenue, employee compensation, etc. Mandatory reporting of ex-vessel prices is not a statutory requirement for seafood dealers in North Carolina.

- *Please explain how you will ascertain whether any apparent changes in economic and social status of North Carolina's commercial seafood dealers are due to regulations as opposed to other causes.*

The previous iteration of this survey asked respondents a series of question designed to rank perceptions and attitudes of management measures and their implications on the fisheries and business operations. This study will utilize the same set of questions and differences in the responses of these questions will be compared to the previous iteration. Relevant commercial harvest trip ticket data, (including overall landings and value estimates) will used in conjunction with this studies survey data to profile changes to the industry in the last ten years . It is difficult to isolate only the direct relationship of changing management efforts economic and social status changes of North Carolina's commercial seafood dealers. The focus of this study is to collect voluntary updated economic, demographic, and stated perceptions data of the regulated community and utilize relevant statistical commercial harvest data to update a profile on the socioeconomics of North Carolina seafood dealers. Collecting voluntary socioeconomic data through this study provides analytical insight to the methodology and costs that the CESS & ACCSP partners need to consider for collecting socioeconomic fishery management-oriented data

The "Description of Need" states, without including evidence from NCDMF or reference to the literature, that Magnuson-Stevens imposed "restrictive management measures" that "often cause consolidation of participants within a fishery, changes to business operations, and noticeable changes in fishing behavior". Does the NCDMF propose to focus on fishery supply chains governed by catch shares, or fisheries affected by capacity reduction efforts such as limited entry or buybacks?

- o *If so, why? i.e., what are the organizing hypotheses vis-a-vis the supply chain?*

The previous iteration of this study cited the reauthorization of the Magnuson-Stevens act in 2006 as a broad source for increasing regulation and management measures to protect the long-term viability of fisheries resources compared to historical management. Historically open access of common rights fisheries resources has led to overexploitation of many stocks. The findings of the original Magnuson-Stevens act in 1976 stated "certain stocks of fish have declined to the point where their survival is threatened, and other stocks of fish have been so substantially reduced in number that they could become similarly threatened as a consequence" (MSFCMA 2014). Magnuson-Stevens act required prevention of overfishing and rebuilding of overfished stocks through increased management measure where necessary. The Fisheries Conservation Act of 1996 and the reauthorization of 2007 strengthened and extended these requirements. To prevent overfishing and rebuild overfished stocks, management measures typically

attempt to reduce the overall fishing mortality on stocks. This is commonly achieved through reducing overall effort in the fishery. Wilen 1976 and Bjørndal & Conrad 1987 are two widely cited studies on the economic relationship of open-access fisheries management and over exploitation of fish stocks. The North Carolina General Assembly enacted similar measures to Magnuson-Steven's for its own state-managed species in 1997 with the Fisheries Reform Act (FRA). The FRA required management plans for all of the state's commercially and recreationally significant marine fisheries species, beginning in 1998 (FRA 1997). Magnuson-Steven's act recognized that management measures directly impact stakeholders and communities both economically and socially as fisheries resources are of high importance to specific communities and management measure shall attempt "to minimize adverse economic impacts on such communities" (MSFCMA 104-297, 109-479, pg 58). Legislation such as the reauthorization of 2007 Magnuson-Steven's Act, the FRA of 1997, and economic literature suggest that historical open-access fisheries required management measures to prevent and rebuild overfished stocks, which in turn requires a broad reduction in effort to reduce fishing mortality on certain stocks. This gives rise to the economic idea that management measures required like Magnuson-Steven's will often cause consolidation of participants within a fishery, changes to business operations, and noticeable changes in fishing behavior to reduce fishing mortality.

NCDMF is not proposing that the focus of this study will solely be on fisheries that have any limited entry or quota/share systems. The intent of this study is to focus on the socioeconomics of North Carolina Seafood Dealers and if management measures required by the Magnuson-Steven's Act, or the North Carolina Fisheries Reform Act have any real or perceived effect on North Carolina Seafood Dealers.

- *If not, consider asking the dealers to identify or estimate what % of the shell-/fish they buy come from catch share vs. commons fisheries*

This is an intended question, although other than Stripped Bass (*Morone saxatilis*) I'm not aware of anything other species managed under a share quota.

- *In either case, ask the dealers to estimate the difference in the number of fishermen selling to them over past 5 years in order to be able to see whether economic changes since 2010 correspond to changes in fisheries regulations.*

Acknowledged and agreed. Will include in the instrument.

- *Why is Magnuson highlighted but there is no mention of the Atlantic Coastal Fisheries Management Act as a relevant mandate to NC fisheries and seafood dealers? Are you only dealing with federally managed (SAFMC/MAFMC) species? If PIs agree, please add ACFCMA to the justification section.*

ACFMA and NC-FRM have been added to the justification section. No the study includes seafood dealers of all commercial species landed in North Carolina.

- *How is the stratification selected? Is it by area, size of business in pounds handled, dollar amount, or otherwise?*

Stratification will be done by respective area-districts and total pounds recorded according to the NCDMF commercial fishing trip ticket system to ensure adequate sampling of dealers state-wide of. Dealers can be concentrated in specific areas and species landings vary around the state.

- *What criteria were used to select at least \$10,000 in ex-vessel value from 2018 seafood sales for inclusion in the sample frame?*

The \$10,000 threshold was originally used by Crosson and Hadley (2010), and in the interest of keeping the proposed study in the framework of an update to the 2010 study, similar criteria will be used. The \$10,000 threshold was used in order to isolate Seafood Dealers who operate on a part-time or limited basis, as a dealer license is required for any retail sale of seafood. Some harvesters may possess a dealer license to sell excess catch themselves. We are specifically interested in full-time active seafood dealers who are not harvesters.

- *Is there a minimum threshold return rate needed to ensure valid/representative results?*

43.6% of dealers were deemed eligible in 2009. In 2018 that would be approximately 300 potential survey respondents. With an eligible population of 300 and an expected return rate of 40%, we can estimate that we would need a sample size of 119 respondents for our results to be statistically valid with a 95% confidence interval and a 7% margin of error. (double check math, drew on eligible population with

- *Will possible non-response bias be addressed?*

Yes, we will attempt to address any non-response bias through a non-response telephone call which will be attempted. Revised the methodology to include this.

- *p.8 - Does the \$400 include additional training materials or just the survey subscription?*

The \$400 training materials is exclusively for a Survey Monkey “advantage” subscription. NCDMF has used Survey Monkey for quite some time to conduct various socioeconomic surveys; offering an email & digital response. It continues to prove to be one of the premier online survey services. Revised renaming to subscription services rather than training materials.

Recommendations

- *A bit more history about this research program would be useful for the reviewers.*
 - o *What has NC DMF learned from previous iterations of the study with regards to sampling design?*
 - o *Include a summary of key findings from Hadley & Crosson's 2010 survey to help reviewers understand NCDMF's organizing hypotheses.*

The previous iteration of this study had a positive response rate of 66%. The principal investigator of this study did not conduct the previous iteration. Sampling design from the previous iteration appears to have been effective. Recent economic surveys conducted by the NCDMF of commercial harvesters indicate that response rates are declining as a contentious political climate surrounds current North Carolina fisheries management. Low burden, succinct survey instruments coupled with outreach measures are key to generating an effective response rate.

The previous iteration of this study noted “Overall, dealers indicated that they are facing significant headwinds in the long-term operation of their businesses. The top three challenges that were mentioned include state and federal government regulations, difficulties in obtaining an adequate supply of seafood, and competition from imported seafood” (Crosson & Hadley 2010)

- *Sampling Frame*
 - o *Indicate the current population of dealers, and the number of "eligible" dealers in 2010 vs 2018 from the NCDMF's Fish Dealer License database.*

In 2009, there were 683 licensed dealers in North Carolina who reported commercial landings. Any person or business holding a dealer license is considered a seafood dealer. In the most recent year of 2016 there were 575 dealers who reported landings.

Recommend using multi-year total or average of dealer landings in order to account for inter-annual variability; using 2018 data only may give a less representative sampling frame.

Agreed, will move to a 3-year average or 5 depending on recommendations from fellow NCDMF Staff

- *Pre-testing could prove valuable to ascertain if there are current issues with the dealers that may not have been considered, or if some questions are non-issues.*
Will implement a pretest with a select group of dealers, updated proposal to indicate this.

- *Consider asking the dealers for additional data on the following:*
 - o *Major buyers and markets*
 - *Amount and/or percent of shell-/fish sold as food vs. bait vs. fertilizer, industrial.*
 - o *Species*
 - *Amount and/or Percent wild vs. cultivated*
 - *Amount and/or Percent local vs imported*
 - *Amount and/or Percent waste (i.e., amount/% disposed of w/o finding a market)*
 - o *Current issues and business challenges*
 - *Attitudes regarding fed/state management of dealers re. compliance w/ fed/state fishery and health laws*
 - *Attitude/perceptions of fed/state enforcement efforts vis-a-vis dealers, fisheries, supply chain etc.*
 - o *Attitudes regarding fishery management*
 - o *User group conflicts*
 - o *Perceptions of the fishing industry - regulation of the supply chain.*
 - o *Individual socio-demographics of commercial seafood dealers*
 - o *Cost for renting &/or leasing freezer space.*

- *Collect and independently report basic regulatory info and compliance data regarding the dealers.*

- *From a CESS & ACCSP perspective, it would be useful if one of the survey objectives included providing analysis insight to the methodology and costs that the CESS & ACCSP partners need to consider for collecting socioeconomic fishery management-oriented data*
 - o *For example, it appears that some of the check-off answers for question 46 in the preliminary NC question list are congruent with this CESS/ACCSP consideration.*

Objective will be updated in the proposal to include CESS/ACCSP objective.

- *p. 5 - Remove the word “database” after Excel.*
- *p. 5 - Add “to be used for development of social and economic sections of state, ASMFC, and Council fishery management plans”?*

CESS Reviews of FY19 Socioeconomic ACCSP Project Proposal from NC

Review 1

Comments

- *Supports funding the proposal. It looks straightforward and of good quality.*

Recommendations

- *If there are email addresses on file for the dealers/processors, then send an email to the online version of the survey first, to save costs of mailing, and follow with a paper copy if they don't complete the online version in one week.*

Review 2

Comments

- *In the reviewer's experience, 40% is a very high response rate for a mail survey, though this may not be the case for NC, which may typically be better.*

The last iteration of this survey had a 66% response rate. Objectively we are hopeful that we could achieve a similar result, but chose to go with a more conservative, but hopeful estimate.

- *It is difficult to give direct comments on questions that "may be included" on the survey.*

Clarifying Questions

- *How is the stratification selected? Is it by area, size of business in lbs handled, or dollar amount, or otherwise?*

See response to similar question in OAC reviewers section above

Recommendations

- *Pre-testing could prove valuable to ascertain if there are current issues with the dealers that may not have been considered, or if some questions are non-issues.*

See response to similar question in OAC reviewers section above

Review 3

Clarifying Questions

- *The "Description of Need" states, w/o including evidence from NCDMF or reference to the literature, that Mag Stevens imposed "restrictive management measures" that "often cause consolidation of participants within a fishery, changes to business operations, and noticeable changes in fishing behavior". Does the NCDMF proposes to focus on fishery supply chains governed by catch shares, or fisheries affected by capacity reduction efforts such as limited entry or buybacks.*
 - *If so, why? i.e., what are the organizing hypotheses vis a vis the supply chain?*
 - *If not, consider asking the dealers to <<Identify or estimate what % of the shell-/fish they buy come from catch share vs. commons fisheries>>*
 - *In either case, ask the dealers to <<Estimate the difference in the # fishermen selling to them over past5(?) years>> In order to be able to see whether econ changes since 2010 correspond to changes in fisheries regulations.*

See response to similar question in OAC reviewers section above

- *Why does the NCDMF proposes this to be a 1-time submittal of data to the ACCSP re regulated dealers once it has gone to the effort to re-/design and distribute this survey?*

Information collected in this study is not a part of any legislative mandatory data collection. NCDMF does not have the funding resources to conduct this survey on a regular basis. However, the objective of the NCDMF socioeconomic program is to update socioeconomic information on the state fisheries resources. Socioeconomic data pertaining to seafood dealers had not been updated in 10 years. However, as mentioned by another reviewer, utilizing this study as an analytical insight to the methodology and costs that the CESS & ACCSP partners need to consider for collecting socioeconomic fishery management-oriented data provides a beneficial outcome and could potentially help develop the groundwork for a longer time-series of data.

Recommendations

- *Indicate the current population of dealers, and the number of "eligible" dealers in 2010 vs 2018 from the NCDMF's Fish Dealer License database.*
- *Include a summary of key findings from Hadley & Crosson's 2010 survey of [150 respondents of 375?] dealers in order to understand NCDMF's organizing hypotheses.*

See response to similar question in OAC reviewers section above

- *Explicitly ask the dealers to identify or estimate:*
 - a. Business characteristics and expenditures*
 - b. Major buyers and markets, i.e., more specifically, <<amount and/or percent of shell-/fish sold as food vs. bait vs. fertilizer, industrial.... xxx, yyy>>*
 - c. Species [Amount and/or Percent wild vs. cultivated and local vs imported] shell-/fish species sold to distributors, restaurants, individuals etc. in order to understand demand for wild v. cultivated, local v. imported.*
 - i. <<new or previously "underutilized" local v imported species>> since 2010 or 2015*
 - ii. << Amount and/or % waste, i.e., amount/% disposed of w/o finding a market>> [per month to the extent that the NCDMF thinks there might be a seasonal pattern re fisheries, and waste from these fisheries**]*
 - d. Current issues and business challenges*
 - i. Attitudes regarding fed/state management of dealers re. compliance w/ fed/state fishery and health laws*
 - ii. Attitude/perceptions of fed/state enforcement efforts vis-a-vis dealers, fisheries, supply chain etc.*
 - e. Attitudes regarding fishery management*
 - f. User group conflicts*
 - g. Perceptions of the fishing industry - regulation of the supply chain.*
 - h. Individual socio-demographics of commercial seafood dealers*
- *Collect and independently report basic regulatory info and compliance data re the dealers.*
- *Ensure that the data gathered from this survey are archived and available on the ACCSP database.*
- *Ensure that this survey is explicitly used to help develop ASMFC and State protocols for gathering data from Atlantic coast dealers re the domestic and imported fisheries supply chains.*

Review 4

Comments

- *NC has been able to maintain consistent and quality socioeconomic sample surveys. Therefore, in general, I would give this NC proposal a high ranking & despite some of my comments listed below.*

Clarifying Questions

- *Pre-testing is not mentioned in the proposal's "Approach" section. Are there plans to conduct some small sample (panel) pre-testing of the instrument?*

See response to similar question in OAC reviewers section above

- *As a sample survey, will possible non-response bias issues be addressed?*

See response to similar question in OAC reviewers section above

Recommendations

- *From a CESS & ACCSP perspective, it would be useful if one of the survey objectives included providing analysis insight to the methodology and costs that the CESS & ACCSP partners need to consider for collecting socioeconomic fishery management-oriented data. For example, it appears that some of the check-off answers for question 46 in the preliminary NC question list are congruent with this CESS/ACCSP consideration. Specifically, in Appendix L of the ACCSP's "...Fisheries Data Collection Standards" manual (2012) it states that the CESS should work to incorporate "...Attitudes and perceptions of stakeholders: Underlying aspects of stakeholders' general satisfaction with the fishery and its operations."*

See response to similar question in OAC reviewers section above

- *A minor consideration: Consider adding a cost question about how much a dealer might spend on renting &/or leasing freezer space.*

Review 5

Comments

- *Agree with other CESS responses, especially Review 2's assessment*
- *If the gap in social science data (in the questions included in the proposal) will be filled, it is an adequate proposal.*

Recommendations

- *Incorporate demographic, attitudinal, and other non-economic information*

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

**Collaborative Electronic Tracking Pilot Program in the American Lobster and
Jonah Crab Fishery**

Submitted By:

William DeVoe
Maine Department of Marine Resources
PO Box 8
W. Boothbay Harbor, ME 04575

Story Reed
Massachusetts Division of Marine Fisheries
251 Causeway St. #400
Boston, MA 02114

Applicant Name: Maine Department of Marine Resources and Massachusetts Division of Marine Fisheries

Project Title: Collaborative Electronic Tracking Pilot Program in the American Lobster and Jonah Crab Fishery

Project Type: New project

Principal Investigators: William DeVoe (ME DMR), Story Reed (MA DMF)

Staff Support: Megan Ware, ASMFC FMP Coordinator for American Lobster and Jonah Crab

Requested Award Amount: \$19,710

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

Date Submitted: June 11, 2018 (revised proposal submitted 8/10/18)

Primary Module: Catch and effort (100%)

Objective:

To improve the spatial resolution of data in the American lobster and Jonah crab fishery by conducting a one year pilot program to test a suite of electronic tracking devices in the Gulf of Maine, Georges Bank, and Southern New England regions.

Need:

The American lobster and Jonah crab fishery represents one of the most valuable and fastest growing fisheries along the Atlantic coast. Landings in the lobster fishery have exponentially increased from roughly 39 million pounds in 1981 to over 158 million pounds in 2016, representing an ex-vessel value of \$669 million dollars. Concurrently, landings in the Jonah crab fishery, in which the majority of participants are lobstermen using slightly modified traps, have grown by almost 600% from 2000 to 2016. However, recent management actions have highlighted deficiencies in the spatial resolution of harvester data. These deficiencies have hindered the ability to effectively manage the resource, respond to the growing use of marine spatial planning, and appropriately assess the status of the offshore stock.

In 2016, the New England Fishery Management Council (NEFMC) took action on an Omnibus Deep-Sea Coral Amendment, which looked to provide protection to corals in the northwest Atlantic Ocean through the creation of discrete regions and/or broad depth zones. Given the harvest of lobster and Jonah crab occurs offshore, the Atlantic States Marine Fisheries Commission (ASMFC) was asked to provide information on the magnitude of lobster and Jonah crab catch in specific regions in order to understand potential economic impacts. At the time, the lobster and Jonah crab fishery management plans required harvesters to report landings via NOAA statistical areas, regions much larger than those being considered for coral protection. As a result, the spatial resolution of catch and effort data for the lobster and Jonah crab fishery proved too coarse; without this fine scale spatial information, impacts to the lobster and Jonah crab fishery had to be estimated by piecing together information from harvester reports, industry surveys, and fishermen interviews. Similar challenges occurred when the Northeast Canyons and Seamounts Marine National Monument was established in 2016, and it is expected that these challenges will continue given the increased activity surrounding offshore wind, and oil and gas exploration.

In recognition that the spatial resolution of lobster and Jonah crab harvester data was too coarse to address on-going marine spatial planning activities, the American Lobster Management Board (Board) approved Addendum XXVI. Effective January 1, 2019, harvesters will now have to report their landings via Lobster Conservation Management Areas and 10 minute squares, which divide the existing statistical areas into smaller boxes. In addition, the Board approved a one-year pilot program to test electronic tracking devices in the lobster and Jonah crab fishery. The intent of this pilot program is to understand what device(s) are appropriate for use in the fishery, given the broad range of boats used and the variable geographic regions in which they fish. At the end of the one-year pilot program, the Board will decide whether electronic tracking should be pursued in part, or all, of the lobster and Jonah crab fishery, or if additional testing is needed.

The Board's approval of the one-year pilot program represents the first requirement to test tracking devices in the directed lobster and Jonah crab fishery. The majority of lobstermen do not have another federal permit which requires VMS and, as a result, the use of tracking devices is limited. Given the paucity of location data, the implementation of electronic tracking devices in the lobster and Jonah crab fishery would not only improve the resolution of catch and effort data, but it would also elucidate important transit routes which are not reflected on harvester trip reports. Furthermore, the use of tracking devices would improve enforcement efforts in the lobster and Jonah crab fishery, a particular concern given the rapid increase in landings and value over the last decade. Enforcement personnel have consistently noted that the ability to determine when a boat is steaming versus hauling is critical to determining when fishermen are using illegal gear. Even if this location data is not reported in real-time, once a fishing location is known, enforcement personnel can go to that location to inspect gear for appropriate markings, buoys, escape vents, and ghost panels. Given finite enforcement resources, knowing distinct fishing locations would improve the efficiency and capability of enforcement efforts.

Results and Benefits:

The direct results of this pilot program will be: 1) understanding which tracking device(s) are appropriate for use in the lobster and Jonah crab fishery; and 2) collecting fine-scale spatial data to better understand the location of catch and effort in the fishery. To-date, spatial information on the lobster and Jonah crab fishery has been constrained to NOAA statistical areas and states' own management areas, hindering the ability to quantify effort in specific regions or identify important transit routes. This type of information will be critical to determine how the lobster and Jonah crab fishery fits into the evolving world of marine spatial planning.

The pilot program also has direct implications on the management of the species. Upon completion of the pilot program, the Board will determine whether electronic tracking should be pursued in part, or all, of the lobster and Jonah crab fishery. The application of electronic tracking to this fishery, one of the most valuable fisheries along the Atlantic coast with well over 7,000 permit holders, could dramatically change the information available to fishery managers and stock assessment scientists. The fact that the Addendum not only improved the spatial resolution of data collection to 10 minute squares but also established a 1 year pilot program illustrates the Board's recognition that vast improvements need to be made to the collection of spatial data in the fishery. As a result, it is imperative that this pilot program be successfully executed so that forward progress can continue to be made within the fishery.

On a broader scale, tracking data can also help inform socio-economic data in the lobster and Jonah crab fishery. One of the greatest challenges in management has been the ability to determine fishing activity in specific regions, such as areas designated for protection or proposed for wind development. The use of tracking devices will allow managers to assess who fishes where, and what economic impacts are expected from proposed marine spatial planning activities to specific regions and ports.

In addition, this pilot program directly relates to many of ACCSP's stated priorities for the grant. First, the pilot program addresses ACCSP's top priority of "Catch, effort, and landings data" given it is improving the spatial resolution of effort and harvest data in the lobster and Jonah crab fishery. This pilot program sets the stage to drastically improve the quality and quantity of data in the lobster and Jonah crab fishery, an industry which, until the approval of Addendum XXVI, did not require all harvesters to report and required those that did report to do so at a coarse spatial resolution. This could lead to improved management of the species, enhanced enforcement of regulations, and improved assessment of stock health. In addition, the project is comprised of multiple partners who are working together to consider the application of a technology over a broad region. Furthermore, there is a defined end-point to the pilot program; the Board approved a one-year pilot program and its completion will initiate a management discussion and decision. Finally, the amount requested to implement the pilot program is small relative to the expected in-kind contributions of Subcommittee members and fishermen's time. As a result, the potential rewards of this pilot program are high for a small amount of funds.

Data Delivery Plan:

Location information will be submitted in near real-time to SAFIS via an API. ACCSP currently receives catch and effort data from the lobster and Jonah crab fishery via state and federal partners. Information included on these harvester reports includes species, pounds landed, traps hauled, soak time, and trip length.

Approach:

To coordinate and organize the pilot program, a multi-partner Lobster Electronic Tracking Subcommittee (Subcommittee) was created with representatives from the states, industry, ACCSP, and ASMFC. This Subcommittee is tasked with designing and implementing the pilot program, and represents a forum in which a group of stakeholders can collaboratively work to ensure a robust project. The Subcommittee has met several times via conference call to identify the structure and design of the pilot program. Membership on the Subcommittee is listed below:

- William DeVoe (ME DMR)
- Rene Cloutier (ME DMR Enforcement)
- Story Reed (MA DMF)
- David Borden (RI Commissioner, Atlantic Offshore Lobstermen's Association)
- Beth Casoni (Mass. Lobstermen's Association)
- Gerry Cushman (Lobsterman)
- Jason Joyce (Lobsterman)
- George Lapointe (Lapointe Consulting)
- Mike Cahill (ACCSP)
- Megan Ware (ASMFC)

To focus the efforts of the pilot program, the Subcommittee has identified six geographic regions and four tracking devices for testing. The geographic regions are focused on areas

where: 1) lobster and/or Jonah crab is the primary catch of permitted harvesters; and 2) fishermen may not have permits for others species which require VMS. Based on this criteria, six regions were identified in the Gulf of Maine, Georges Bank, and Southern New England. To reflect the higher level of effort in the Gulf of Maine, the area was split into three regions to capture local differences. The offshore southern New England region was specifically chosen to focus testing on an area with high rates of Jonah crab harvest.

The list of six proposed testing regions is as follows. A figure is included at the end of the proposal which shows an overlay of lobster conservation management areas and biological stock boundaries, as well as NOAA statistical areas.

- Inshore Gulf of Maine from Cape Cod Bay to Portland, ME (includes statistical area 514 and the southern part of 513)
- Inshore Gulf of Maine from Portland, ME to Mount Desert Island, ME (includes the northern part of statistical area 513 and the majority of 512)
- Inshore Gulf of Maine from Mount Desert Island, ME to the Canadian border (includes the northern end of statistical area 512 and 511)
- Georges Bank (includes parts of statistical areas 521, 522, 525, and 561)
- Inshore Southern New England (includes the western part of statistical area 537, 539, 613, and the northern part of 612)
- Offshore Southern New England (includes the eastern part of statistical area 537, 533, 534, 541, and 526).

The Subcommittee has also identified four tracking devices for testing in the pilot program. When considering desired criteria for tracking devices in the lobster and Jonah crab fishery, the Subcommittee prioritized a fast ping rate and a low cost to fishermen. A fast ping rate (~1 ping per minute) was recommended by marine law enforcement personnel given enforcement efforts are greatly improved when hauling can be differentiated from steaming. A low cost to fishermen was also cited as a priority given, if tracking devices are required in the fishery, the cost could fall on fishermen. As a result, the Subcommittee focused their investigations on devices which use cell service or wifi, as opposed to satellite, since this drastically reduced the price.

- The first technology the Subcommittee identified is the FB Sentry 300 device made by Faria Beede. This is a ruggedized, web-based device which can have a ping rate as fast as every 10 seconds, but can also be set to longer intervals. The device generally reports real time information on a vessel's location up to 15 miles from shore and, when out of cell range, can store up to 200,000 position reports. Information on this device can be found here: https://fariabeede.com/2-pages/entelnet_wd300.php.
- The second technology to be tested is the Vessel Tracking System made by Pelagic Data Systems. This solar-powered device was originally developed with a focus on small-scale fisheries and stores location information via a cell network. The device works roughly 5 days without sunlight and responds to vessel motion in order to save power. Information on this device can be found here: <http://www.pelagicdata.com/details/#hardware>.

- The third device the Subcommittee identified was the SC2 produced by Succorfish. This ruggedized device has dual GSM and satellite capabilities and is described as a ‘fit and forget’ tracking device. Information about the device can be found here: <https://succorfish.com/products/sc2/>.
- The fourth technology identified by the Subcommittee is the tracking function used via eTrips Mobile. This application can record a vessel’s GPS location on a tablet and links the location to a trip report. For this technology, the tablet is the ‘device’, which must be onboard the vessel. Information about eTrips Mobile can be found here: <http://www.accsp.org/etrips-mobile>.

The Subcommittee will identify participants for the pilot program via industry organizations and networks. It is intended that each technology will be tested in all six of the geographic regions to ensure each device is tried under a range of weather conditions and fishing practices. If a single device is placed on a vessel, this results in 24 participating fishermen; however, it may be possible to test multiple devices on a single boat to provide direct comparisons. Several industry members have already reached out and expressed interested in the pilot program, including an individual who currently has VMS on a vessel. This would allow for the comparison of VMS, a satellite based technology, against cell and wifi based technologies to understand any advantages or fallbacks. It will also provide an opportunity to weigh the costs and benefits of collecting real-time data at a slow ping rate versus collecting data when a boat is in cell/wifi service at a fast ping rate.

Project participants will make every effort to incorporate piloting results from the ACCSP proposal entitled “Integration of vessel monitoring systems and electronic reporting in SAFIS and SAFIS applications through API development and field testing of multiple hardware options” into this project to broaden the scope and testing base. Since the VMS device testing phases of both proposals overlap, results will be compared and included in the final summary report.

Following the implementation of the pilot program, the Subcommittee will analyze and review the location information collected. Criteria used to analyze and compare the various devices will include the cost of the unit (including any installation costs), operating costs of the unit, ease of installation, ease of use (from fishermen and agency perspective), and accuracy of location data. Participating fishermen will also be contacted (via phone, email, or postal mailing) to gather their feedback on the various devices, including challenges they encountered, preferences they had between the devices, and any benefits, or downfalls, of collecting the location information. Based on this feedback and the information collected from the tracking devices, the Subcommittee will draft a final report to the Lobster Board. A draft of this report will be presented to participating industry members so that they can review the results and approve any images or descriptions of location information that is used in the report. Upon finalization of the report, results will be communicated to fishermen via articles in appropriate industry organization newsletters, presentations at the Maine Fishermen’s Forum and the Massachusetts Lobstermen’s Association Weekend, and a conference call with the

ASMFC American Lobster Advisory Panel. Finally, results of the report, as well as any associated recommendations from the Subcommittee and/or Advisory Panel, will be presented to the Lobster Board for their review and consideration.

Geographic Location:

The geographic scope of this project will cover most of the Gulf of Maine, Georges Bank, and Southern New England. As a result, the devices will be tested in both state and federal waters. Specific descriptions of the six geographic locations of interest are included in the *Approach* section.

Milestone Schedule:

Below is a schedule which outlines the work plan for the pilot program. Month 3 corresponds to March, which is the start of the ACCSP fiscal year. Adjustments can be made to the schedule based on the timing at which funds become available. The end-point of this project is the presentation of the pilot program results to the ASMFC Lobster Board. It is expected that this end-point will occur 12 months after the start of the project. Given there is a defined end-point, a Funding Transition Plan is not required.

	3	4	5	6	7	8	9	10	11	12	1	2
Obtain devices and select participating fishermen; install devices on vessels and ensure fishermen comfort with system	X	X										
Test tracking devices in the lobster/Jonah crab fishery			X	X	X	X	X	X	X	X		
Semi-annual progress report							X					
Analyze data from pilot program; draft final report; present findings to participating fishermen										X	X	X
Present findings to Lobster Board for management considerations												X

Project Accomplishments Measurement:

The following table outlines the project goals for the electronic tracking pilot program.

Project Goal	Measurement of Accomplishment
Test electronic tracking devices across a wide geographic range of the lobster/Jonah crab fishery	Tracking devices tested in each of the six regions
Test multiple tracking devices side-by-side	Multiple tracking devices tested in each region
Garner support for pilot program and improve spatial resolution of data	Number of fishermen who participate in program
Communicate results of pilot program to industry members	Articles written for industry newsletters and participation in industry meetings
Communicate results of pilot program to inform management	Present final report at ASMFC Lobster Board meeting

Cost Summary:

Below is a breakdown of costs anticipated for the electronic tracking pilot program. The majority of costs are associated with the purchase of electronic tracking devices and associated data plans for the testing year. The Subcommittee is requesting eight units of each device so that multiple devices can go on a single vessel to compare the outputs of the various technologies. Other costs include the travel of a Subcommittee member to present the results of the pilot program with participating industry members. This will allow the Subcommittee member to hear direct feedback from the fishermen on the devices and ensure the fishermen are comfortable with any data that may be presented in the final report. Travel is also included for a fisherman to attend the ASMFC Lobster Board meeting so that they can present, on behalf of the industry, their feedback and impressions on the tracking devices tested. There is also travel for a Subcommittee member to present at industry meetings, notably the Maine Fishermen’s Forum and the Massachusetts Lobstermen’s Association Weekend, so that results of the pilot program can be disseminated to the industry.

Description	Calculation	Cost
Supplies		
Faria Beede tracking device	(\$300 for device + \$300 for data service) x 8	\$4,800
Pelagic Data Systems tracking device	(\$150 for device + \$300 for data service) x 8	\$3,600
Succorfish tracking device	(\$300 for device + \$300 for data service) x 8	\$4,800
Tablet (for eTrips Mobile tracking function)	\$250 for ruggedized tablet x 8	\$2,000
Travel		
Travel for Subcommittee member meet with participating fishermen following the pilot program to review results	Flight \$500 Hotel room \$200 x 3 Rental Car \$500 Per Diem \$60 x 3	\$1,780
Travel for Subcommittee member to present results at the ME Fishermen's Forum and Mass. Lobstermen's Association Weekend	Flight \$500 Hotel room \$200 x 2 Rental Car \$500 Per Diem \$60 x 2	\$1,520
Travel for participating fisherman to attend ASMFC Lobster Board meeting in Arlington, VA and provide feedback on tracking devices	Flight \$500 Hotel room \$400 Per Diem \$60	\$960
Other		
Printing		\$250
TOTAL		\$19,710

In-kind contributions include:

Below is a list of in-kind contributions to this pilot program from the PI's and ASMFC staff (110% of funding request). It is important to note that the table below does not include the value of all Subcommittee members' time as well as the value of a fisherman's time. As a result, it is not unreasonable to assume that the contribution of all participating members' time has a higher value than the requested grant amount.

Staff Time (coordinating and implementing pilot program)	In-Kind Contribution	
ME DMR (1 staff @ 2 hours/week for 1 year)	Salary (2 hours/week)	\$2,345
	Benefits	\$1,968
MA DMF (1 staff @ 2 hours/week for 1 year)	Salary (2 hours/week)	\$5,192
	Indirect (24.36%)	\$1,265
	Payroll Tax (1.73%)	\$90
	Fringe Benefits (35.41%)	\$1,838
ASMFC (1 staff @ 4 hours/week for 1 year)	Salary (4 hours/week)	\$6,725
	Benefits	\$2,287
TOTAL		\$21,710

Principal Investigators: William DeVoe (ME DMR) and Story Reed (MA DMF)

Summary of Proposal for Ranking Purposes

Proposal Type: New

Primary Program Priority:

Catch and Effort: This project will collect fine-scale spatial data in the American lobster and Jonah crab fishery to better understand the location of catch and effort, and elucidate important transit routes.

Data Delivery Plan: Location information will be submitted in near real-time to SAFIS via an API. ACCSP currently receives catch and effort from the lobster and Jonah crab fishery via state and federal partners.

Project Quality Factors:

Multi-Partner/Regional Impact: A multi-partner Lobster Electronic Tracking Subcommittee (Subcommittee) has been created with representatives from the states, industry, ACCSP, and ASMFC to coordinate the project. The geographic scope of this project will cover most of the Gulf of Maine, Georges Bank, and Southern New England.

Funding Transition Plan or Defined End-Point: This is a one year project with a defined end-point.

In-Kind Contribution: In-kind contributions to this pilot program from the PI's and ASMFC staff equate to 110% of the funding request. It is important to note that the In-Kind Contribution table includes neither the value of all Subcommittee members' time nor the value of a fisherman's time. As a result, it is not unreasonable to assume that the contribution of all participating members' time has a higher value than the requested grant amount.

Improvement in Data: To-date, harvester data has been reported via NOAA stat areas but that has proven too coarse for effective management of the fishery. Electronic tracking will advance data quality and quantity by vastly improving the spatial resolution of catch and effort data in the fishery. In addition, it will propel the fishery to adopt electronic devices for reporting fishing location, a significant step given the vast majority of reporting is via paper. Ancillary benefits of improved data include more effective enforcement efforts and improved socio-economic data.

Potential Secondary Module: Socio-Economic - One of the most recent challenges in the management of lobster and Jonah crab has been the ability to determine fishing activity in specific regions, such as areas proposed for protection or wind development. The use of tracking devices will allow managers to assess who fishes where, and calculate economic impacts of proposed marine spatial planning activities.

Impact on Stock Assessment: Fine-scale spatial data will lead to an improved assessment of stock health as landings will be more accurately assigned to fishing management areas.

Innovative: While tracking devices are used in other fisheries, there is no such requirement for the lobster and Jonah crab fishery. This low-cost project tests the use of electronic tracking devices in a fishery which primary still reports via paper.

William L DeVoe
Maine Department of Marine Resources
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West Boothbay Harbor, ME 04575
(207) 592-7084
william.devoe@maine.gov

Education

Hartwick College, Oneonta, NY.
B.A. Biology

Other colleges attended:

- **University of Tasmania Australia (Geology/Zoology)**
- **SUNY Canton (English Literature/Writing)**
- **SUNY Plattsburgh (part-time)**
- **Clarkson University (Electrical & Mechanical Engineering)**

Work Experience

Maine Department of Marine Resources, West Boothbay Harbor, ME.

Marine Resource Scientist II: GIS & Oil Spill Response Coordinator, June 2017 – present.
Acts as GIS coordinator for the Bureau of Marine Science; responsible for GIS workflows and creation/maintenance of Bureau GIS data. Agency lead for oil spill response preparedness. Project lead for remote data entry (transition of projects to tablet-based data collection.) Administers ArcGIS Online and Zerion iFormBuilder subscriptions for the agency. Created agency GIS Open Data site.

Marine Resource Scientist I: Water Quality Scientist, March 2017 – May 2017.
I worked as a scientist supporting the Maine Shellfish Sanitation Program. Field work included water quality sampling by boat and truck at western Maine stations and conducting shoreline surveys to identify potential pollution sources. Office work included data entry, GIS mapping, and report writing. In this position, I was responsible for marine shellfish growing area water quality classification for areas between Boothbay Harbor and Stockton Springs.

Marine Resource Specialist II (AC): Shoreline Survey Project Leader, October 2017 – March 2017.
Position managing shoreline survey program and acting as Bureau of Public Health GIS lead.
Marine Resource Specialist I: Water Quality Specialist, May 2016 – September 2016.
Water quality specialist position collecting water samples and conducting shoreline surveys in support of the Maine Shellfish Sanitation Program in the Bureau of Public Health.

Maine Barn Company, Edgecomb, ME. July 2014 – May 2016.

I conducted work at the Maine Barn Company, also known as Connolly & Company. My work as a joiner involved layout and cutting of timbers for frames throughout New England, and site work including raisings, sheathing, and general carpentry. In addition to new construction, I also worked on several restoration projects for Maine Barn Company. Additionally, I drafted timber frames in Sketchup as needed.

Winterwood Timber Frames, Chelsea, VT. April 2013 – June 2014.

Performed work as a timber frame carpenter laying out and cutting joinery for traditional New England-style timber frames houses and barns and then raising them on site. I also installed SIP panels, sheathing, and finish details such as hand rails and stairs.

East West Technical Services LLC (EWTS), ports out of New England states. May 2010 – Jan 2013

At-sea monitor

I worked as an at-sea monitor for EWTS, a contractor to the National Marine Fisheries Service's Northeast Fisheries Observer Program. My job involved accompanying fishing vessels out of New England ports and recording data on catch/discard weights and lengths, and incidental takes of sea birds, sea turtles, and marine mammals. I also collected a variety of other information on fishing conditions. I was trained by NMFS in May 2010 in identification of Atlantic fish, invertebrate, bird, turtle, and marine mammal species. During my period as an observer I worked on over 100 different fishing vessels in the gillnet, trawl, longline, and handline fisheries. I left this position in January due to severe fishing quota reductions limiting the amount of work available.

University of Iceland, Hólar, Iceland. August – September 2009.

Lake Ecology Field Technician

I assisted a PhD student on her thesis project studying food web dynamics and sympatric speciation in Arctic charr populations of Icelandic lakes. The work involved camping by remote lakes and gill netting for Arctic charr. Stickleback were obtained with fish traps, plankton with tows, and benthic invertebrates by sieving and Eckman grabs. All fish were photographed to analyze morphological data, and tissue samples were taken for stable isotope, DNA, and mRNA analysis.

Garcia and Associates (GANDA), San Clemente Island, California. June – July 2009

Island Fox Field Technician

I spent 5 weeks on San Clemente Island trapping Island Foxes as part of a Navy-contracted mark-recapture study to determine population dynamics of the subspecies. The field work involves hiking a grid to set traps, handling captured foxes to collect biological data, PIT tagging, and drawing blood.

National Park Service, Grand Canyon, Arizona. March – June 2009.

Mexican Spotted Owl Observer

In this position I assisted the National Park Service studying the effects of commercial air traffic on the Mexican Spotted Owl in the Grand Canyon. This was accomplished by making behavioral observations of roosting owls in remote canyons. I spent 9 days at a time hiking and camping throughout rugged terrain with a large pack while searching for and observing the owl pairs.

US Fish & Wildlife Service, Ray Brook, NY. May – August 2006.

Biological Technician, Sea Lamprey Control

In my first field biology position, I conducted deep-water electrofishing surveys of larval sea lamprey populations on Lake Champlain. This was accomplished utilizing GPS and data-logging technologies to map way points and collect population data using a deep-water electrofishing device.

Technical Skills

GIS/data science:

- Proficient in the use of ArcGIS, and R to produce maps and process geospatial data. Skilled in the arcpy Python package to automate ArcGIS workflows and create custom tools.
- Experience interacting with Oracle and MS SQL Server databases using SQL, as well as higher-level languages like Python and R.
- Experience using JavaScript for basic function creation, as well as using jQuery, R, and Python to interact with JSON based APIs.

CAD:

- Drafting experience including Sketchup and LayOut; 3D illustration of timber frame joinery and layout.

Field skills:

- Proficient with carpentry hand and power tools, maintenance of shop power tools, and restoration/sharpening of hand tools.
- Experience in small boat handling and trailering and marine navigation.
- Skilled in conducting field work in backcountry and offshore environments.
- Electrofishing (backpack and deepwater), gill-netting, otter trawls, plankton tows, radio tracking/telemetry, PIT tagging, blood drawing, game calling, spotting scopes, remote cameras, and various other wildlife/fisheries associated technologies.

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EDUCATION

Master of Science in Public Affairs UMass Boston, 2011
Richard A. Hogarty Award for Academic Excellence in Public Affairs

Bachelor of Arts, Cum Laude Bates College, 2000
Environmental Studies: Natural Resource and Environmental Policy, Minor in Economics
Senior Thesis: Inshore Cod Fishing Regulations in the Gulf of Maine

EXPERIENCE

MASSACHUSETTS DIVISION OF MARINE FISHERIES

Environmental Analyst III & IV

Sep 2013-Present

- Supervise activities of permit program, statistics project and seafood marketing program.
- Manage day-to-day operations of DMF permitting program; including issuance of commercial, seafood dealer, and recreational permits from Boston, Gloucester, and New Bedford offices.
- Direct supervision of Boston and Gloucester permitting and statistics project staff.
- Serve as seafood dealer permitting specialist.
- Lead role in Massachusetts Seafood Marketing initiative.
- Liaison to the Office of Environmental Law Enforcement with regards to permitting, reporting, and compliance questions/issues.
- Apply state and federal permitting and licensing information to assist Director understand fisheries management and policy implications of new and revised limited entry initiatives and catch share programs being considered at state, interstate, and federal levels.
- Assist in review and development of commercial and dealer permitting procedures, policies, and regulations.
- MA representative to ACCSP Operations Committee.
- MA representative to ASMFC Lobster Plan Development Team.

Fisheries Data Collection Coordinator/Environmental Analyst II Apr 2005-Sep 2013

- Coordinated the collection, editing, data entry, and auditing of fisheries dependent data collected from commercial fishermen and seafood dealers.
- Daily communication and outreach with commercial and recreational constituents to answer regulatory, permitting, and reporting questions.
- Supervised three full-time data entry and permitting staff and three temporary data entry staff.
- Liaison to agency administrative staff and state and federal environmental law enforcement for compliance monitoring and other reporting issues.

- Performed routine daily updates and create new content pages as agency webmaster.
- Lead role in developing 2011 Winter Fluke Pilot Program with cooperative input from industry and law enforcement.
- Member of economic analysis team reviewing the impact of Amendment 16 and sector management.
- Public presentations on reporting requirements and other statistics-related topics at agency hearings and stakeholder meetings.
- Lead role in developing and implementing new comprehensive harvester trip-level reporting program in 2008.
- Conducted audits of fishermen data against dealer data to determine statistical accuracy of reporting system.
- MA representative to ACCSP Commercial Technical Committee.

PEROT SYSTEMS GOVERNMENT SERVICES

Dec 2002-Apr 2005

Environmental Technician II/Fisheries Specialist

- Coordinated and implemented thirty vessel Study Fleet Pilot Project for NOAA Fisheries Cooperative Research Program to collect real-time electronic catch and effort fishery-dependent data.
- Lead role in developing electronic reporting software and compiling comprehensive list of hardware requirements for electronic devices on commercial fishing vessels.
- 30 at-sea trips on commercial fishing vessels to perform time-and-motion studies, train fishermen on electronic reporting devices, monitor progress, retrieve data and collect feedback.
- Prepared written reports on at-sea data collection feasibility across fishing gear types and vessel sizes.

MASSACHUSETTS HOUSE OF REPRESENTATIVES

May 2001-Nov 2002

Research Analyst for Chairman, Committee on Natural Resources and Agriculture

- Provided subject expertise to drive over 280 bills through legislature.
- Chief advocate with legislators, lobbyists, and state environmental agencies.
- Coauthored first-in-the-nation CRT recycling legislation, covered by national media.
- Lead on comprehensive mercury reduction legislation.
- Managed and executed Chairman's PR and media relations, including print and electronic media.
- Organized hearings on major bills with media groups, advocates, industry and legislators.
- Created custom Microsoft Access database to track legislation and budget line-items.

TOWN OF ROCKPORT HARBOR DEPARTMENT

1996-Present

Assistant Harbormaster, Patrol Boat Operator

- Initiate customer-friendly approach to department enforcement of environmental and marine regulations.
- Manage, prioritize, and organize traffic in busy harbor.

CERTIFICATIONS

United States Coast Guard Master of Inspected Vessels 50 Tons

American Red Cross First Responder/CPR/First Aid

SQL Fundamentals

Creating Webpages II (Intermediate HTML)

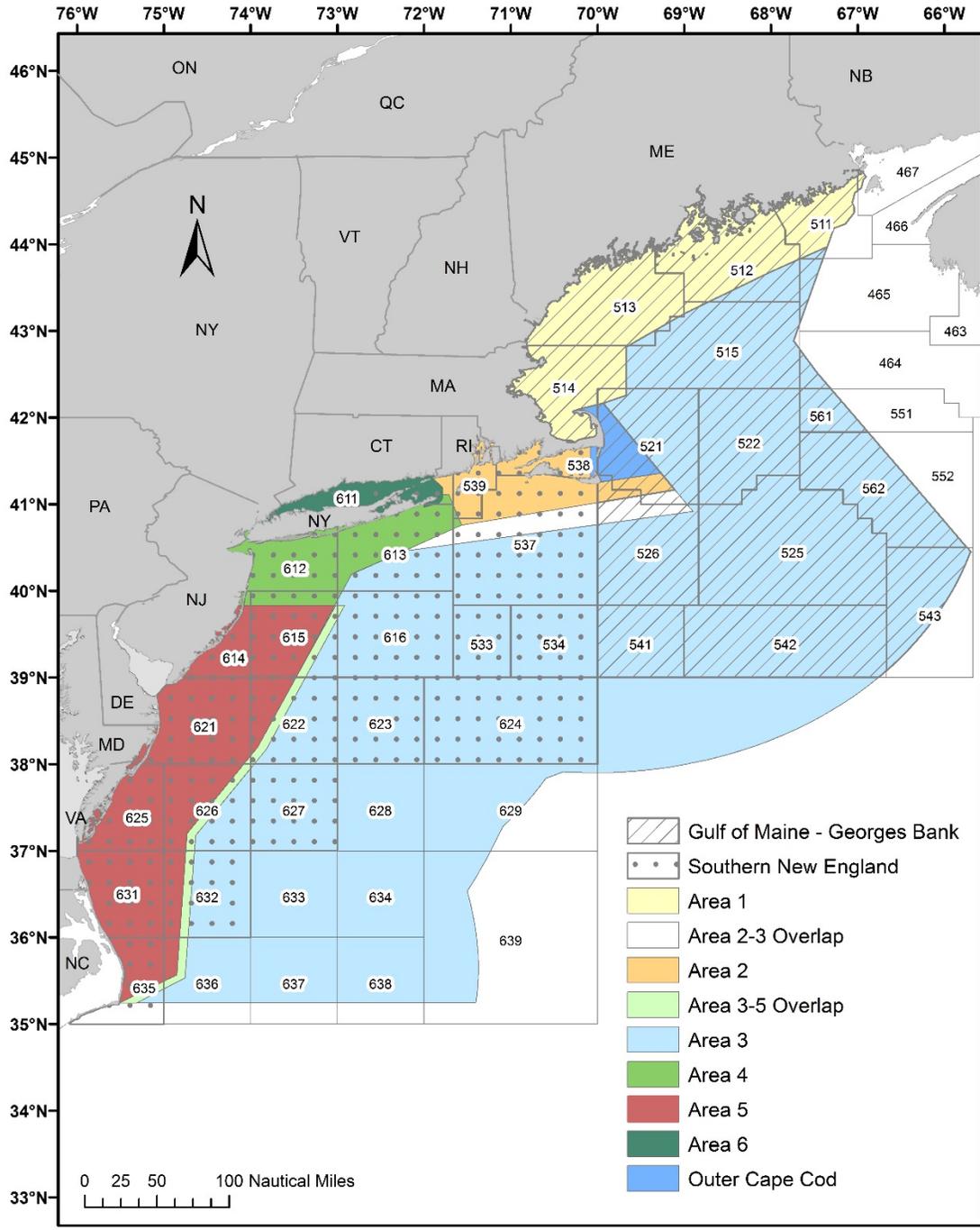


Figure 1: Map of the American lobster management areas (shown in the different colors), biological stock boundaries (shown in the slash marks vs. dots), and NOAA statistical areas.

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

Expanding Accountability in Reporting: A Tool for Comprehensive For-Hire Data Collection and Monitoring in Maryland

Submitted By:

Carrie Kennedy
Maryland Department of Natural Resources
580 Taylor Ave, B-2
Annapolis, MD 21401
Carrie.Kennedy@maryland.gov

Primary Priority: Catch, effort, and landings data
Recreational Technical Committee Priority: Comprehensive For-Hire Data Collection and Monitoring

Applicant Name: Maryland Department of Natural Resources

Title: Expanding Accountability in Reporting: A Tool for Comprehensive For-Hire Data Collection and Monitoring in Maryland

Project Type: New

Principal Investigator: Carrie Kennedy, Data and Quota Monitoring Program Manager

Requested Award Amount: \$182,912

Requested Award Amount Including NOAA Grants Administration Fee: \$192,058

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

Original Date Submitted: June 11, 2018

Objective: We propose to expand an existing E-reporting tool for use in Maryland’s for-hire fishery. The tool would allow for-hire captains the ability to report daily harvest using cell phones, smartphones or computers. Daily harvest reports will also be verified through dockside monitoring facilitated by pre-trip notifications (or hails) submitted daily by the for-hire fleet. Additional at-sea sampling will be conducted to collect additional catch (discard) and effort data. Work will be conducted for 12 months following receipt of funds.

Need:

Maryland’s Chesapeake Bay charter fishery is conducted primarily April through December. For-hire captains are required to either hold a Maryland Fishing Guide License or an Unlimited Tidal Fishing License. Vessels must have an additional charter decal in order to conduct charters of unlicensed anglers in Maryland, or to conduct trips targeting striped bass. Decals must be obtained for a vessel that can carry either 6 or less passengers (6 pack) or 7 or more passengers (Annotated Code of Maryland §4-745). Licensees are required to report to the department (COMAR 08.02.13.06).

Maryland has had a for-hire logbook requirement since 1995 (Figure 1). At the same time, MRIP conducts the For-Hire Telephone Survey to estimate effort. For-hire harvest estimates are derived using for-hire intercepts of fishermen along with the effort data from logbooks. Maryland has an agreement with NOAA/MRIP to provide trip data to MRIP from vessels they select. Every wave, MRIP submits a list of vessels for each week during the wave and is provided with the trip information (date, number of trips, location, and number of anglers) by the end of the month after the wave (May 29, July 29, Sept 29, etc.). As in other states, Maryland’s charter industry believes the estimates to be of questionable validity – especially since they provide data via logbooks. However, recent declines in reporting rates from 2013-2017 (95% to 75%, respectively) demonstrate that additional tools are required to provide harvest values so fisheries managers can understand for-hire fishing impacts. Unfortunately, MRIP cannot enforce industry accountability, requires additional effort and resources to manage, and often lacks buy-in from stakeholders. In preparing this document, we realized a substantial discrepancy between Maryland’s logbook-reported angler trips and Maryland’s MRIP-estimated for-hire trips in state waters (Table 1), which does not seem to be accounted for by lack of compliance alone. Our hope is that this work will begin to highlight why this difference exists.

Table 1. Maryland logbook-reported angler trips compared to MRIP estimated for-hire anglers trips in state waters.

Year	All MD Logbook Reported Angler Trips	MRIP Estimated MD State Waters For-Hire Angler Trips	PSE
2013	111,582	132,807	15.4
2014	99,729	168,201	12.7
2015	75,892	141,152	11
2016	78,890	106,933	12.2
2017	81,516	194,097	9.7

In 2006, the National Research Council completed an independent review of national recreational fisheries survey methods. Their primary finding regarding for-hire fisheries was that reporting should be mandatory (NRC 2006). However, they also noted that data collected through logbooks require verification and enforcement in order to be reliable. In 2013, Donaldson et al submitted a report to MRIP

on their for-hire logbook pilot in the Gulf of Mexico. In their report, they included a series of recommendations for implementing a census-level logbook program. Recommendations include: reporting with built-in quality control features, industry-led design, ability of logbook to record and store records for later retrieval, timely reporting that can be enforced, and field validation. ACCSP then held a workshop on the Inventory and Comparison of For-Hire Data Collections in the Atlantic and Gulf of Mexico: Opportunities for Convergence in 2016. There was consensus at the workshop for, “reducing redundancy through convergence of existing programs or transitioning to a comprehensive single program is possible with the primary challenges coming from the socio-political aspects.” Maryland has worked with the commercial industry to create a tool that should meet the recommendations of NRC and Donaldson et al.

ACCSP’s Recreational Technical Committee is currently developing a Comprehensive For-Hire Data Collection and Monitoring White Paper that would be submitted for peer review and approval for use by 2020. To date, no single comprehensive for hire reporting and monitoring program, or standards, formally exist. This proposed pilot would inform the discussion on the approach to comprehensive for-hire data collection and monitoring. ACCSP is currently considering using APAIS as validation of for-hire logbooks and catch estimation based on MRIP’s SC For-Hire Logbook Validation (Dukes et al, 2015); a different approach is proposed here which could provide states another option for for-hire data collection. The approach here could, however, be modified in future years to include APAIS intercepts as harvest validation in lieu of dockside monitors.

The Maryland Blue Crab fishery was declared a disaster in 2008. Using the federal funds received to mitigate the disaster, an industry-led “Blue Crab Design Team” (Team) began to meet to discuss different approaches to management. A significant recommendation was to improve reporting accountability. With their input, the Maryland Department of Natural Resources, and our partners Maryland Environmental Service, Electric Edge Systems Group, Versar, and Oyster Recovery Project designed an electronic reporting system which includes a hailing component: FACTS (<https://www.fisheryfacts.com/index.cfm>). It is a web-based reporting tool, with both a portal and a mobile interface. Hailing (or pre-trip notifications) allows the department to know that a trip has started and to expect a report. It also allows the department to verify via “spot checks” that harvest reported is accurate. In 2012, we began to pilot the system, FACTS™, with the blue crab industry. In 2015, we extended the pilot to Chesapeake Bay fin fish harvesters. Maryland has successfully deployed FACTS™ for its Chesapeake Bay commercial blue crab and finfish fleets (<http://dnr.maryland.gov/fisheries/Pages/E-reporting/index.aspx>) and it is proven to be an effective method for providing timely, verified harvest (Slacum et al. 2013, 2015). Approximately 10,500 trips were reported in 2017 using FACTS™. The system also serves as an important business tool, allowing commercial fishermen to track their harvest and effort as well as monitor and transfer individual quotas. The department uses the system for administrative purposes (permitting and quota monitoring), enforcement, and to target biological sampling efforts.

Since its inception, Maryland’s for-hire industry has been requesting the ability to report harvest using Maryland’s E-reporting tool (FACTS™), but additional development costs and funding constraints kept Maryland from adding for-hire fleet reporting options. In this project we will work with industry to add for-hire reporting options into Maryland’s E-reporting tool. A representative sample of industry representatives interested in helping with the project are listed in Table 2. We will also build additional effort and catch data reporting options into the E-reporting tool. Currently, our logbooks do not collect number of lines fished or duration of fishing, which we expect to add to the FACTS™ interface. Changes to fishing practices and species availability have also meant new gears are used, and we don’t collect gear type as a standard data element. Additionally, while reporting discards is encouraged, it’s not easy to do

on the logbook. The FACTS™ interface makes reporting all catch and dispositions easier. We have seen an increase in reported discards in the commercial fleet using the FACTS™ reporting tool.

Maryland’s for-hire fleet has frequently requested additional data be collected on their discards. They believe additional discard data can be used for better management, in some cases in-season. During this pilot, we intend to collect additional catch and effort data through at-sea sampling trips arranged with the captains. At-sea sampling is designed to accomplish two objectives. The first objective will be to characterize for-hire fleet discards by documenting daily discards observed on vessels fishing throughout Chesapeake Bay. The second objective is to work with industry to design an approach to document discards in FACTS™ that is easy to use and maximizes for precision. We anticipate a portion of at-sea monitoring will occur in the beginning of the project during the system development stage. This will allow us to integrate and test the user preferred discard reporting option in FACTS™. Once the system is ready for testing, at-sea monitoring will continue to further characterize for-hire fleet discards and fine tune the discard reporting process. We anticipate having at-sea monitors on 10% of the total number of trips verified (400 trips verified x 10% = 40 trips). At-sea monitors will be documenting the total amount, species, and representative lengths from all discards occurring during a fishing trip. Monitors will also document time of day of each discard. In addition to helping develop the reporting process, collected discard information will be compared to all discard reports reported during the pilot.

Table 2. Representative sample of charter operators requesting a for-hire reporting module in FACTS™.

Captain's Name	Business Name
Jeff Coats	Pitboss Fishing
Bill Hollingsworth	Rollin Rock Charters
Don Marani	Capt Don's Fishing Charters
Jerry Ashby, Sr	Miss James Charters Sportfishing
Tom Ireland	Patience Fishing Charters

Lastly, we believe this effort will allow us to improve our vessel list and vessel directory that is currently used to complete the MRIP for-hire survey. In any given pre-validation draw (typically about 60 vessels per week), we are only able to validate about 25 vessels because we do not have location information for the remaining 35 vessels. By requiring a landing location for all vessels reporting through FACTS™, a necessity to complete a harvest verification, we will have a more complete and current vessel list and directory (NRC 2006). A more robust vessel list and directory can lead to a more robust estimate – until we have 100% reporting via a for-hire logbook with hailing requirement.

Results and Benefits

Coastwide, this tool will be the model for comprehensive, verified state for-hire fishery data collection. It will also address the recommendations of the 2006 NRC and the ACCSP For-Hire Workshop (May 2016) to improve the timeliness of wave data; and maintain common data elements for for-hire trip reporting. The catch and effort data that will be available to our partners may provide information useful to in-season management.

In the long-term, the ability to verify harvest, along with collecting other catch and effort (discard) data, allows the modernized data system to replace the MRIP for-hire survey and provide managers with a more precise landings record. Maryland reporting rates would improve with the expanded use of the

system. Robust discard data collected in real-time should allow for crafting of more appropriate management measures, potentially even in-season.

Striped bass are the primary target and harvest of the charter fleet in Maryland’s Chesapeake Bay. More accurate and precise for-hire landings of such an important coastal species will be a benefit to fisheries managers and to the industry. We believe at-sea sampling of Maryland’s Chesapeake Bay charter fleet will capture samples from species not intercepted by APAIS data collection. For example, Maryland logbook data indicate an increase in both cobia and red drum catch in recent years Table 3, where MRIP data do not show any catch of these species in the for-hire fleet. We anticipate that we will be able to collect additional biological samples (length and weight) of both of these species, which are in the top 25% of species needing additional samples as identified by the Biological Review Panel.

Table 3. Logbook-reported cobia and red drum catch (harvest and discards) in Maryland Chesapeake Bay charter boats.

	2015	2016	2017
Cobia	577	107	168
Red Drum	405	1515	1036

We expect this effort will allow us to improve our vessel list and vessel directory that is currently used to complete the MRIP for-hire survey. A more robust vessel list and directory can lead to a more robust estimate under the current MRIP for-hire survey. All users of for-hire estimates in Maryland will realize an improvement.

Data Delivery Plan

Data will be transferred directly from FACTS™ to the ACCSP Data Warehouse via application programming interface (API) daily. Additional discard data exceeding the current logbook requirements will also be collected and provided to management partners during the pilot also through an API.

Approach

Successful completion of this project will involve five core activities: captain engagement and system design, interface design, a field pilot of the for-hire electronic reporting system, dockside monitoring implementation, and feedback. We will conduct these activities for one year from receipt of funds.

1. Industry Outreach and System Design

We plan to use FACTS™ as the electronic reporting platform for this project. Maryland has successfully deployed FACTS™ for its Chesapeake Bay commercial blue crab and finfish fleets and it is proven to be an effective method for providing timely, verified harvest (Slacum et al. 2013, 2015). FACTS™ also serves as an important business tool, allowing commercial fishermen to track their harvest and effort as well as monitor and transfer individual quotas. In the design of the blue crab and finfish modules, we relied heavily on the participation of active commercial fishermen for input on business rules and essential system requirements. As such, we will identify a core group of active for-hire captains to participate in the initial development of the Maryland for-hire module of the FACTS™ system.

Business rules of the for-hire fleet can be different depending on license type. Outreach with captains representing distinct areas will be essential to building an appropriate interface for Chesapeake (state licensed) for-hire users. Several requirement validation sessions will be held at the beginning of the project to develop the structure of the system.

2. Interface Design

Based on captain input, a user interface will be developed that is intuitive and streamlined. This is one way the proposed work will modernize data management systems to reduce costs and improve the consistency, interoperability, quality and/or usability of information collected using technology. The data collection interface will be tailored to meet captains' and agency needs on a trip by trip basis. The for-hire industry is also interested in improving the accuracy of discard data and discard reporting will be added as a field in the interface. It is envisioned that a mobile application will be developed to allow for offline data collection that can submit the collected data once a connection has been established. A system testing plan and schedule will be developed and implemented as part of this task and components (unit testing) of the system will be tested as they are completed, and then end to end testing will occur to ensure the system functions as it's intended to be used in the fishery.

3. Pilot Data Collection System

The goal of the pilot is to recruit 50 Chesapeake Bay captains. There are approximately 350 decals issued every year that are expected to report fishing effort and harvest. This pilot will be open to all 350 captains (100%) that wish to use the system. Currently, 21 of the licensees that already use FACTS™ also have a charter decal. They will be provided with details on the level of commitment required to participate and the general ground rules required to conduct a successful pilot. The pilot will be implemented following the structure of the previous two successful pilot projects conducted in Chesapeake Bay. Those pilots included working directly with the stakeholders to gather feedback about system use, implementing changes to the system based on feedback, and finalizing the system for full implementation. All pilot participants will be trained to use the system, user manuals will be developed to assist fishers with understanding reporting requirements and troubleshooting, and there will also be a 24-hour, 7-days a week helpline for captains to get assistance during the pilot and to provide us with feedback. While the pilot is operational, we will actively solicit feedback from captains about their experience and system use. Trip level data and associated metadata collected during the pilot will be provided to fisheries management partners via ACCSP.

Should the funds become available in the middle of the charter fishing season (April-December), staff will work with ACCSP personnel to determine the appropriateness of delaying the start of the project or simply requesting a no-cost extension to ensure the entire fishing season is covered.

4. Dockside Monitoring Implementation and Trip Sampling

The FACTS™ platform incorporates modules for harvest verification by dockside monitors which ensures improved data quality, in addition to the provision of timely data. Dockside monitoring is integral to our approach and was tested during a pilot of the FACTS™ system for Maryland's commercial blue crab fleet. An essential finding was that verification was the best way to improve user accountability (Slacum et al. 2013, 2015). A recent pilot in the Gulf of Mexico had an equivalent finding (Donaldson et al. 2013). Similar dockside monitoring will be designed to appropriately sample up to 10% of the for-hire trips reported via FACTS™. For-hire captains participating in the FACTS™ program will be 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 start hail information. Failure to send an end hail, triggers automatic reminders by text. They will be required to comply with spot checks. Landing locations where spot checks will occur consist of public landings and public and private marinas. 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. In addition, observers will be deployed on a portion of charter trips

during the pilot to document discards. Data collected during observed trips will be compared to discard data from non-observed trips and discard documented in spot checks to verify the accuracy.

A technician will be provided a tablet and the existing FACTS™ harvest verification tool will be modified to collect for-hire logbook verification. At-sea sampling of charter boats will also be conducted by the technician.

We believe at-sea sampling of Maryland’s Chesapeake Bay charter fleet will capture samples from species not intercepted by APAIS data collection. We anticipate that we will be able to collect additional biological samples (length and weight) of both of these species, which are in the top 25% of species needing additional samples as identified by the Biological Review Panel.

5. Feedback

Feedback meetings to provide thoughts about the system and the pilot will be conducted with all stakeholders at the end of the year. All the information gathered during the pilot will be summarized and analyzed to evaluate the system performance and whether the system functioned as intended.

Geographic Location

Maryland’s state-licensed for-hire fleet conducts their fishery in Maryland’s portion of the Chesapeake Bay. Maryland’s coastal for-hire fleet operates under a more complex myriad of federal business rules. Should we receive funding, we will focus on Maryland’s Chesapeake Bay for-hire fleet. Based on the success of this pilot, funding requests in future years may address the needs of Maryland’s Atlantic coastal fishery.

Milestone Schedule

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Industry Outreach and System Design	X	X													
Interface Design and Development		X	X												
API Development			X	X											
Pilot Data Collection				X	X	X	X	X	X	X	X	X			
Dockside Monitoring and Trip Sampling				X	X	X	X	X	X	X	X	X			
Feedback												X			
Report Writing							X						X	X	X

Project Accomplishments Measurement

	Accomplishment Goal
Number of licensees using FACTS to report for-hire logbook data	50
Number of vessels reporting trips in FACTS	70
Number of trips reported via FACTS	4,000
Number of trips validated through dockside monitoring	400
Number of trips sampled for discard data	40

Number of licensees using FACTS™ to report for-hire logbook data: There are approximately 350 decals issued every year that are expected to report fishing effort and harvest. This pilot will be open to all 350 captains (100%) that wish to use the system. Currently, 21 of the licensees that already use FACTS™ also have a charter decal. By the end of the project period, it is anticipated that there will be 50 participants in compliance. Routine training sessions will be held to incorporate new users throughout the pilot, in excess of the expected 50 participants, if necessary. Current users of FACTS™ that also hold charter decals (own charter businesses) will be the easiest users to recruit; there are currently 21 license holders that fit those criteria. The number of participants that are trained and use the system will be documented, and any users that choose to return to paper reporting will also be documented along with their reason(s). All trip-level logbook data will be supplied to ACCSP's Data Warehouse using an API.

Number of vessels reporting trips in FACTS™: 70 vessels are the expected target number of vessels in the program. In Maryland, individuals are licensed to run commercial fishing businesses, but each vessel used to conduct for-hire trips in state waters must have a charter decal. Of the 50 Chesapeake Bay for-hire captains, several of them have multiple vessels they use to carry for-hire trips.

Number of trips reported and verified in FACTS™: By the end of the project period, it is anticipated that there will be approximately 4,000 for-hire trips reported via FACTS™. This represents approximately 40% of the current trips reported in state fisheries. The current annual reporting rate (number of reports received/number of reports expected) is approximately 75%; this tool is intended to reduce under-reporting of trips. The FACTS™ platform is designed to allow for harvest and effort verification, therefore capturing any trips that may be under (non) reported. Up to 10% of the reported trips will be verified per the dockside monitoring design.

Cost Summary and Outlook on Future Funding

In-Kind Contribution

MD DNR is committed to modernizing its fishery dependent reporting system and has been supporting the development of a comprehensive E-reporting and management system since 2012. Annual system operations and user support (by MD DNR employees and outside contractors) is provided through state funding. System development has been supported by state funds, but major system advancements have been accomplished with additional support from external grant funds. Maryland has already completed work on two of its fisheries, finfish and blue crab, and is now focused on developing reporting capabilities for its for-hire fleet.

Total MD DNR In-Kind Contribution- \$129,329.00 (See budget table for specific dollar amounts)

MD DNR Staff (See budget table for specific dollar amounts) - Following the already proven process of combined state and grant funding, the MD DNR will provide in-kind support by dedicating three staff (associated overhead and fringe benefits) to assist in the management and staffing of the Pilot Project. This is the approach used during the two previous pilot projects resulting in Maryland's current E-reporting system. In fact, all three staff participated in portions of each of the two previous pilots and are integral members of MD's E-reporting Team. While each staff has other duties to fulfill at the Department, supporting this Pilot is a logical extension of those duties and will not jeopardize the success of the Pilot Project. See budget for specific staff time dedicated to this project.

In-Kind E-reporting System Budget (See budget table for specific dollar amounts)

Call center- The call center is used by some fishers to report harvest. The cost of the call center is fully supported through funding by the MD DNR. We anticipate the call center will be used by some for-hire fishermen to report harvest during the project. The call center also provides a back-up for web-based reporting when user specific or internet specific technical issues occur. Having many options for fishers to report has been vital during previous pilots and has helped to alleviate concerns by some fishers that not being able to report is a violation. We also receive valuable feedback from the call center through their interactions with fishers. The monthly call center fee is \$3,000.00. We estimate 20% of the call center of the call center monthly effort will be required to support the 12 month Pilot Project.

In-Kind Call Center Funds- \$4,000.00

FACTS™ - FACTS™ is a software as a service (SaaS) platform and the MD DNR is fully funding the annual costs to maintain access to fishers to report. All trips and harvest reported by project participants will require access to FACTS™ regardless of the platform (i.e., application, mobile web, etc.) used to report. The monthly FACTS™ fee is \$13,000.00. We estimate that 20% of FACTS™ use will be dedicated to the 12 month Pilot Project.

In-Kind E-reporting System (FACTS™) Funds- \$31,200.00

Help Line- MD's E-reporting program has a dedicated 24/7 help line to support fishers with any problems or questions they have while E-reporting. The help line will also be used to gather feedback from for-hire fishermen participating in the pilot project and for communication with roving monitors and observers during the pilot. The help line has been extremely successful for data gathering and fisher satisfaction. The monthly help-line fee is \$1,500.00. We estimate that 20% of the monthly use of the help-line will be to support the 12 month Project.

In-Kind E-reporting System (FACTS™) Funds- \$3,600.00

Equipment - \$2,000

Tablets will be provided to the technicians for data entry during monitoring. Those tablets will be provided by the existing program.

Third party contractual services funding request - \$182,912.00

Project and contract management- The MD DNR has already competitively procured a contract with the Oyster Recovery Partnership (ORP) Coastal Resource Assessment and Monitoring (CRAM) division to execute the E-reporting with FACTS™ project and all sub-awards will therefore be managed by ORP. ORP's CRAM has expertise in the development of large scale resource assessments, fishery independent and dependent data acquisition and management, statistics, and stakeholder engagement. Representative projects include long-term management of Maryland's development of Maryland's E-Reporting system

using FACTS™, including design, implementation and management of roving dockside monitors from 2012 to 2014. Therefore, we can leverage the flexibility in ORP's seasonal hiring process that the state's process does not have.

ORP will be responsible for: communicating with MD DNR; communication between Project Team members; scheduling and implementing Team efforts, such as the formal implementation and management of for-hire fleet outreach to fishers and industry meetings that include training fishers how to use the system and follow-up meetings to gather final feedback. The budget for this portion of the project consists of staff time for the Program manager and one E-reporting specialist to coordinate these events; guide the design, development and implementation of the roving monitor and by-catch discard program; manage the development of the for-hire reporting module; integrate feedback from fishers to modify the system; communicate progress with MD DNR; compile project results and report; and process invoices. This task will also involve continued feedback and outreach to fishers actively using the system and will involve significant amounts of staff time to troubleshoot issues, and implement modifications to the system based on fisher's feedback or Team evaluation.

ORP staff fringe benefits are budgeted at 35% of salary.

Project and contract management budget: \$21,821.00

Requirements Validation and Systems Development- This task involves staff time for Electric Edge Systems Group staff to attend meetings with MD DNR to gather business rules to design the for-hire-fleet reporting module (these meetings will be coordinated and facilitated by ORP). This task also includes programming time to customize the existing FACTS™ system to account for for-hire harvest reports, and develop the roving monitor interface so monitors can verify actively fishing for-hire vessels. Internal systems tests and external testing with industry to customize the system will be part of this task, as well as the integration of for-hire hauls and harvest reports into ACCSP's data warehouse through the existing API.

Requirements Validation and Systems Development budget: \$57,729.00

For-Hire Dockside Monitoring and By-catch Discard Program- This task includes the design and implementation of dockside monitoring and by-catch discard program. Funds will be used to support Versar, Inc. staff in the development and implementation of the overall approach used to verify for-hire reporting at the dockside to include survey design and dockside monitor FACTS™ interface (scheduling and reporting). Funds will also be used to coordinate, schedule and perform quality control and assurance site visits of dockside monitors during the project. Funds will support the analysis of dockside monitoring data to evaluate effectiveness and determine optimal monitoring. A large portion of these funds (approximately \$25,000.00, see Table 4.) will be dedicated to hiring and supporting dockside monitors. These funds are budgeted using a total of 4 dockside monitors to target approximately 350 for-hire trips between April and December. It is anticipated that some trips will intercept more than one for-hire vessels and those trips will provide enough additional successful spot checks to bring the total number of successful spot checks to 400 or 10% of anticipated reported trips during the project. Previous dockside monitoring work in Maryland has shown that monitors require approximately 5 hours to travel to and from and to conduct spot checks on any given day, and perform administrative duties. Therefore, 5 hours was used to budget each spot check. Funding to support the design and analysis of the by-catch discard program is also included (\$100/trip to captain plus staff hours) to support on the water data collection and analysis.

Table 4. Cost Calculation of Dockside Monitors Time

	April	May	June	July	August	Sept	Oct	Nov	Dec	Total Cost
Per week	50	50	40	35	35	35	35	35	35	
Hours/day/monitor	5	5	5	5	5	5	5	5	5	
Hours per month	250	250	200	175	175	175	175	175	175	
Total month @ Rate \$14	3500	3500	2800	2450	2450	2450	2450	2450	2450	\$24,500

For-Hire Dockside Monitoring and By-catch Discard budget: \$61,273.00

For-Hire Dockside Monitoring, QA/QC, and Meeting Travel Expenses- This portion of the budget is for expenses incurred by dockside monitors to travel to and from dockside monitoring and for travel to meetings. The anticipated approach to verify for-hire logbooks by dockside monitors will be to hire four monitors that will be strategically located in areas where for-hire fleet activity is concentrated. We anticipate travel for dockside monitor spot checks will range between 30 to 50 miles roundtrip and have budgeted using an average daily dockside monitor trip of 40 miles roundtrip. The anticipated number of trips is 350 trips between April and December and gas reimbursement is the current Federal standard of \$.545/mile. Dockside monitors will also be required to attend 2 meetings for training and debriefs. The total number of anticipated miles is 14,320 miles.

Additional travel budget is requested for members of the E-reporting project team to conduct QA/QC of dockside monitoring activities and for training. In addition, travel to fisher training and feedback meetings is also budgeted. We anticipate a total of 1,600 miles of travel for these activities.

For-Hire Dockside Monitoring, QA/QC, and Meeting Travel Expenses: \$8,676.00

Indirect Costs – \$33,413

See Appendix A for state negotiated rate agreement (22.35%).

Funding Transition Plan

Development costs should only be necessary during the initial year of funding. Should a second year of funding be required, any request would only include system maintenance and harvest monitoring activities. To reduce costs in future years, APAIS personnel could be trained to conduct harvest monitoring activities on days when APAIS trips are not being sampled. It is expected that ACCSP will develop an application that will allow APAIS personnel to collect such verifications not just in Maryland, but in other states as well. Once that app has been developed, start hail information, including expected landing location and time, will be sent to SAFIS via an application programming interface (API).

Description	Total Cost	In-Kind Contribution
PROJECT MANAGEMENT		
Personnel (a)		
Program Manager - WS (\$49.57 x 200 hrs)	\$9,913	
E-reporting Specialist - JR (\$31.25 x 200hrs)	\$6,250	
Subtotal Personnel	\$16,163	
Fringe (b)		
Program Manager - WS (35%)	\$3,470	
E-reporting Specialist - JR (35%)	\$2,188	
Subtotal Fringe	\$5,657	
TOTAL PROJECT MANAGEMENT	\$21,821	
In-Kind Personnel Support (Total Includes Fringe)		
Program Manager I (\$31.45 x 918hrs)		\$28,871
Administrator II (\$23.36 x 1278hrs)		\$29,858
Database Specialist II (\$27.85 x 1070hrs)		\$29,800
		\$88,529
Travel (c)		
Mileage for dockside monitors (\$0.545/mile x 14320 miles)	\$7,804	
Mileage for meetings, site visits, QA/QC of dockside monitors (\$0.545/mile x 1600 miles)	\$872	
TOTAL TRAVEL	\$8,676	
Equipment (d)		
Tablets (4 x \$500)		\$2,000
Supplies (e)	\$0	\$0
Contractual (f)		
Requirements Validation and Systems Development		
Electric Edge Systems Group	\$57,729	
Dockside Monitor and Bycatch Discard Support		
Versar, Inc.	\$61,273	
Monitors (\$24,500)		
At-Sea Trips (40x\$100)		
Development and Implementation (\$40.41 x 811hrs)		
In-Kind Contractual Services (Portion of existing services dedicated to project)		
Call Center Service		\$4,000
E-reporting System (FACTS) Support and Maintenance		\$31,200
Help Line Services		\$3,600
TOTAL CONTRACTS	\$140,822	\$38,800
TOTAL DIRECT CHARGES (i)	\$149,499	
TOTAL INDIRECT CHARGES (j)	\$33,413	
TOTAL (sum of Direct and Indirect) (k)	\$182,912	
TOTAL In-Kind		\$129,329
TOTAL PROJECT BREAKDOWN	59%	41%
TOTAL PROJECT VALUE		\$312,241

Summary

Proposal Type: New

Primary Program Priority:

Catch and Effort

There are approximately 350 decals issued every year that are expected to report fishing effort and harvest. This pilot will be open to all 350 captains (100%) that wish to use the system. Currently, 21 of the licensees that already use FACTS™ also have a charter decal. We expect approximately 4,000 vessel trips to be reported through FACTS™, this represents 40% of the logbook-reported trips. Data collected through this program will meet all 8 of the data standards for for-hire census data (ACCSP 2012).

Data Delivery Plan: Data will be transferred directly from FACTS™ to the ACCSP Data Warehouse via application programming interface (API) daily. Additional discard data exceeding the current logbook requirements will also be collected and provided to management partners during the pilot.

Project Quality Factors:

Multipartner/Regional impact including broad applications

Coastwide, this tool will be the model for comprehensive, verified state for-hire fishery data collection. It will also address the recommendations of the 2006 NRC recommendations and the ACCSP For-Hire Workshop (May 2016) to improve the timeliness of wave data; and maintain common data elements for for-hire trip reporting. Lastly, it addresses priorities of the Recreational Technical Committee: Comprehensive For-Hire Data Collection and Monitoring, Improved recreational fishery discard and release data, and Biological sampling for recreational fisheries separate from MRIP APAIS. The MRIP for-hire survey is expected to benefit from the improvements in the vessel list and vessel directory. ACCSP is a partner in the data delivery and communication processes.

Funding Transition Plan: Development costs should only be necessary during the initial year of funding. Should a second year of funding be required, any request would only include system maintenance and harvest monitoring activities. To reduce costs in future years, APAIS personnel could be trained to conduct harvest monitoring activities on days when APAIS trips are not being sampled. It is expected that ACCSP will develop an application that will allow APAIS personnel to collect such verifications not just in Maryland, but in other states as well. Once that app has been developed, start hail information, including expected landing location and time, will be sent to SAFIS via an application programming interface (API).

In-Kind Contribution: 41% (see page 13)

Improvement in data quality/quantity/timeliness

Data collected through this program will meet all 8 of the data standards for for-hire census data (ACCSP 2012); currently data are expected to be reported weekly, with an annual reporting rate of 75%. Under this pilot, all data collected through the system will be transferred directly from FACTS™ to the ACCSP Data Warehouse via application programming interface (API) daily. Under the current reporting logbook requirements, data is supplied to the Data Warehouse via a semi-annual data feed.

Potential Secondary Module:

Biological Sampling

Maryland logbook data indicate an increase in both cobia and red drum catch in recent years where MRIP data do not show any catch of these species in the for-hire fleet. We anticipate that we will be able to collect additional biological samples (length and weight) of both of these species, which are in the top 25% of species needing additional samples as identified by the Biological Review Panel.

Sociological and Economic

One of the primary benefits of a hailing system is the ability to enforce reporting and to ensure that licensees not submitting reports are truly not fishing. The Committee on Economics and Social Sciences identified the need to address latent effort and number of operators guiding for-hire trips.

References

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Slacum, H.W. JR, H. Dew-Baxter, R. Corbin, and B. Richkus. 2015. 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. February 2015. Versar, Inc., 9200 Rumsey Rd., Columbia, MD. 21045.



COMMERCIAL CHARTER BOAT CAPTAIN'S DAILY LOG

THIS LOG SHOULD BE CARRIED ON BOARD VESSEL DURING ALL FISHING TRIPS

DATE

M	M	D	D	Y	Y
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NUMBER OF PEOPLE EXCLUDING CREW	NUMBER OF TRIPS	AREA WHERE FISH WERE CAUGHT (SEE CODES)									
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017 FLOUNDER/SUMMER	<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>				<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>						
033 SEABASS/BLACK	<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>				<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>						
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NO FISHING THIS WEEK <input style="width: 40px; height: 20px;" type="checkbox"/>	FINISHED FISHING FOR THE YEAR <input style="width: 40px; height: 20px;" type="checkbox"/>										

COMMERCIAL CHARTER BOAT CAPTAIN'S DAILY LOG



Figure 1. Charter Boat Captain's Daily Log
<http://dnr.maryland.gov/fisheries/Documents/Comchartcaptdailylog.pdf>

Carrie A Kennedy
Maryland Department of Natural Resources
580 Taylor Ave, B-2
Annapolis, MD 21401

EXPERIENCE

Maryland Department of Natural Resources

Fishing and Boating Services

January 2015-Present

Program Manager I

Annapolis, Maryland

Data and Quota Monitoring Program Manager

- Manage staff responsible for implementing new E-reporting with FACTS™ initiative.
- Manage staff responsible for commercial harvest reporting.
- Manage staff responsible for monitoring harvest of quota-limited species, including striped bass.
- Manage staff responsible for issuing eligible commercial permits.

Responsibilities also include advising managers on closing and opening quota-monitored species; coordinating Industry Workgroups; proposal development and submission in support of electronic reporting; and recommending changes to commercial permitting regulations.

Maryland Department of Natural Resources

Fisheries Service

November 2008-

January 2015

Program Manager I

Annapolis, Maryland

Coastal Fisheries Program Manager

- Manage staff responsible for Coastal Bays Finfish Investigation.
- Manage staff responsible for Atlantic Bluefin Tuna/ Billfish Catch Card Program.
- Manage staff responsible for coastal fisheries permits and quota monitoring.

Responsibilities also included advising coastal fisheries management decisions; coordinating Coastal Fisheries Advisory Committee and Spiny Dogfish Industry Workgroup; meeting ASMFC, MAFMC, and NMFS guidelines for Maryland.

Maryland Department of Natural Resources

Fisheries Service

June 2005-November

2008

Natural Resources Biologist III

Annapolis, Maryland

Commercial Striped Bass Project Leader, duties include:

- Maintain Microsoft Access database of harvest, permits, and striped bass harvest tags. Distribute harvest permits and tags.
- Monitor progress toward Maryland's quota daily through check station system.
- Maintain ArcView GIS and Microsoft Access databases of all registered pound net sites in the state of Maryland. Register and transfer pound net sites in accordance with regulation.
- Maintain Microsoft Access database of registered haul seines in the State of Maryland. Inspect and seal haul seines in accordance with regulation.
- Supervision of Natural Resource Biologist I and Administrative Specialist.

**Maryland Department of Natural Resources
Fisheries Service**

**April 2005-June 2005
Annapolis, Maryland**

Natural Resources Biologist II

Fisheries Management Plan Coordinator, Job Duties:

Responsible for writing/updating fisheries management plans. Attended ASMFC meetings and Chesapeake Bay Program meetings as a Fisheries Service Representative. Wrote legislative updates on fisheries management plans.

Maryland Fisheries Service representative to:

-National Marine Fisheries Service Highly Migratory Species Advisory Panel (2010-2015)

-Atlantic Coastal Cooperative Statistics Program's Operation Committee (2006-2012)

-Atlantic Coastal Cooperative Statistics Program's Recreational Technical Committee (2008-2011)

LEADERSHIP COURSEWORK

Introduction to Adaptive Leadership, MATTeam, Assoc. of Fish and Wildlife Agencies, July and August 2017

Supervisor Development Certificate Program, Anne Arundel Community College, July 2015 – January 2016

Conflict, Management Assistance Team, Assoc. of Fish and Wildlife Agencies, October 2014

Disorder to Order, Management Assistance Team, Assoc. of Fish and Wildlife Agencies, July 2014

Leader as Supervisor, Management Assistance Team, Assoc. of Fish and Wildlife Agencies, May 2013

Consent Building, Institute of Participatory Management and Planning, February 2010

EDUCATION

St. Mary's College of Maryland

St. Mary's City, Maryland

Bachelor of Arts May 1999

**State and Local Governments
Indirect Cost Negotiation Agreement**

EIN: 52-6002033

Organization:

Maryland Department of Natural Resources
580 Taylor Avenue, B-4
Annapolis, MD 21401-2352

Date: November 13, 2017

Report No(s) .: 18-A-0132

Filing Ref.:

Last Negotiation Agreement
dated August 15, 2016

The indirect cost rates contained herein are for use on grants, contracts, and other agreements with the Federal Government to which 2 CFR Part 200 applies for fiscal years beginning on or after December 26, 2014 subject to the limitations in Section II.A. of this agreement. Applicable OMB Circulars and the regulations at 2 CFR 225 will continue to apply to federal funds awarded prior to December 26, 2014. The rates were negotiated by the U.S. Department of the Interior, Interior Business Center, and the subject organization in accordance with the authority contained in applicable regulations.

Section I: Rates

Type	Effective Period		Rate*	Locations	Applicable To
	From	To			
Fixed Carryforward	07/01/17	06/30/18	17.82%	All	1/
Fixed Carryforward	07/01/17	06/30/18	21.00%	All	2/
Fixed Carryforward	07/01/17	06/30/18	20.32%	All	3/
Fixed Carryforward	07/01/17	06/30/18	24.58%	All	4/
Fixed Carryforward	07/01/17	06/30/18	15.16%	All	5/
Fixed Carryforward	07/01/17	06/30/18	13.82%	All	6/
Fixed Carryforward	07/01/17	06/30/18	27.73%	All	7/
Fixed Carryforward	07/01/17	06/30/18	60.05%	All	8/
Fixed Carryforward	07/01/17	06/30/18	59.83%	All	9/
Fixed Carryforward	07/01/17	06/30/18	30.40%	All	10/
Fixed Carryforward	07/01/17	06/30/18	31.38%	All	11/

- 1/ Forest Service
- 2/ Wildlife & Heritage Service (Non-PR)
- 3/ Wildlife & Heritage Service (PR)
- 4/ Park Service
- 5/ Natural Resources Police (Non-PR)
- 6/ Natural Resources Police (PR)

- 7/ Resource Assessment Service
- 8/ Chesapeake & Coastal Services (Non-DJ)
- 9/ Chesapeake & Coastal Services (DJ)
- 10/ Fishing & Boating Services(Non-DJ)
- 11/ Fishing & Boating Services(DJ)

***Base:** Total direct salaries and wages, including fringe benefits. The rate applies to all programs administered by the non-federal entity. To determine the amount of indirect costs to be billed under this agreement, direct salaries and wages and related fringe benefits should be summed and multiplied by the rate. All other program costs should be eliminated from the calculation.

Treatment of fringe benefits: Fringe benefits applicable to direct salaries and wages are treated as direct costs; fringe benefits applicable to indirect salaries and wages are treated as indirect costs.

A. Limitations: Use of the rate(s) contained in this agreement is subject to any applicable statutory limitations. Acceptance of the rate(s) agreed to herein is predicated upon these conditions: (1) no costs other than those incurred by the subject organization were included in its indirect cost rate proposal, (2) all such costs are the legal obligations of the grantee/contractor, (3) similar types of costs have been accorded consistent treatment, and (4) the same costs that have been treated as indirect costs have not been claimed as direct costs (for example, supplies can be charged directly to a program or activity as long as these costs are not part of the supply costs included in the indirect cost pool for central administration).

B. Audit: All costs (direct and indirect, federal and non-federal) are subject to audit. Adjustments to amounts resulting from audit of the cost allocation plan or indirect cost rate proposal upon which the negotiation of this agreement was based will be compensated for in a subsequent negotiation.

C. Changes: The rate(s) contained in this agreement are based on the organizational structure and the accounting system in effect at the time the proposal was submitted. Changes in organizational structure, or changes in the method of accounting for costs which affect the amount of reimbursement resulting from use of the rate(s) in this agreement, require the prior approval of the responsible negotiation agency. Failure to obtain such approval may result in subsequent audit disallowance.

D. Rate Type:

1. **Fixed Carryforward Rate:** A fixed carryforward rate is based on an estimate of the costs that will be incurred during the period for which the rate applies. When the actual costs for such periods have been determined, an adjustment will be made to the rate for future periods, if necessary, to compensate for the difference between the costs used to establish the fixed rate and the actual costs.

2. **Provisional/Final Rates:** Within six (6) months after year end, a final indirect cost rate proposal must be submitted based on actual costs. Billings and charges to contracts and grants must be adjusted if the final rate varies from the provisional rate. If the final rate is greater than the provisional rate and there are no funds available to cover the additional indirect costs, the organization may not recover all indirect costs. Conversely, if the final rate is less than the provisional rate, the organization will be required to pay back the difference to the funding agency.

3. **Predetermined Rate:** A predetermined rate is an indirect cost rate applicable to a specified current or future period, usually the organization's fiscal year. The rate is based on an estimate of the costs to be incurred during the period. A predetermined rate is not subject to adjustment. (Because of legal constraints, predetermined rates are not permitted for Federal contracts; they may, however, be used for grants or cooperative agreements.)

E. Rate Extension: Only final and predetermined rates may be eligible for consideration of rate extensions. Requests for rate extensions of a current rate will be reviewed on a case-by-case basis. If an extension is granted, the non-Federal entity may not request a rate review until the extension period ends. In the last year of a rate extension period, the non-Federal entity must submit a new rate proposal for the next fiscal period.

F. Agency Notification: Copies of this document may be provided to other federal offices as a means of notifying them of the agreement contained herein.

G. Record Keeping: Organizations must maintain accounting records that demonstrate that each type of cost has been treated consistently either as a direct cost or an indirect cost. Records pertaining to the costs of program administration, such as salaries, travel, and related costs, should be kept on an annual basis.

H. Reimbursement Ceilings: Grantee/contractor program agreements providing for ceilings on indirect cost rates or reimbursement amounts are subject to the ceilings stipulated in the contract or grant agreements. If the ceiling rate is higher than the negotiated rates in Section I of this agreement, the negotiated rates will be used to determine the maximum allowable indirect cost.

I. Use of Other Rates: If any federal programs are reimbursing indirect costs to this grantee/contractor by a measure other than the approved rate(s) in this agreement, the grantee/contractor should credit such costs to the affected programs, and the approved rate(s) should be used to identify the maximum amount of indirect cost allocable to these programs.

J. Central Service Costs: If the proposed central service cost allocation plan for the same period has not been approved by that time, the indirect cost proposal may be prepared including an amount for central services that is based on the latest federally-approved central service cost allocation plan. The difference between these central service amounts and the amounts ultimately approved will be compensated for by an adjustment in a subsequent period.

K. Other:

1. The purpose of an indirect cost rate is to facilitate the allocation and billing of indirect costs. Approval of the indirect cost rate does not mean that an organization can recover more than the actual costs of a particular program or activity.

2. Programs received or initiated by the organization subsequent to the negotiation of this agreement are subject to the approved indirect cost rate(s) if the programs receive administrative support from the indirect cost pool. It should be noted that this could result in an adjustment to a future rate.

3. Indirect cost proposals must be developed (and, when required, submitted) within six (6) months after the close of the governmental unit's fiscal year, unless an exception is approved by the cognizant agency for indirect costs.

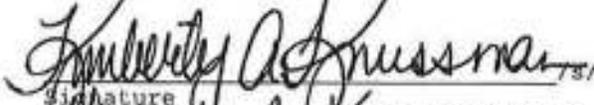
Section III: Acceptance

Listed below are the signatures of acceptance for this agreement:

By the State & Local Government:

Maryland Department of Natural
Resources

State/Local Government



Signature

Kimberly A. Krussman

Name (Type of Print)

Director, Finance & Administrative
Services

11/9/17

Date

By the Cognizant Federal Government
Agency:

U.S. Department of the Interior

Agency:

CRAIG WILLS Digitally signed by CRAIG WILLS
Date: 2017.11.13 14:12:04 -0800

Signature

Craig A. Wills

Name

Office Chief

Office of Indirect Cost Services

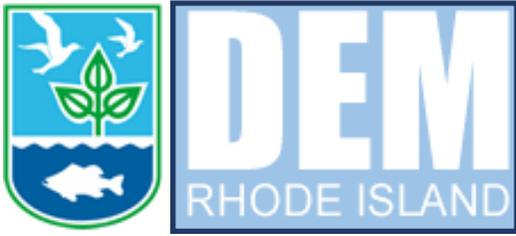
Title

U.S. Department of the Interior

Interior Business Center

Agency

Negotiated by Elena Chan
Telephone (916) 930-3824



Mike Cahall, Director
Atlantic Coastal Cooperative Statistics Program
1050 N. Highland Street, Suite 200 A-N
Arlington, VA 22204

June 11, 2018

Dear Mr. Cahall,

The Rhode Island Division of Marine Fisheries and the Georgia Department of Natural Resources Law Enforcement Divisions, through partnership with Harbor Light Software, are pleased to submit the proposal titled *“Development of a mobile application to assist Maritime Law Enforcement personnel with Fisheries Enforcement tasks”* for your review. We believe this proposal is an important step forward for bringing much needed technology to the Marine Resource Officers. It addresses the following ranking criteria for the FY19 request for proposals: catch and effort, data delivery plan, defined end point, multi-partner and regional impacts and applications, in-kind contribution, data quality, quantity, and provides new data points to be housed in SAFIS.

Please address questions jointly to John Mercer of the Rhode Island Division of Marine Fisheries and Sgt. Cindy Miller of the Georgia Department of Natural Resources Enforcement Division.

Sincerely,

Sgt. Cindy Miller	Officer Jeff Mercer
GADNRLE	RIDEM Fish and Wildlife Division
1 Conservation Way	235 Promenade Street
Brunswick, GA 31520	Providence, RI 02908
404-695-6767	401-222-2284
cindy.miller@dnr.ga.gov	jeff.mercer@dem.ri.gov

Enclosures:

ACCSP Proposal: *“Development of a mobile application to assist Maritime Law Enforcement personnel with Fisheries Enforcement tasks”*

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

Development of a mobile application to assist Maritime Law Enforcement
Personnel with fisheries enforcement tasks

Submitted by:

Officer Jeff Mercer
Rhode Island Department of Environmental Management
Fish and Wildlife Enforcement Division
235 Promenade Street
Providence, RI 02908

Sergeant Cindy Miller
Georgia Department of Natural Resources
Law Enforcement Division
1 Conversation Way
Brunswick, GA 31520

Applicant Name: Rhode Island Department of Environmental Management
Fish Wildlife Enforcement Division and Georgia Department
of Natural Resources Law Enforcement Division

Project Title: Development of a mobile application to assist Maritime Law
Enforcement Personnel with fisheries enforcement tasks.

Project Type: **New Project**

Principal Investigators: Officer Jeff Mercer, RI DEM LE
Sgt. Cindy Miller, GADNRLE
Lt. Warren Fair, USCG

Requested Award Amount: **\$59,875**

Requested Award Period: One year upon receipt of funds

Date Submitted: June 11, 2018

Objective:

To modify and enhance the existing Fisheries Enforcement Compliance application, developed in 2017 as part the South Atlantic States Pilot Implementation Proposal: “*Charterboat Electronic Data Collection.*” The proposed enhancements will allow both State and Federal fisheries enforcement officers to systematically determine regulatory catch compliance via a mobile application while out on the water.

Within the scope of the project the following objectives will be met:

- Evaluate the efficiency of a mobile application compared to the current paper training manuals while out at sea for determining compliance.
- Provide state and federal marine enforcement officers with current regulatory information for an initial-project-manageable subset of species in an easy to use application.
- Ability to track the number of fisheries enforcement boardings and to capture the number of vessel interactions during the project time frame.
- Track the number of violations occurring during those fisheries enforcement boardings.
- Collect data from a vessel boarding, such as GPS location, and officer’s notes of the incident, including possible audio and visual recordings.
- Work with the ACCSP to develop an application interface (API) to store the collected data within the SAFIS management system.
- Where possible, explore the concepts, approaches and usability/accuracy/timeliness issues of current consumer apps used by anglers to obtain current fishing regulations.

Need:

Living Marine Resource (LMR) enforcement is a highly dynamic and ever-changing mission. There is a risk of an enforcement officer receiving regulatory changes well after the change has been implemented at a state or federal level.

Currently, both State and Federal LMRs receive in-depth training to understand the rules and regulations of fisheries law enforcement. Under the currently methodology used in Federal LMR enforcement activities, each student attends a 5 or 8-day training course to learn the major objectives of the LMR mission. These regulations are culminated in a Boarding Officer Job Aid Kit or (BOJAK). Students are taught how to navigate through the 500+ page BOJAK, to be able to determine compliance with every Fishery Management Plan (FMP) for that specific region. Upon graduation, students are required to update the BOJAK when they receive specific paper update notifications when mailed to them from the regional training center. However, with other mission critical demands placed on the officer, the BOJAK may not always be updated in a timely manner. Additionally, these updates may be mailed well after changes to the FMP are made.

State enforcement officers receive a one day training class while in the academy for the state regulated fisheries. Some state officers have been through the USCG training described above, but it has been several years since the state of Georgia has been able to offer this training. Currently, the officer must be diligent enough to review and study the laws on his or her own. GADNRLE completed a Job Aid Book on 3/3/2008 and are currently in the process of updating this book. The officers who have come on in the last seven years do not have the state Job Aid Book and must rely on the officers who have been on the job for a while to pass down information.

State law enforcement agencies, such as the Georgia Department of Natural Resources Law Enforcement, GADNRLE, rely on state law books supplemented by federal websites which list federal laws and regulations. State law enforcement personnel, when determining applicable federal regulations, must reference different websites for different species or classes of species such as the snapper grouper complex, HMS species, and coastal migratory species.

Under today's compliance, tracking procedures and tracking encounters with vessels are managed separately by every agency. Fisheries management plan compliance is difficult to coordinate between the separate tracking systems. Accessing this data is cumbersome and difficult to locate.

Although there may be applications available for fishermen to provide minimal catch regulation data, these apps do not provide information about other items that the officer must identify, such as allowable gear types, closed locations or reefs, aggregate species rules, turtle mitigation gear rules etc.

Benefits:

Developing a mobile application and content delivery system that can assist in the process of investigation and reporting of fisheries compliance will provide a common source of regulatory information for both state and federal enforcement personnel. By providing for consistent updates of regulatory information and status to the mobile application, enforcement personnel would have access to updated information while investigating vessels out on the water. It is expected that officers, confident in possessing the latest regulatory information, will investigate an increased number of vessels, generating more accurate data regarding fisheries management plan compliance.

The Northeast, Mid-Atlantic and Southeast Fisheries Management Councils work closely with both state and federal law enforcement agencies when considering the implementation of fisheries regulations. An application that provides law enforcement with an improved method to determine compliance will provide the Councils with better data in which to make decisions.

Currently, there is a three-to-four month lead time to get the federal BOJAKs printed at a cost of approximately \$10,000 per year, not including the time and costs of distributing the books to the

officers. The mobile application could be updated quickly, and officers would receive the information the same day and allow for immediate updates each time they log in.

The form factor of a smart phone or tablet device, holding the regulatory information, versus using a large paper binder to flip back and forth to find regulation information will also be easier for an officer to use, allowing them to focus on their interaction with the personnel on a vessel. This has safety benefits as the officer will be less distracted in what can be a contentious situation.

This application would serve both State and Federal LMRs and give them access to current rules and regulations for both state and federal waters. Using GPS capabilities in the smart phone or tablet device, officer's locations can be determined to assist the officer in figuring out if state or federal jurisdiction applies for any given encounter. **This project addresses the ACCSP's catch and effort priority by providing marine enforcement officers with an electronic tool to track catch compliance and by utilizing SAFIS as tool to house these data.**

An added benefit to this type of electronic tool would be the ability to capture vessel boarding contact data. Once contact has been made with a specific vessel, an electronic "tag" or "receipt" of that boarding would be captured and could be utilized by several different agencies to determine regulation and mission effectiveness. Potentially, audio and video recording may be integrated into the application to provide documentation of each officers' encounters. **Currently, there is no central repository for maintaining information about the details of vessel encounters. Under this proposal, this contact data would be housed in SAFIS and would then be available for all partners to utilize in a manner deemed appropriate under current rules and regulations.**

At present, the Coast Guard utilizes a system called MISL. This system houses data on all Coast Guard activity. The data contained in this system is not shared with state fisheries law enforcement officers. Any state data collection systems in use are also not shared with the Coast Guard. Under the current system, a state fisheries enforcement officer could have contact with a vessel and issue a warning to the Captain for a violation such as the improper amount of life jackets on board. A Coast Guard officer could board that same vessel 45 days later and find the same violation, but not know that the Captain had already been warned of the violation previously and failed to rectify the situation. This proposal would provide an intelligence sharing platform for all stake holders that could aid in the safety of life at sea.

By utilizing new technology on the market to document compliance encounters and vessel boardings, this project will open new methods of data collection to monitor catch and effort compliance. This tool would be available for use by both state and federal partners and their law enforcement divisions.

Data Delivery Plan:

Data will be collected and stored on the smart phone devices. When the devices are within Wi-Fi range, the application will utilize the ACCSP API delivery method to send reporting and location data to the SAFIS database. The data collected will be retained within SAFIS and disseminated under current protocol. Uses for the data could include determining the level of compliance for different fisheries management plans. The data could also be matched with fishermen's trip reports or dealer reports.

Approach:

A mobile application compatible with iOS and Android, capable of running on either smart phones or tablets will be created for officers to use in the field to manage their encounters with vessels and the personnel on the vessels. The application will use GPS data from the device to recommend whether state or federal regulations should apply to the encounter and will allow the officer to indicate whether a for-hire, commercial or recreational trip is being processed. The application will prompt the officer to gather specific data for selected species that the officer is examining. The input gathered by the officer will then be processed to determine if the vessel and/or captain complies with relevant regulations or not. Encounter reports can then be uploaded by the officer when the device is in range to connect to the internet.

To supplement the mobile application, a Windows 10-compatible administration application will be created to allow administrators to define data to be gathered for different species and to create rules for the processing of responses. The application will allow the definition of statutes or regulations that can be linked to potential responses. These regulations would then be displayed to officers when processing encounters based on the jurisdiction, trip type and species being examined. The administration application would upload encounter interview rules and regulations to SAFIS, where they would subsequently be downloaded by the mobile application for processing later when not connected to the internet. Currently, rules and regulations are updated on a continual basis by Enforcement Officers from the Coast Guards Regional Fisheries Training School. It is expected that these officers will continue to update regulations through the Windows administration application. The data collected will be the same data collected presently during a vessel boarding such as, but not limited to, name and date of birth of the Captain, permit numbers and all vessel information and violation information.

Geographic Location:

It is expected that most work would take place in Rhode Island and Georgia, along with adjacent state waters fished by Rhode Island and Georgia Captains. Utilizing State marine enforcement officers, along with US Coast Guard marine enforcement, the potential geographic location and scope of this project would cover most of the East Coast waters.

Table 1. Milestone Schedule (start date dependent upon time of grant award)

Month	1	2	3	4	5	6	7	8	9	10	11	12
Task												
Complete requirements gathering	X	X										
API Development		X	X	X	X							
Application enhancements and development			X	X	X	X	X					
Field testing of application					X	X	X	X	X	X	X	X
Software application modification based on end user feedback						X	X	X	X	X	X	X
Report writing						X						X

Project Goals and Metrics:

1. To mirror the existing Job Aid manual and understand the needs of the officers in the field. Officers will give direction to make sure the application is user friendly and contains what they need in the field.
2. To be able to document a vessel boarding to include audio/visual files of the incident. The app should be able to capture at minimum, vessel location, audio/video recordings, violations and officers case notes.
3. Confirm accurate data transmission to the ACCSP via an Application interface (API). The ACCSP will confirm the data is being received and stored in SAFIS.
4. Side by side sea trials of vessel boardings, utilizing current method of paper manual lookup, contrasted with the smart phone application. Documentation of the ease of use and accuracy will be documented in the field.

Table 2. Cost Summary

Description	Calculation	ACCSP Request	Partner-in-Kind
Personnel (a)			\$20,203
RIDEM LEO	12.5% of LEO staff time		\$11,765
GA DNR LEO	12.5% of LEO staff time		\$8,438

Contractual (b)			\$59,875
Contract Software Development	280 hrs@ \$175/hr	\$49,000	
Contractor Testing and Onsite Support/Training/Outreach. (Includes travel costs)	75 hrs @\$145/hr	\$10,875	
	Total Direct Charges	\$59,875	
	Total for Project	\$80,078	

Cost Details:

- a. **Personnel (\$0 Requested; \$10,875 Match)** RI DEM will use a small portion of co-PI, Jeff Mercer's salary as match for this application. Jeff Mercer is an officer for RI DEM, Office of Marine Fisheries. He will be working with the software architect and project manager to provide input and testing of the application throughout the project. In kind funding is derived from the calculation of 5 hrs per week at a rate of \$45.25 per hour, or 12.5% of J. Mercer's full-time salary that will be spent in support of the project.

GA DNR will use a small portion of co-PI, Sgt. Cindy Miller's salary as match for this application. Sgt. Miller is a Sergeant with the GA DNR, Office of Marine Fisheries. She will be working with the software architect and project manager to make certain the Job Aid manual she has put together is properly reflected by the application. She will also be closely involved in testing the application. In kind funding is derived from the calculation of 5 hours per week at a rate of \$36.36 per hour, or 12.5% of Sgt. Miller's full time salary that will be spent in support of the project.

- b. **Contractor Personnel-**

Harbor Light Software Inc. has an existing working relationship with ACCSP staff members and the Fisheries Enforcement Compliance application. Using Harbor Light will reduce startup and training time associated with the project, allowing more effort to be focused on the development of the requested software and support of the product rollout.

Software Development - 280 total development hours will be required to create the applications to meet the needs of the project.

Contractor Testing and Onsite Support/Training and Outreach.- A total of 75 hrs of testing and outreach will be required along with a minimum of three onsite visits to each location, Rhode Island and Georgia. Travel costs are included in this figure.

Figure 1

Fisheries Enforcement

Vessel Permit # SERO

Operator Permit # Operator Permit

State Registration # State Registration

Coast Guard # Coast Guard

SUBMIT

NAME: ROBERT OLSEN
LICENSE: 8530 (NMFS-SER)
BOAT: YABBA DABBA DOO (991636)
LAST POSITIVE: 2016-09-08 19:32
LAST NEGATIVE:

NAME: DEIDRA JEFFCOAT
LICENSE: 1403 (NMFS-SER)
BOAT: YABBA DABBA DOO (991636)

COMMUNITY ABOUT LOGOUT

The Fisheries Enforcement application currently queries SAFIS about the last positive/negative trip report submitted and displays this information to the officer.

Summary of Proposal for Ranking Purposes

Proposal Type: *New Project*

Primary Program Priority:

Catch and Effort: This project will collect data of fishing compliance for catch and effort activities for recreational, for-hire and commercial trips using an ACCSP approved application. Additionally, data on catch activities and compliance of fisheries management plans via vessel boardings will give the ACCSP data not previously supplied to SAFIS.

Data Delivery Plan: See data delivery plan on page 6.

Project Quality Factors:

Multi-Partner/Regional impacts including broad applications:

This project is building off a previously funded multi-partner/regional project which developed the Fisheries Enforcement Compliance tool for the southeast states. This proposal would further this mobile application and has the potential to be used region wide for both state and federal ACCSP partners.

Contains funding transition plan/defined end-point:

This is a one-year project with a defined end goal. The goal is to develop an application that could be utilized by any ACCSP state or federal partner.

In-kind contribution:

RIDFW and GADNR Law Enforcement will provide 25% in-kind funding derived from 12.5% of the law enforcement officers time to implement, evaluate and report the results of the project.

Improvement in data quality/quantity and timeliness:

Bringing this type of technology to the officer in the field will provide data on catch and effort compliance activities not currently provided to the ACCSP. These data will be helpful in determining catch compliance rates under any FMP.

Other Factors:

If successful, the technology utilized in this project could be easily expanded to enhance the safety and job functions of marine law enforcement officers, both state and federal, along the east coast.

Innovative:

Providing marine law enforcement officers with technology in the field will greatly enhance their ability to do their job safely and effectively. Funding for paper manuals would no longer be required and officers would be able to have accurate state and federal fisheries regulatory information quickly in the field. Capturing information on vessel contacts and housing this information in one system would benefit all partners.



Mike Cahall, Director
Atlantic Coastal Cooperative Statistics Program
1050 N. Highland Street, Suite 200 A-N
Arlington, VA 22204

August 13, 2018

Dear Mr. Cahall,

The Massachusetts Division of Marine Fisheries and the Rhode Island Division of Marine Fisheries, through partnership with Harborlight software, are pleased to submit the revised proposal titled “*Integration of vessel monitoring systems and electronic reporting in SAFIS and SAFIS applications through API development and field testing of multiple hardware options*” for your review. We believe this proposal is an important step forward for integration of various vessel-based data streams with each other and into the SAFIS databases and applications.

Please address questions jointly to John Lake of the Rhode Island Division of Marine Fisheries and Anna Webb of the Massachusetts Division of Marine Fisheries.

Sincerely,

Anna Webb
Environmental Analyst
MA Division of Marine Fisheries
30 Emerson Ave
Gloucester, MA 01930
anna.webb@state.ma.us
(978) 282-0308 x115

John Lake
Principal Biologist
RI Division of Marine Fisheries
3 Fort Wetherill Dr
Jamestown, RI 02835
john.lake@dem.ri.gov
(401) 423-1942

Enclosures:

ACCSP Proposal: “*Integration of vessel monitoring systems and electronic reporting in SAFIS and SAFIS applications through API development and field testing of multiple hardware options*”

Appendix A: Principal Investigators’ Curricula Vitae

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

**Integration of vessel monitoring systems and electronic reporting in SAFIS
and SAFIS applications through API development and field testing of
multiple hardware options**

Submitted by:

Anna Webb
Massachusetts Division of Marine Fisheries
30 Emerson Avenue
Gloucester, MA 01930

John Lake
Rhode Island Division of Marine Fisheries
3 Fort Wetherill Drive
Jamestown, RI 02835

Applicant Name: Massachusetts Division of Marine Fisheries and Rhode Island
Division of Marine Fisheries

Project Title: Integration of vessel monitoring systems and electronic reporting
in SAFIS and SAFIS applications through API development and
field testing of multiple hardware options

Project Type: New Project

Principal Investigators: Anna Webb (MADMF), John Lake (RIDMF)

Requested Award Amount: \$181,367

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

Date Submitted: June 11, 2018

Objective:

To develop an API-based integration of geographical vessel-monitoring data with real-time electronically reported data in the eTRIPS mobile application for small scale inshore fisheries.

Within the scope of the project, the following additional deliverables will be met:

- Consolidate partners' general needs and identify baseline requirements
- Produce a comparative cost analysis of various VMS devices
- Evaluate functionality of various VMS devices and application on industry vessels with data generated on actual fishing trips
- Investigate capability of hail in/hail out features and geofencing
- Review, as necessary, approval procedures for federal VMS products in light of new inshore options

Need:

Satellite-based vessel-monitoring-systems (VMS) have been deployed for years on federally-permitted vessels and utilized by NOAA Fisheries and NOAA Office of Law Enforcement (OLE) successfully. These systems allow OLE to monitor and receive messages about vessels' positions, but also allow for the vessel captains to be notified when approaching defined boundaries. Most ACCSP state partners have not yet implemented this technology, due to high costs and logistics. New cellular-based VMS technology has emerged that is less expensive to use and can be accessed via mobile devices providing opportunity for partners with limited resources. State managers and law enforcement are eager to explore the utility of this technology to allow for more flexible management programs in various fisheries accompanied with more robust accountability. Positional data generated from VMS devices linked with trip-level data is needed to accomplish the rigorous monitoring associated with these types of management programs especially where the current level of reported location data is insufficient.

As mentioned above NOAA Fisheries has been using satellite VMS technology for many years, and any data generated by the cellular VMS systems would have to be integrated with the existing data streams already in place on federal vessels. This identifies a need for a standard process and repository for the combined positional and catch and effort trip-level data reported by the vessels. This project represents the first step necessary to begin using both new and existing VMS technologies. There is a need to identify, capture, and transmit all of the data fields into a standardized format. This project will create an API capable of transmitting VMS data collected from both cellular and satellite sourced devices into eTRIPS applications and ultimately SAFIS. A variety of cellular and satellite-based VMS-like systems will be evaluated for compatibility with the API. The functionality of each type of unit will be monitored and assessed for ease of use, integration capability both in SAFIS and applications, and potential management benefits as well as any pitfalls.

Partners electing to use these VMS systems will need to know the costs associated with and utility of the implementation of the various options for management programs, as well as understand the economic impact on individual fishing practices. These types of management programs can be quite diverse and often are tailored to meet a specific need. For example in Rhode Island the VMS and trip data is desired to track trips associated with a weekly aggregate landing programming while in Massachusetts the VMS are desired for allowing fishing to take

place in environmentally sensitive habitats. Thus, hail in and hail out options as well as investigating geofencing options are all critical to application success. In addition to the functionality described above, this project proposes to evaluate the costs associated with a variety of options and provide them for reference.

Results and Benefits:

The storage and display of VMS data by SAFIS and SAFIS applications further moves towards ACCSP being the sole repository for fisheries-dependent data collection, which makes multi-jurisdiction management more streamlined and data more easily available and accessible. This project ultimately addresses the ACCSP's catch and effort priority by integrating and advancing data collection methods to include location tracking, which will support emerging management issues and improve the quality of data used to make decisions. The addition of geographic/positional fisheries-dependent data streams is a long-term goal of ACCSP and its partners and integral to SAFIS and SAFIS applications keeping current with new emerging technologies.

The timing of the project is ideal and fits into the redesign of SAFIS currently underway of which a major focus is integrating various reporting streams. This project initiates the integration of data feeds from a range of vessel-based data collection devices into a single application. eTRIPS mobile, which collects real-time catch and effort data, has been in production since 2015 and been successfully implemented within the SAFIS framework across several fisheries as well as both the commercial and party/charter sectors. The next logical step in this process is to integrate eTRIPS mobile with VMS data to create a more complete accounting the catch, effort, and location of a given fishing trip. This integrated data set submitted via the API proposed in this project shall provide a basic platform to query the data for these types of programs. A single repository for all vessel generated data is necessary to create the query platform for "real time" report generation. SAFIS is the ideal place for this type of data compilation as it encompasses both state and federal system and thus is usable among all partners. Additionally, by combining existing tools already in place, this project eliminates the need for fishermen to learn new reporting methods/technologies, buy less additional or new equipment, or enter duplicative data.

As mentioned in the objectives, testing will be done by partner agencies as well as by industry members on actual fishing trips. This model offers the ability to collect and monitor location data alongside catch and effort data in real fishing scenarios. The resulting collaboration will not only improve the end user (fishermen) experience by soliciting feedback about what works best at sea, but also promote buy in from industry via involvement in the process. Ultimately the results of this project should foster more flexible management strategies that benefit fishing practices by allowing fishermen to operate more effectively and efficiently. Upon success, the results from this effort would make VMS programs more accessible to all partners and location tracking management programs possible. This type of management strategy is particularly valuable for stock assessments that are spatially refined, such as those used for menhaden, black sea bass, tautog, and proposed for striped bass. This type of system will allow for easier adjustment of catch information in to discrete spatial units, thus precluding the need for some of the assumptions currently being used for these more progressive assessments. Additionally, the availability of this type of spatially defined catch and effort information could allow for other

population assessments to progress to more spatially refined structures, thus improving the stock assessment enterprise as a whole.

By utilizing the new technology on the market and initiating an avenue of integrated reporting, this project will open new methods for real-time data collection and utilization by all state partners. The resulting customizable baseline application is expected to be used in a variety of ways to address a variety of management issues. This project emphasizes partner collaboration and producing a product that can be used by any single partner, particularly for inshore fisheries. A cost analysis of tested VMS hardware and the resulting applications will be available for any partner interested in implementing a VMS program at the conclusion of the project to aid in regulatory decision making processes. If applicable, the results may also be able to be scaled up to include federal and offshore operations as the API would be available to additional vendors including the federally approved satellite vendors.

Moreover, a much needed future benefit of this collaboration would include the development of a law enforcement application to utilize the collected location data combined with “real time” catch and effort data elements. The ease of access offered by a comprehensive data querying application is necessary for law enforcement to meet the challenges of more flexible management strategies. Allowing industry more latitude in their fishing practices outside of existing management practices can only be accomplished by strict adherence to the rules. While the development of this application is not directly in this proposal, the data set created by the API developed in this project is the first step in the creation of a robust tool law enforcement can use to track compliance. The proposed analysis of such an application’s feasibility will be useful as further development occurs and the technology is implemented into future management strategies.

Data Delivery Plan:

Bluetooth would connect the VMS devices and eTRIPS mobile, and then an API would deliver the reporting and location data to SAFIS.

Approach:

Identifying the generalized baseline requirements for application use by any partner will be done through a partner survey. The expected result is that hail in/hail out notifications and geofencing options will be commonly requested components, and both are included elements of this proposal. Functions outside of this list will be noted for development after the pilot phase.

Under this proposal, eTRIPS mobile will be modified to communicate with multiple VMS devices. The software development process will explore the API’s offered by several selected VMS vendors for their devices and will integrate those API’s into eTRIPS mobile to provide, if possible for each device, the following capabilities:

- Commands to send Hail In and Hail Out messages
- Dynamic control over the frequency of recording geographic location and the transmission of location data by the VMS device
- Accessing location data from the VMS device for integrated reporting with Trip data to SAFIS.

- Communication of defined geofenced regions from eTRIPS to the VMS device for the device to use for location alerts.

Selection of a specific VMS device for support on a Trip in eTRIPS mobile will be performed by the user via configuration menu options within the eTRIPS mobile application.

The project will involve identification of several VMS devices for testing of the integrated features. Valid devices must have an API with which eTRIPS mobile can use to communicate with the device. The software development phase of the project will involve custom support in eTRIPS mobile for the API's offered by each of the supported devices.

The method and timing of communication between the eTRIPS mobile application and the VMS device may vary depending on the functionality of the VMS device API. The project will explore the effectiveness of the various API designs for achieving device control and reporting of data. For example, some devices may support real-time Bluetooth communications between eTRIPS and the VMS unit, while others may require on-shore communications when the eTRIPS tablet is connected to the internet either before or after a trip starts or completes.

In addition, it is planned that a Windows 10-compatible UWP application will be created to define geofenced regions. This application will be VMS device independent, and will generate region definitions. This application would manage region definitions and save them into SAFIS, which could then be downloaded by eTRIPS mobile and subsequently communicated to the VMS device. The device would then use the region definitions to perform region-dependent functions, such as sending alerts when a vessel enters a prohibited geographic area.

The devices and resulting application will be piloted in real fishing scenarios on board vessels from Rhode Island and Massachusetts. Participants will be selected from an array of fisheries which will allow the partners to identify benefits as well as issues that may develop differently in different industry sectors. The partners will work with the industry to identify individuals interested in participating in the project, ultimately selecting five state-waters fishermen from each state. During the pilot phase, each captain and vessel will test multiple VMS devices in order to investigate differences in performance within their respective fishery. Some will also simultaneously test the tracking capability of the tablet GPS function and a VMS device to evaluate accuracy. The pilot captains will be fully trained in eTRIPS mobile and VMS technology, and thus be able to provide feedback on both the device and application. This will create a feedback loop between the industry, managers, and the developers to improve the product in real-time.

Project participants will make every effort to incorporate piloting results from the ACCSP proposal entitled "Collaborative Electronic Tracking Pilot Program in the American Lobster Fishery" into this project to broaden the scope and testing base. Staff from RIDMF and MADMF have been in contact with the ASMFC Lobster staff and are discussing how to compare data and results generated by both projects. Since the VMS device testing phases of both proposals overlap, results will be compared and included in the final summary report.

The devices proposed to be tested are as follows:

- 1) SnapitHD, <http://www.snapithd.com/>
Offers Satellite and GPS tracking and additionally have onboard monitoring video cameras. Cameras are not a part of this proposal. The data collected with the solar powered VMS unit is saved internally and shifted to on-shore servers over a wireless connection, saving costs.
- 2) Faria Beede, <https://fariabeede.com>
Sentry module (WD300) is a compact, ruggedized, web-based GPS/Cellular Boat Tracking and Monitoring System utilizing 2G/3G cellular coverage.
- 3) Pelagic Data Systems, <http://www.pelagicdata.com>
These VMS systems use cellular networks with onboard data storage. A cloud based analytics platform provides information of the vessels movements. These units are small enough to be suited for small vessels, including those without a power source. Due to the company's normal business practice of only selling units for bulk installs of over 50 units, they charged an additional fee for support of this project.
- 4) Skymate, https://www.skymate.com/user_groups/commercial_fishing.html
Skymate VMS systems are currently approved by NOAA and in use on commercial vessels. The units send automated position reports to NOAA and additionally have things such as weather, fish prices and sea surface temperatures. Note: We anticipate piloting this on a vessel that already has a Skymate VMS unit installed, thereby eliminating the equipment costs for the unit.
- 5) Tablet GPS function
This tracking will utilize the internal GPS of the tablet, either iOS or Android.

Finally, the requirements necessary for integrating the application with a law enforcement tool or report feature will be investigated and requirements gathered during the final phase of this project. Integration with the ACCSP FisheriesEnforcement application would be achieved by triggering communications from eTRIPS to the FisheriesEnforcement application for alerts of key events such as Hail-In, Hail-Out or the crossing of geofence region boundaries. Technical feasibility will be explored for the most effective communications mechanism between eTRIPS and the FisheriesEnforcement application, with potential candidates being application notifications or SMS messages. Alerts would either be delivered using standard internet protocols if the eTRIPS device is connected to the internet, or via the communications capabilities of the VMS device.

A final report will be compiled outlining each device's functionality both in general and within a given fishery, ability to interact with eTRIPS, costs both for management agencies and industry, and future needs. Additionally, an assessment of how this project's results may be compatible with parallel efforts at the federal level, as well as future benefits of the application including but not limited to a law enforcement component would be prepared.

Geographic Location: Inshore waters surrounding Massachusetts and Rhode Island

Milestone Schedule:

The milestone schedule is based on the starting month of the project as month “1.”

Task	Month												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Complete requirements gathering	X	X											
Acquire VMS devices to test	X	X											
Cost analysis	X	X	X	X	X	X							
API development	X	X	X	X	X	X							
Application enhancements to accommodate location data	X	X	X	X	X	X	X	X	X				
Field testing of device capabilities and application							X	X	X	X	X	X	
Software application modification based on end user feedback							X	X	X	X	X	X	
Federal VMS device comparison	X	X	X	X	X	X	X	X	X	X	X	X	
Report writing						X	X					X	X

Project Accomplishments Measurement:

Project Goal	Measure of Accomplishment
Identification of baseline requirements	Completion of a partner survey identifying potential interest in and utilization of VMS technology.
API development and testing	Successful transmission of linked catch and effort data and location data to SAFIS and between VMS devices and eTRIPS mobile.
Integration of VMS data into the eTRIPS mobile application	Industry-tested, user-friendly product incorporating location data into the reporting software and successful data storage in SAFIS/Data Warehouse tables.
Testing and evaluation of multiple VMS devices on industry vessels with data generated on actual fishing trips	Report identifying functionality, benefits, and problems associated with each device.
Test hail in/hail out and geofencing capabilities of each VMS device	Device can successfully show capability to do both, outputs from various VMS devices interpreted correctly and best method(s) for notification of start of trip or entry into special areas initiation determined.
Comparative cost analysis of VMS products	Report identifying costs of all tested VMS products and federal counterparts. This will be combined with the final evaluation report of the VMS products.
Review, as necessary, approval procedures for federal VMS products in light of new inshore options	Include in the report a comparison to existing marketed federal VMS options and note how the new products would fair in the federal approval process.

Cost Summary:

Description	Calculation	Funding Source				
		In-Kind		Requested from ACCSP Admin Costs		
		MADMF	RIDMF	MADMF	RIDMF	
Personnel (a)		\$4,381	\$3,092	\$4,381	\$5,916	\$0
Anna Webb (Env Analyst, MADMF)	12.5% of time @ 5 hrs/wk	\$4,381		\$4,381		
John Lake (Principal Biologist, RIDMF)	10% of time @ 3.5 hrs/wk				\$5,916	
Support: Jason McNamee (Chief, RIDMF)	3% of time @ ~1 hr/wk		\$3,092			
Fringe (b)		\$1,627	\$1,722	\$1,627	\$2,763	\$0
35.41% MA Fringe rate	Applied to A. Webb's salary	\$1,551		\$1,551		
1.73% MA Payroll rate	Applied to A. Webb's salary	\$76		\$76		
46.70% RI Fringe rate	Applied to J. Lake's salary				\$2,763	
46.70% RI Fringe rate	Applied to J. McNamee's salary		\$1,722			
Supplies (all divided evenly amongst partners) (c)		\$350	\$0	\$8,025	\$8,375	\$0
Tablets (12 total)	(6) Android 8" to 10" form factor @ \$250 each (6) iPads w. 4G LTE Cellular @ \$650 each			\$750 \$1,950	\$750 \$1,950	
Ruggedized Tablet Covers	(10) Ruggedized Covers @ \$55 each			\$275	\$275	
SnapitHD VMS units	(6) SolarVMS @ \$1,300 each			\$3,900	\$3,900	
Faria Beede Model WD300	(6) Cellular Near Shore Tracking System \$350 each	\$350		\$700	\$1,050	
Pelagic Data Systems	(6) Solar VMS Tracking System @\$150 each			\$450	\$450	
Contractual (d)		\$0	\$0	\$0	\$0	\$130,875
Harborlight Software	Contract software development: 685 hrs @ 175/hr 75 hrs @ \$145/hr: contractor testing, onsite support, training and outreach including travel costs					\$120,000
Software Support: Harborlight						\$10,875

Description	Calculation	Funding Source				
		In-Kind		Requested from ACCSP		
		MADMF	RIDMF	MADMF	RIDMF	Admin Costs
Other (all divided evenly amongst partners) (e)		\$0	\$0	\$8,420	\$8,420	\$0
Snapit HD 12 month data cost	(6) 12 month data estimated cost @ \$35/month			\$1,260	\$1,260	
Faria Beede 12 month data contract	(6) 12 month data cost @ \$25/month			\$900	\$900	
Pelagic Data Systems 12 month data cost	(6) 12 month data cost @ \$35/month			\$1,260	\$1,260	
Pelagic Data Systems Engineering Support	12 months support and engineering cost due to small scale deployment @ flat fee of \$10,000			\$5,000	\$5,000	
Total Direct Charges		\$6,358	\$4,814	\$22,453	\$25,474	\$130,875
Indirect Charges (f)		\$1,067	\$830	\$1,067	\$1,497	\$0
24.36% MA Indirect	Applied to A. Webb salary only	\$1,067		\$1,067		
17.25 % RI Indirect	Applied to J. Lake on salary + fringe				\$1,497	
17.25% RI Indirect	Applied to J. McNamee on salary + fringe		\$830			
Totals		\$7,425	\$5,644	\$23,520	\$26,971	\$130,875
Total Project Cost		\$194,436				
In-kind versus Direct Percent Contribution		7%		93%		

Cost Details:

- a. Personnel (\$10,297 Requested; \$7,473 Match)** MA DMF will use a small portion of co-PI Anna Webb's salary as match for this application. Her CV is attached. J. McNamee will provide in-kind support from RI. The remaining salary is requested from ACCSP.
- b. Fringe (\$4,390 Requested; \$3,349 Match)** MA DMF will provide matching funds to cover fringe and payroll expenses associated with A. Webb's match salary. MA DMF's fringe rate of 35.41% includes the costs for Group Insurance, Retirement, and Terminal Leave. MA DMF's payroll rate of 1.73% includes the costs of Unemployment Insurance, Employer Medical Assistance Contribution, and Medicare Tax. RI will provide matching funds to cover fringe for expenses associated with J. McNamee's match salary. All remaining fringe costs are requested from ACCSP.
- c. Equipment/Supplies (\$16,400 Requested; \$350 Match)** All equipment/supplies costs for devices is requested from ACCSP. MA can provide one Faria Beede device as in-kind.
- d. Contractual (\$130,875 Requested; \$0 Match)** Software development costs for Harbor Light Software, Inc. will be \$120,000. This covers enhancements to eTRIPS mobile to integrate with each of the supported VMS devices to provide Hail-In and Hail-Out commands, dynamically scheduled upload of data, retrieval of GPS data, and setting of geo-fenced regions. It additionally covers the development of a Windows application to define geo-fenced regions for storage in SAFIS, and for use by eTRIPS mobile. The additional support costs for the application and testing will be \$10,875.
- e. Other (\$16,840 Requested; \$0 Match)** The contract costs for the devices are requested from ACCSP. This includes the cost of transmitting the data at designated ping rates.
- f. Indirect Charges (\$2,564 Requested; \$1,898 Match)** MA DMF will provide matching funds to cover the indirect costs associated with A. Webb's match salary. MA DMF has a federally-negotiated indirect rate of 24.36%. RIDMF's indirect rate is 17.25% on salary plus fringe.

Summary of Proposal for Ranking Purposes

Proposal Type: *New Project*

Primary Program Priority:

Catch and Effort: This proposal focuses on the collection of positional data and integrating it with catch and effort data already collected through SAFIS applications.

Data Delivery Plan: See outline on page 5.

Project Quality Factors:

Multi-Partner/Regional impact including broad applications:

This is a joint project between two Northeast partners with a letter of support from a Southeast partner. The results will be directly applicable to any partner interested in developing a location monitoring program in inshore waters, and the cost analysis in the final report will aid further management decisions both by the principal investigator's agencies and any interested partner.

Contains funding transition plan/defined end-point:

This is a one-year project with a defined end goal. The goal is to identify the benefits and problems with each tested device and provide a tool for moving location-based management objectives forward.

In-kind contribution:

Please see the costs table on page 9.

Improvement in data quality/quantity/timeliness:

Integrating positional data into catch and effort reporting is a step towards fully integrating catch statistic data collection. By integrating with eTRIPS mobile, this encourages more real-time data collection and improves the location data simultaneously.

Potential secondary module as a by-product:

Social and Economic: Integration of VMS and electronic reporting will help foster more progressive management strategies, which will help fishermen fish more efficiently while still making the programs enforceable. The ability to geofence specific areas will allow fishermen access to areas that were previously prohibited, thus allowing them greater opportunities for their fishing businesses. Additionally, the comparative analysis across different VMS units will allow fishermen to make informed decisions on the type of unit that best meets their business needs and supports the management objective.

Impact on stock assessment:

Positional data at the trip level would be valuable for stock assessments, allowing the nuances of catch location to be observed and utilized in spatially refined models while introducing possibilities for more refined spatial analyses where current statistical reporting area demarcations are not sufficient to identify and monitor fishing activity within a given region.

Appendix A: Curricula vitae for the principal investigators

John M Lake

13 Breton Drive
Charlestown, RI 02813
Phone: (401)377 2250
Email: john.lake@dem.ri.gov

Recent Experience

Principal Biologist, Rhode Island Division of Fish and Wildlife July 2009 – Present, Jamestown, RI

In my current position I am a biologist for the Rhode Island Division of Fish and Wildlife. I serve as the fisheries management plan coordinator for winter flounder and Atlantic herring. I am also responsible for coordination and implementation of the NOAA Fisheries Marine Recreational Information Program (MRIP) program to collect recreational fishing data in the state. Part of this process involved the initial planning and implementation of a saltwater recreational fishing license for the state of Rhode Island. I coordinated stakeholder meetings, government contracts, website development, advertisement campaigns, legislative reports, and vendor sales. I am on a team coordinating the creation of a combination recreational hunting/fishing license. I conduct an annual juvenile finfish survey in Rhode Island's coastal ponds. I represent Rhode Island on two interagency fisheries management committees. I run several smaller projects from small grants I have written including; shellfish conversion factor project, recreational license vendor incentive program, and piloting use of handheld data collection devices for use in Party and Charter fishing fleet. I maintain several MS Access databases and update content on the RIDFW webpage.

Fisheries Specialist 2, Atlantic States Marine Fisheries Commission February 2002 – July 2009, Jamestown, RI

This position was a contract to the Rhode Island Department of Environmental Management. I was the Rhode Island coordinator for the Atlantic Coastal Cooperative Statistics Program (ACCSP). My full time duties included grant writing, project development, as well as design and management of three commercial fisheries data collection programs. I represented Rhode Island on five interagency fisheries management committees, including the ACCSP Operations committee. From 2003 to 2009, I wrote annual grant proposals that were awarded \$150,000 per year. I helped design the Standard Atlantic Fisheries Information System (SAFIS) and successfully put it into operation at seafood dealers throughout Rhode Island. I designed and maintained the databases that collect Rhode Island commercial fishery statistics. I was responsible for supervising up to three employees at a time. Finally, excellent communication skills were required for this position, to routinely facilitate coordination between the public, state, and federal agencies on a suite of data management projects.

Biological Technician, End to End Inc.
March 2001 – January 2002, South Kingstown, RI

This position was a contract to the Rhode Island Department of Environmental Management. My duties included collecting fisheries dependent statistics from both the catch and discards of fish caught onboard commercial vessels in Rhode Island. I calculated aging statistics for commercially important finfish. I data entered commercial lobster catch logbooks. I was responsible for annual report writing, and setting up purchase orders for supply requisition. I would also frequently assist other field projects carried out on small vessels within Narragansett Bay, Rhode Island.

Education

University of Connecticut, Storrs, CT
Master's of Science, Biological Oceanography, March 1997

Relevant Coursework: Biological Oceanography, Marine Biogeochemistry, Physical Oceanography, Geological Oceanography, Applied Statistics 1-2, Principles of Fisheries Management, Zooplankton Ecology

Thesis Research: Diet Selectivity of Scup, (*Stenotomus chrysops*), in Long Island Sound. Graduate level research involving experimental design, field work, laboratory work, and statistical analysis. Patterns of Scup diet were determined relative to ontogenetic development, Western Long Island Sound hypoxia, and external morphology.

College of the Holy Cross, Worcester, MA
Bachelor of Arts, Biology, May 1991

Relevant Coursework: Cell Biology, Genetics, Biochemistry 1-2, Immunology, Animal Physiology, Marine Biology/Ecology 1-2, Organic Chemistry 1-2, General Chemistry 1-2, Introduction to Biology, Physics 1-2, Invertebrate Zoology, Botany, Calculus 1-2, Methods of Teaching.

Job Related Certifications:

SQL Programming April 30, 2008
At Sea Safety Training, June 2007
Power Squadron Safe Boating and Navigation June 1999

Additional Skills:

I possess exceptional computer skills and am competent in a wide variety of software packages. These packages include MS Access, MS Excel, MS Word, Oracle Discoverer Plus, and SQL Developer. I can program in Visual Basic and SQL. I also maintain a current state of New Hampshire safe boating certificate.

Anna R. Webb

30 Emerson Ave · Gloucester, MA 01930
anna.webb@state.ma.us · (978) 282-0308 x115

EDUCATION:

Continuing Education:

Intro to Computer Programming, University of Massachusetts, Lowell; Fall 2016
Relational Database Concepts, University of Massachusetts, Lowell; Spring 2015
SQL Programming, Hands-On Technology Transfer, Inc.; Fall 2014

Graduate Education:

Master's of Science Degree, Marine and Atmospheric Science, *Focus: Fisheries*, School of Marine and Atmospheric Sciences, Stony Brook University, August 2011
Thesis title: *Understudied Species in Coastal U.S. Waters: Issues, Solutions, and Implications for Ecosystem-Based Fishery Management*

Undergraduate Education:

Bachelor of Science Degree, Marine Vertebrate Biology, Stony Brook University, May, 2007

WORK EXPERIENCE:

Environmental Analyst, Massachusetts Division of Marine Fisheries, Gloucester, MA
November, 2015 - Present

Ongoing Responsibilities:

- Project leader for Division's Fisheries Statistics Project. Project is a five person team responsible for collecting, entering, and managing catch and effort data from commercial fishermen and landings data from seafood dealers in Massachusetts. Job duties also include managing ongoing federal grants as the principal investigator.
- Specifically oversee the harvester data collection, entry, quality control, and compliance for Massachusetts and provide outreach and technical support to harvesters submitting reports electronically through SAFIS or via paper.
- Provide support and oversight for dealer data collection, entry, quality control, and compliance, data requests from internal personnel, other partner agencies, and the public, and quota monitoring of various species.
- Lead point of contact for all swipe card technology and Atlantic Coastal Cooperative Statistics Program (ACCSP) related matters.
- Member of the Commercial Technical Committee, Past Chair of the Information Systems Committee, and Chair of the SAFIS Outreach Committee at the ACCSP.

Program Coordinator, Massachusetts Division of Marine Fisheries, Gloucester, MA
April, 2014 – November, 2015

- Oversee the harvester data collection, entry, quality control, and compliance for Massachusetts
- Provide outreach and technical support to harvesters and dealers submitting reports electronically through SAFIS or via paper.
- Instituted the online video tutorial series for harvesters using SAFIS and a newsletter focusing on electronic reporting for dealers and harvesters.

- Participate in the swipe card dealer application project with ACCSP and Maine Department of Marine Resources.
- Member of the Commercial Technical Committee, Vice Chair of the Information Systems Committee, and Chair of the SAFIS Outreach Committee at ACCSP.

ACCSP Fishery Specialist (Coordinator), Rhode Island Division of Fish and Wildlife-Marine Fisheries Section, Jamestown, RI

April, 2012 – April, 2014

- Oversee SAFIS data entry and compliance by dealers, harvesters, and staff.
- Provide daily technical support to dealers and fishermen.
- Participate on the quota monitoring team to make decisions regarding seasonal closures and possession limit changes for summer flounder, black sea bass, tautog, bluefish, striped bass, scup, menhaden, and monkfish.
- Manage the research-set-aside program in Rhode Island.
- Write and submit progress and final reports for ACCSP grants.
- Provide data to staff and external users while monitoring confidentiality issues.
- Member of the Commercial Technical Committee, Vice Chair of the Information Systems Committee at ACCSP, Chair of the Data Warehouse Outreach Committee.

Seasonal Field Technician, New York State Department of Environmental Conservation, East Setauket, NY

June, 2011 – April, 2012

- Conduct seining surveys of juvenile striped bass in Western Long Island bays.
- Assisted with the monitoring of 35 fish pots in a Long Island Sound fishery-independent survey of tautog and a trawl survey of Peconic Bay, NY targeting juvenile finfish species.
- Participated in onboard sampling and measurement of recreational charter boat catch including local species such as summer flounder, black sea bass, and scup.
- Monitor and collect commercial striped bass fishery samples from local fish markets
- Press and age striped bass scales.
- Data entry: Cooperative Angler Program; Vessel trip reports into SAFIS.

Research Technician, Stony Brook University, Stony Brook, NY

March, 2007 – September, 2008

- Participated in hard clam restoration project in conjunction with The Nature Conservancy by analyzing gonad and general body condition of both sanctuary and native clams
- Collected and filtered seawater for chlorophyll and POC/PON content analysis
- Analyzed sediment cores for both POC/PON analysis and enumeration of benthic organisms
- Prepared all materials for both field sampling and laboratory testing

SPECIAL SKILLS:

- Relational database management including MS Access and Oracle based databases
- Data mining large datasets for repeating errors
- Proficient in SQL and Microsoft Office Suite, expert in Microsoft Excel
- Experience with R, GIS, HTML, Visual Basic



Atlantic Coastal Cooperative Statistics Program

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June 8, 2018

To the members of the Operations and Advisory Committees:

The FY2019 Administrative Budget contains two significant changes. First, the ASMFC has reduced its overhead rate from 24% to 15%. Second, the budget includes additional funding for contract support, primarily for the Help Desk authorized in 2016.

Transitions to electronic reporting in the for-hire and commercial sectors, the first of which went into effect on March 1, 2019, will continue to increase the volume of data coming in to SAFIS. Consequently, the Program is experiencing an increase in support calls as new users are onboarded and technical problems are discovered and resolved. Additional funding for the Help Desk will help the Program accommodate these support calls.

Thanks to the reduction in the ASMFC overhead rate, the dollar amount requested has decreased slightly.

Attachment I of the FY2019 Administrative Budget request, the FY19 Action Plan, provides an overview of the high level tasks and milestones expected for the coming year.

Sincerely,

Michael S Cahall,

Director, ACCSP

Funding Proposal
FY19 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: \$1,816,503

Request Type: Maintenance/Administrative

Requested Award Period: March 1, 2019 through February 28, 2020

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 managers, 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; and,
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 change.

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:

- 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 FY19 Action Plan (Attachment I) details activities to be conducted by ACCSP staff and committees under the FY19 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 Manager provides assistance to the Director, coordinates Program activities, produces outreach materials, and provides staff support for program and technical committees by drafting, maintaining, and coordinating program documents. 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 services and system support required to develop and fine-tune the data management systems, assist users as they access the system, and provide quality management and control. The Data Coordinators also directly participate in data intensive activities such as stock assessment data workshops as needed. The Information System staff provides expert consultations to partners as they implement new reporting and licensing/permitting systems. They also continue to support development of SAFIS.

ACCSP staff will follow the FY19 Action Plan during FY19, 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 SE SEFHIER project) 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 FY19 Action Plan (Attachment I)

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 1999-2018

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
2017	\$1,855,113	9.5
2018	\$1,854,249	9.5

3. Cost Summary: The ACCSP requests \$1,579,568 for administrative support, committee travel and systems operations during FY19. The addition of the 15% overhead rate raises the request to \$1,816,503.

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. Note that the vacant Data Coordinator is a new position required due to the increasing volume of data being managed by the Program.

- ACCSP Director - Michael S. Cahall
- Program Manager – Alexandra Schwaab
- Information Systems Manager – Edward Martino
- Software Team Leader - Karen Holmes
- Senior Fisheries Programmer – Nicolas Mwai
- Data Team Leader – Julie Simpson

- Information Systems Specialist - Jennifer Ni
- Senior Data Coordinator – Joseph Myers
- Data Coordinator – Heather Konell
- Data Coordinator – Michael Rinaldi

Salaries and Wages	
Total Salary	\$ 954,346
Benefits @27%	\$ 252,621
Total Costs	\$ 1,188,254

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	1	1	14	\$3,640	1	\$200	\$3,840
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				\$50,830		\$4,300	\$55,130
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 Support	10	1	4	\$10,400			
Total Staff Travel				\$21,320			
Grand Total							\$76,450

Attachment II 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	
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Misc Hardware (cables, network hubs etc)	4,651
Backup Tapes	\$2000
Total	\$6,651

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.

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	
Infrastructure Replacements (servers, UPS systems, etc.)	\$12,000
Desktop/Laptop Systems	\$5,000
Total	\$17,000

8. Other Costs

Hardware and software support are supplied by a number of different vendors and include costs associated with licensing and maintenance fees (such as *Oracle* licensing).

The Program maintains three high speed internet connections and associated infrastructure in support of the server systems. The first is the primary internet connection used by 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. The third connection, using an entirely different technology and provider, provides redundancy to the primary connection in case of failure. The system is configured to automatically fail over in the event of a failure of the primary internet connection.

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 for 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 though SAFIS. In addition, recent management actions mandate electronic reporting for the for-hire sector. 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, the majority of trips will be reported to the SAFIS system regardless of the tool selected.

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 continues to contract for help desk support for SAFIS 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	2018
Software Support	\$60,000
Hardware Support	\$7,500
Communications	\$27,500
Printing (outreach)	\$2,500
Contract Services	\$175,000
Total	\$272,500

Budget Summary

Budget Summary	
Personnel	\$954,346
Fringe Benefits	\$252,621
Travel	\$72,800
Equipment	\$17,000
Supplies	\$6,651
Other	\$272,500
Total Program	\$1,575,918
ASMFC Overhead	\$236,388
Sub Total	\$1,812,305



Atlantic Coastal Cooperative Statistics Program

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FY19 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 FY2019 (March 1, 2019 – February 28, 2020). References within this plan are to the ACCSP 2014-2018 Strategic Plan

Please note that some of the tasks to be accomplished during FY19 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).

2019 Planned Program Activities: Summary

Planned activities for Fiscal Year 2019 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

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on the Atlantic coast through the cooperation of all program partners.*

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 will work with the appropriate partner staff to 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 federal for-hire fisheries.

A SAFIS redevelopment process will provide functional requirements for an integrated reporting system based on the previous planning. A redevelopment roadmap will be drafted based on these functional requirements and software development will begin.

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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 website will continue to serve as a primary point for providing information to the general public and casual user.

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.

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 and 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

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- 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 2018 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

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- **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
 - Both online and mobile
 - eTRIPS
 - Both online and mobile
 - eLogbook
 - e1-Ticket
 - SMS
 - HMS
- Continue development of integrated reporting
- **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



FY18 Program Calendar

This fiscal year 2018 calendar provides dates and locations for both ACCSP committee meetings (in teal) and additional meetings or conferences (in black) that may be of interest to our partners. ACCSP's funding cycle milestones are highlighted in red. 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.

Date	Meeting
Jan 30 - Feb 1	NEFMC Meeting - Portsmouth, NH
Feb 6 - 8	ASMFC Winter Meeting - Arlington, VA
Feb 7 - 8	APAIS South Atlantic Field Training- Wilmington, NC
Feb 13 - 15	MAFMC Meeting - Raleigh, NC
Wk of Feb 19	Biological Review Panel Webinar
Wk of Feb 19	Bycatch Prioritization Committee Webinar
Feb 21 - 22	APAIS Mid-Atlantic Field Training - Little Creek, DE
Mar 1	Start of ACCSP FY18
Mar 5 - 9	SAFMC Meeting - Jekyll Island, GA
Wk of Mar 12	Commercial Technical Committee Webinar
Wk of Mar 12	Information Systems Committee Webinar
Mar 14 - 15	APAIS New England Field Training- New Bedford, MA
Wk of Mar 26	Operations Committee and Advisory Committee Webinar (10 am)
Wk of Apr 2	Recreational Technical Committee Webinar
Apr 10 - 12	MAFMC Meeting - Montauk, NY
Apr 17 - 19	NEFMC Meeting - Mystic, CT
Apr 30 - May 3	ASMFC Meetings/ACCSP Coordinating Council Meeting- Arlington, VA; ACCSP issues request for proposals
Jun 5 - 7	MAFMC Meeting - Philadelphia, PA
Jun 11	Initial proposals due

Jun 11 - 15	SAFMC Meeting - Fort Lauderdale, FL
Jun 12 - 14	NEFMC Meeting - Portland, ME
Jun 18	Initial proposals are distributed to Operations and Advisory Committees
Wk of Jul 9	Review of initial proposals for Operations and Advisory Committees Webinar (10 am)
Wk of Jul 23	Feedback submitted to principal investigators
Aug 7 - 9	ASFMC Meeting/ACCSP Coordinating Council Meeting - Arlington, VA
Aug 13	Revised proposals due
Aug 14 - 16	MAFMC Meeting - Virginia Beach, VA
Aug 20	Revised proposals distributed to Operations and Advisory Committees
Wk of Aug 27	Preliminary ranking exercise for new Advisors and Operations Members
Sep 17 - 21	SAFMC Meeting - Charleston, SC
Sep 24 - 25	Annual Advisors and Operations Committee Joint Meeting (in-person; location TBD)
Sep 25 - 27	NEFMC Meeting - Plymouth, MA
Oct 2 - 4	MAFMC Meeting - Cape May, NJ
Oct 21 - 25	ASMFC Annual Meeting/ACCSP Coordinating Council Meeting - New York, NY
Dec 3 - 7	SAFMC Meeting - Kitty Hawk, NC
Dec 4 - 6	NEFMC Meeting - Newport, RI
Dec 11 - 13	MAFMC Meeting - Annapolis, MD

RESUME

Michael Sheldon Cahall
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Lexington Park, MD 20653

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, Leonardtown, 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)