

Atlantic States Marine Fisheries Commission

Atlantic Coastal Cooperative Statistics Program Coordinating Council

October 22, 2020

8:30 am - 9:45 am

Web Conference

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
 - Approval of Agenda
 - Approval of Minutes from August 2020
- 3) Public Comment
- 4) Elect Chair and Vice-Chair (*L. Fegley*) **Action**
- 5) Consider Recommendations for FY2021 Submitted Proposals (*J. Simpson*) **Action**
- 6) Committee and Program Updates (*J. Simpson, G. White*)
- 7) Other Business/Adjourn

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

**Via Webinar
August 3, 2020**

These minutes are draft and subject to approval by the
Atlantic Coastal Cooperative Statistics Program Coordinating Council.
The Council will review the minutes during its next meeting

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2. **Approval of Proceedings from May 5, 2020** by consent (Page 1)
3. **Move to adjourn** by consent (Page 16)

ATTENDANCE

Council Members

Bob Beal, ASMFC	Pat Geer, VA
Pat Keliher, MA	Lewis Gillingham, VA, proxy
Megan Ware, MA, proxy	Dee Lupton, NC, proxy for S. Murphey
Cheri Patterson, NH	Mel Bell, SC, proxy for P. Maier
Dan McKiernan, MA	Doug Haymans, GA
Jason McNamee, RI	Kathy Knowlton, GA, proxy
Justin Davis, CT	Gordon Colvin, NOAA, proxy for D. Detlor
Matt Gates, CT, proxy	Derek Orner, NOAA
Maureen Davidson, NY, proxy for J. Gilmore	Alan Lowther, NOAA
Joe Cimino, NJ (AA)	Marty Gary, PRFC
Kris Kuhn, PA	John Carmichael, SAFMC, Vice-Chair
John Clark, DE	Mike Millard, USFWS, proxy for S. White
Lynn Fegley, MD, Chair	

Staff

Geoff White	Karen Holmes	Marisa Powell
Julie Defilippi Simpson	Sarah Hylton	Mike Rinaldi
Bob Beal	Heather Konell	Kirby Rootes-Murdy
Toni Kerns	Ed Martino	Trevor Scheffel
Kristen Anstead	Sarah Murray	Mike Schmidtke
Max Appelman	Nico Mwai	Caitlin Starks
Lindsey Aubart	Joe Myers	Deke Tompkins
Alex DiJohnson	Jennifer Ni	

Guests

Karen Abrams, NOAA	Kyle Hoffman, SC DNR	Olivia Phillips, VMRC
Rep. Thad Altman, FL (LA)	Rusty Hudson, DSF	Kelly Place
Pat Augustine, Coram, NY	Desmond Kahn	Nicholas Popoff, ME DNR
Michael Auriemma	Raymond Kane, MA (GA)	Craig Pugh, DE
Thomas Balf	Adam Kenyon, VMRC	Story Reed, MA DMF
Chris Batsavage, NC DENR	Robert LaFrance, Quinnipiac	Eric Reid, RI
David Borden, RI (GA)	Phil Langley, PRFC	Tara Scott, NOAA
William Brantley	Carl LoBue, TNC	Alexei Sharov, MD DNR
Robert T Brown Sr, MD	Michael Luisi, MD DNR	Andy Sheils, PA F&B
Jeffrey Brust, NJ DEP	Chip Lynch, NOAA	David Sikorski, CCA
Heather Corbett, NJ DEP	Shanna Madsen, VMRC	David Stormer
Morgan Corey	Jerry Mannen, NC (GA)	Helen T. Heumacher, FL FWS
Warren Elliott, PA (LA)	John McMurray, NY	Craig Weedon, MD DNR
Andy Shiels, PA F&B	Steve Meyers	Catlyn Wells, SC DNR
Tom Fote, NJ (GA)	Mike Millard, US FWS	Chris Wright, NOAA
Angela Giuliano	Roy Miller, DE (GA)	Erik Zlokovitz, MD DNR
Shepherd Grimes	Ken Neill, Yorktown, VA	Renee Zobel, NH FGD

The Atlantic Coastal Cooperative Statistics Program Coordinating Council of the Atlantic States Marine Fisheries Commission convened via webinar; Monday, August 3, 2020, and was called to order at 10:29 a.m. by Chairwoman Lynn Fegley.

CALL TO ORDER

CHAIRWOMAN LYNN FEGLEY: It is 10:29, so I guess we might as well call to order the meeting of the Atlantic States Cooperative Statistics Program Coordinating Council. Welcome everybody.

ROLL CALL

We've got Director Geoff White on the Line, and Deputy Director Julie Defilippi Simpson. I wonder, Geoff, do we want to start by doing a quick roll call? Do you really want to do that? Is that even necessary?

MR. GEOFF WHITE: I think that it's best to go through that, I've asked Julie to prep for the roll call. I know we've done the sound check, but I'd like to quickly make sure that we've got everybody.

MS. JULIE DEFILIPPI SIMPSON: Lynn, I have you, and I'll keep right on going down. Bob Beal.

EXECUTIVE DIRECTOR ROBERT E. BEAL: I am here.

MS. SIMPSON: Excellent, John Carmichael. I haven't seen his name. Joe Cimino.

MR. JOE CIMINO: I'm here.

MS. SIMPSON: Good morning. John Clark.

MR. JOHN CLARK: I am here.

MS. SIMPSON: Matt Gates.

MATTHEW GATES: Good morning, Julie.

MS. SIMPSON: Good morning. Derek Orner.

MR. DEREK ORNER: Hey, good morning, Julie.

MS. SIMPSON: Good morning. Marty Gary. Lewis Gillingham.

MR. LEWIS GILLINGHAM: Here.

MS. SIMPSON: Good morning.

MR. LEWIS GILLINGHAM: Good morning!

MS. SIMPSON: Maureen Davidson, can you hear us?

MS. TONI KERNS: She's self-muted. She's on.

MS. SIMPSON: Okay, well I'll give her credit. Then I know we have Doug Haymans and Kathy Knowlton.

MS. KATHY KNOWLTON: Good morning!

MS. SIMPSON: Good morning! Megan Ware.

MS. MEGAN WARE: Just so you know I'm the one sitting for this.

MS. SIMPSON: Okay, thank you. Bryan King, Mel Bell.

MR. MEL BELL: Hi Julie.

MS. SIMPSON: Good morning. Jim Estes. Dan McKiernan.

MR. DAN MCKIERNAN: Here.

MS. SIMPSON: Good morning. Jason McNamee.

DR. JASON McNAMEE: Good morning, I'm here.

MS. SIMPSON: Good morning. Brandon Muffley, I believe he's not going to be able to make it. Dee Lupton. She might be a little late. I don't see her yet. Tom Nies. Cheri Patterson.

MS. CHERI PATTERSON: Good morning, Julie.

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MS. SIMPSON: Good morning. Kristopher Kuhn, I know is having some audio issues, so I'm going to give you credit, because I don't think you can tell us you're there. Sherry White.

MS. KERNS: I think it's Mike Millard talking, he was here earlier.

MS. SIMPSON: Mike Millard is there. Mike, are you out there? Well if that is our last one, I'm going to put Mike as a maybe, and we'll see if we can hear from him, or possibly he can chat us if he's there. Okay, Lynn that is all the list, unless I missed anybody.

MS. MAUREEN DAVIDSON: Hi, it's Maureen Davidson, sorry I kind of blinked out there for a second.

MS. SIMPSON: No, no worries. I've got you. Thank you, Ma'am.

MR. GORDON COLVIN: Julie, this is Gordon Colvin, I'm covering for David Detlor.

MS. SIMPSON: Oh excellent, thank you, Gordon.

CHAIRWOMAN FEGLEY: Thank you so much, Julie. It is really good to hear all your voices, and I really look forward to the time when we can do this again in person. That's going to be nice. We have a fairly easy agenda today, no action items. But hopefully some good points of discussion. I just wanted to start looking for some consent of the Council.

APPROVAL OF AGENDA

CHAIRWOMAN FEGLEY: The first one is does anybody have any issues with the agenda? If you would like to propose a change to this agenda, please raise your hand. I don't think we have any hands. That's good, we have consent to approve the agenda.

APPROVAL OF MINUTES

CHAIRWOMAN FEGLEY: Then, the final thing is to approve the meeting minutes from the May meeting.

If there is anybody who would like to make a change or edit to the February meeting minutes, please raise your hand. Okay, seeing none. We have Council consent for the agenda and the meeting minutes.

PUBLIC COMMENT

CHAIRWOMAN FEGLEY: The final order of business before we get started is public comment. Is there anybody in the public who would like to provide comment to the Coordinating Council? If you do, please raise your hand.

REVIEW AND DISCUSS ACCSP GOVERNANCE SURVEY RESULTS

CHAIRWOMAN FEGLEY: Okay, so seeing no public comment, we're going to go right on to Agenda Item Number 4, which is the results of the Governance Survey. I guess, Geoff, what I'll do is start, and let you do the intro, and then I'll go through the results of the Survey. Take it away, Geoff.

MR. WHITE: That is fantastic, thank you, Lynn. This is something that we all get to thank Bob for. He reminded me several months ago that one of the things identified in the governance transition was some follow up. Governance was worked on in 2014-15, actually 2016 was when the final motion was made, where ACCSP would become a program of the Atlantic States Marine Fisheries Commission.

One of the things in that initial transition document call for was to check back with the Coordinating Council on how the change in governance was working. Julie initiated the survey for us in March, and we then took a little bit of extra time beyond the May meeting to get more feedback from Council members.

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At this point we've got the results of that survey. Thank you to everyone who has been able to reply. When the survey went out, it included the actual transition document, as well as some opportunities for feedback from both the Coordinating Council, and the Operations Committee members. With that we asked Lynn to present the results to you guys, and generate some discussion on where we stand on governance, with the ACCSP as a program of the Commission. Take it away, Lynn.

CHAIRWOMAN FEGLEY: Thank you, Geoff, for the introduction, and really for crafting the survey. As Geoff said, in October 2015 there was the final motion to integrate ACCSP into the Commission, to really make that marriage final. The objectives of this survey, as Geoff said were to evaluate the impacts of the governance changes, to see if there are any additional adjustments warranted.

This does satisfy that action item in the transition document to report back to the Coordinating Council, as to whether ACCSP has been invigorated, and if there is renewed engagement from state directors, and if the program is advancing in its mission. The survey went out to members of the Coordinating Council, and the Operations Committee.

The response was pretty good, 14 members of the Coordinating Council responded, and 21 from the Operations Committee. You can see on this slide that there was a mix of ranges of experience of those who responded, so the largest number of respondents have been involved for five or more years, but there were respondents really all along the continuum of experience. That's good, it was a good cross section.

This is where we start to get into the specs of the results, and I just want to make it clear. I know that when the survey went out, Julie included with it the link to the governance transition document. These questions that were in the survey were listed in that document. They were

the thing that this merging of ACCSP and ASMFC would allow for.

The results are interesting. I think they are incredibly positive, and that for the most part people strongly agreed, or there was uncertainty as to whether the merger had accomplished these five things. I want to put on your radar though, when we get down to the conclusions that you start discussion.

I want to draw your attention to the first three, which are a more consistency provision of the ACCSP Director, consistent application of ASMFC policies for all staff, and the third one, which is the full incorporation of ACCSP activity into state and federal legislative outreach effort. The third one is the only one where some respondents strongly disagreed.

When we get down to the provision 5, I want to have a little deeper conversation about what people were thinking when they responded to this. Just put a place holder in your mind, we're going to get back to them. One of the major questions was, do you feel better informed, engaged, and invigorated.

You can see very clearly the majority of respondents said yes, somewhat. A couple felt very much so engaged. Then the rest was basically the same. It is worth noting that I think some of the respondents here, in the same department, probably were feeling, you know they've been engaged all along. The changing governance didn't really impact their level of engagement, because they had been very active in monitoring the activities of the ACCSP all along. This is a really good news slide as well. To the question, okay well when do you attribute your change or a lack thereof, do you feel more invigorated, do you feel more informed? Twenty of the respondents said that they attribute this change to integration of ACCSP with the Commission as a whole.

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There were also quite a few who responded that leadership was important in that, which is I think great news, and then there was a mix of other responses, which you see listed below, which have to do like I said with people who have been engaged all along, also folks who evolved into this have changed over time, where they have maybe taken on a more active role with ACCSP.

Also, SAFIS redesign surfaced in there, which is interesting. This question, we kind of had fun discussing, because this question was really aimed at trying to understand to some degree the level of communication happening between Coordinating Council members and Operations Committee members.

The question is, do you feel the Operations Committee/Coordinating Council members are better informed, engaged, and invigorated. Basically, the question is kind of asking, how did your counterpart feel, and as a result that question resulted in a high degree of uncertainty, 45 percent, were they didn't feel comfortable answering on behalf of the other.

Then again, this feeling of this idea that people are feeling better engaged is attributed both to the integration with ASMFC, and also to leadership changes. Okay, and here is probably the best slide of them all. The question was, do you agree that the ACCSP is advancing in its mission to produce dependable and timely marine fisheries statistics for Atlantic coast fisheries that are collected, processed and disseminated according to common standards agreed upon by all program partners.

All respondents either strongly agreed or agreed. There was no disagreement with that at all, and that is really good news. You know you would almost expect somebody somewhere to say, wait a minute, something is not quite working right. But I think here we see that according to this survey that ACCSP really is continuing to accomplish its mission. Wow!

Here it is, it's kind of a quick rehash. In general, the respondents agreed that the new governance structure has allowed for improved visibility among partners and stakeholders, and full integration of ACCSP with ASMFC Management and Science Program. Here is the one where, again I wanted to have a little more discussion.

The respondents agree, but have a higher level of uncertainty that the new governance structure has allowed for more consistent supervision of the ACCSP Director, consistent application of ASMFC policies for all staff, and full incorporation of ACCSP activities into state and federal legislative outreach effort.

Here I want to throw a couple of thought questions out to the Council for discussion. As to the first two bullets, about the supervision of the Director and the application of policies. It strikes us that if you were not involved in the Executive level of ACCSP, you probably wouldn't have a lot of awareness. You wouldn't have a lot of content to comment on those first two bullets. The question really that we had for you the Council, in general, is the level of transparency satisfactory to you? Is knowing about the supervision of the Director and the policies applied to staff. Is that just too much weed? Is that really what you need to know about? Are you content with the level of transparency? Hold that. Put that as a thought question for discussion.

Then the last of those bullets, which has to do with the full incorporation of ACCSP activities, which is state and federal legislative outreach effort. Like I said a couple slides ago, and this is the only one where there were some respondents who strongly disagree. The thought question is, what does the Council as a body expect from ACCSP in this so far?

I think we would like to know more what the body is thinking. Is the thought that being involved in legislative lobbying activities is not an appropriate role for ACCSP? What are the expectations going forward in this regard? Again, that is my second

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thought question for the Council. Then the final bullet there, again just repeats this idea that there was some uncertainty on the part of the Coordinating Council and the Operations Committee members, as to how the other were feeling.

This is the final conclusions by it again, just wrapping it up. The majority of the respondents do feel better informed, engaged, invigorated, and that this change is due both to the integration into ASMFC, and to the leadership. All our findings agree that ACCSP is advancing in its mission, which is probably that is the crux of it right there. I think, Geoff, that wraps it up. That's the last slide, right? That brings us to discussion. Does anybody have comments? If you do, raise your hands.

MR. WHITE: I see Cheri's hand raised.

CHAIRWOMAN FEGLEY: Okay, Cheri Patterson.

MS. PATTERSON: Good morning, Lynn, how are you? Could you roll back a couple slides to your thoughtful questions? I think that we had, when it came to supervision of the ACCSP Director, and consistent application policies for all the staff under the ASMFC umbrella. We had concerns originally, because of obvious reasons.

The last director we did have some concerns with, had issues with, and it was affecting, at the very least, meeting content, the information being shared to the Board meeting, Council and such. I think now that it is under ASMFC, that we don't have that transparency issue. However, that was kind of the vote that we took.

We kind of said, this body really doesn't want to be concerned about supervision and staffing and policies and such, and hence further reasons why it got put under ASMFC governance, so that there could be a little bit more oversight, closer oversight. It would be an uncertainty for us, and I'm not sure that that is a good thing or a bad thing.

I would hope that if there were concerns in the future that it would be brought forward to the Coordinating Council, or at least the Executive Committee for discussion, because this is an important program that I would hate to see compromised in any way. As for full incorporation of ACCSP activities into state and federal legislative outreach efforts. I'm not sure that that is something that we consistently get information from. We don't know if ASMFC or ACCSP actually has conversations with any sort of funding legislative sources.

I'm not quite sure how we would know that, and I'm sorry if it has been outlined somewhere and I've missed it. But I think that that might be a way to maybe get over that particular uncertainty, is just say any sort of activities that has been conducted for funding outreach, whether it be through the state or the federal legislative processes. That is my thoughts, thank you.

CHAIRWOMAN FEGLEY: That is really clarifying, and I appreciate that. I think your point that for those first two bullets. That is the reason why one of the drivers behind this transition was really to take some of that off the plate of the Coordinating Council, is really good insight for all of us. I think the idea that maybe a little more outreach, in terms of any further activities that are happening might be productive. That is also helpful, so thank you for that. Is there anybody else with comments on this?

MR. WHITE: Lynn, this is Geoff. I would like to add something.

CHAIRWOMAN FEGLEY: Absolutely.

MR. WHITE: When it comes to the legislative piece, my perspective is really that under the governance of the Commission, it allowed ACCSP activities to be prioritized along with what Bob, and the Commission Chair and Vice-Chair, and Deke do up on the Hill. I think that's been a benefit of avoiding potential for competing

priorities, and with that if Bob or Pat would like to add something, please do.

CHAIRMAN FEGLEY: Does anybody else have any comment about these two thought questions, or about the survey as a whole?

MS. SIMPSON: Bob has raised his hand.

CHAIRWOMAN FEGLEY: Bob.

EXECUTIVE DIRECTOR ROBERT E. BEAL: Good morning, Lynn and thanks. Now just to sort of add to what Geoff said. You know when Deke and I go to Capitol Hill and others do, ACCSP data collection in general is part of our things that we're asking for funding for. As everyone knows, part of ACCSPs funding comes through the Atlantic Coastal Act. That is obviously way on the top of the list for everything that we do on Capitol Hill. You know we do actively seek funding for ACCSP, and data collection in general; fishery dependent, independent, MRIP, you know recreational data collection also is another thing that is always at the top of our list. It's really important, and you know recreational data obviously are not spread and it probably comes up in a lot of our conversations with Congressional officers, and they hear a lot about recreational data and that quality that is available to managers. It is absolutely part of our priorities and things that we seek out, and make sure there is continued support for when we go up to Capitol Hill.

CHAIRWOMAN FEGLEY: Okay, that's good to know, Bob, and it makes sense. Does anybody else have any comments on this? I guess I'm going to assume from Cheri's comments that if responses that related to strongly disagree had to do with the sort of uncertainty as to whether ACCSP was actually prioritized within all of the Commission activities in the outreach activities. I am going to just assume that that is what that strongly disagree was about.

If anybody else has any comments on this I would love to hear them. Okay, well I think we're seeing none, so with that we're going to go ahead and close the discussion on the governance survey. Thank you very much, Julie for putting that together, and making sure, keeping on people reminding them to respond. I think that was a very valuable exercise, and satisfied the action item in the Transition Document.

COMMITTEE AND PROGRAM UPDATES

CHAIRWOMAN FEGLEY: With that we're going to go back to Julie Simpson, and Geoff White, to go over Committee Activity. Take it away guys.

MS. SIMPSON: Thank you, Lynn.

MR. WHITE: Thank you, Lynn. Julie, has been the organizer on this, so she is going to present our committee activity section.

MS. SIMPSON: We wanted to just begin this one by highlighting some of the committee activities that have happened between now and the most recent Coordinating Council meeting. The Operations and Advisory Committees have discussed the initial FY2021 proposal. This year we had 9 Maintenance, 6 New and the one Admin, for a total of about 3.6 million in requests. Some of the highlights from that is that we received our first ever submission from the PRFC. We're glad to have them join into that project. Also, as a highlight from the Commercial Technical Committee, they've submitted a proposal to continue their conversion factor validation and development, and that is for the priority finfish and shellfish species. This is their second proposal to do this project and these conversion factors.

On the Information Systems Committee side, we're tracking the SAFIS redesign. Right now, the switchboard has been released for partners, and that has allowed them to adjust just the fields that are being collected in the eTRIPS application.

That can be done at either the trip level, the effort level, or the catch level.

Also, in this month, eTRIPS mobile is going to include some SERO and HMS needs. We are going to be also including multiple compromise partner lists. What that means is that when the fisherman is dual permitted. For instance, if they have a SERO and a GARFO permit, we can't have them see a list of gears or species that is specific to either SERO or GARFO. SERO, GARFO, the Science Centers and HMS have been working with us in collective meetings, to create a compromise list that includes all of the appropriate species or gears or dispositions that would be acceptable to all partners. It may not be something that is normally on the GARFO list, but they are willing to accept the value, because the partner is dual permitted, and you don't want the person to have to fill out more than one report.

Those multiple compromise lists will be coming out in January of 2021. We're going to have eTRIPS/online beta testing in November. That will also be available in 2021, and eDR, the dealer report redesign work, we're going to be jumping into that full throttle next year in 2021. The reason that we did the just sort of highlights of the activities, is because one of our new committee activities is the Monthly Committee Newsletter.

We wanted to get some feedback from the Coordinating Council today on how you felt that particular activity was going. So far, you should have received three committee newsletters, and those were also included in your materials before the meeting. We've had some feedback via e-mail, but we really would like to get feedback today on how you feel the utility of that is going. So far, we've received positive feedback. Then we also wanted to know a little bit more about your preference for future meeting presentations.

Because you are getting the newsletter, and because we've included the newsletter in your materials, what we tried to do was shorten the

committee updates, and just focus on a few highlights, and then move forward from there. That helped to streamline this portion of the meeting a little bit. Right now, I will stop talking, and then see what feedback you have on both the newsletter itself, and how you feel this style of presentation worked for you today, and what we should do in future meetings.

CHAIRWOMAN FEGLEY: Thank you so much, Julie, and I'm just going to start by weighing in that I love the newsletters. I really do appreciate it, because it allows me to keep it on my radar, and just keep track of what's happening, and also most importantly have them stored as a reference. I just want to say that I very much appreciate it. I think the streamlining of the meetings is also very useful. Is there anybody else that has feedback on the Committee Update?

MR. WHITE: We've got Doug and Kathy with their hands raised first, and then Lewis Gillingham.

CHAIRWOMAN FEGLEY: Doug Haymans.

MS. KATHY KNOWLTON: I concur with what was just said. I think having them, they are short, the newsletters are short, but they are very to the point, allocation is part of the meeting information, and less in the amount of details during the Council meetings, and being able to go into certain issues more in depth, because there is more time during the Coordinating Council meeting is excellent, so good job you guys.

CHAIRWOMAN FEGLEY: Thank you, Kathy. Lewis Gillingham, I think you are on deck.

MR. LEWIS GILLINGHAM: I talked to Geoff about it - I thought the monthly newsletter was ideal. It outlines it for you, you've got it, you can look at it at your leisure, digest it, and anything that can streamline the meetings is definitely worthwhile. But, I found it very informative and I hope it continues. Thank you!

MR. WHITE: Thanks, Lewis. That was an e-mail, and I appreciate you sharing that with the whole Council today. Of course, this is also an opportunity if you guys have questions on some of the Committee activities that were in the materials, you may feel free to ask one.

CHAIRWOMAN FEGLEY: Anybody else with feedback or a question, as Geoff said. Okay, seeing none. I'm going to close out that agenda item by saying that I think it sounds as though the Council as a body is definitely supportive of the streamlined merge to the presentations to the Council during meetings, and that the newsletter is a wonderful thing. Again, great job and keep it up.

PROGRAM UPDATES

CHAIRWOMAN FEGLEY: With that I think we move on to the next agenda item, which is Status of the 2020 Action Plan, which I believe is now Goal 3 in the Full ASMFC 2020 Action Plan. I will pass that over to Geoff.

MR. WHITE: Actually, we snuck in an item on the accountability that Julie is going to cover. We still have some program updates that I wanted to give, so let's stick with Julie, and move on to the Accountability Small Group.

MS. SIMPSON: The Accountability Small Group was charged from this group. What the small group did was in their first meeting or two tried to define what their process would be for producing something at the end of their work. Right now, that group is meeting for one hour a month, and we are trying to keep all of our meetings to working meetings, so that we minimize the amount of homework that folks have, but that we can keep moving forward all the time.

Our small group process starts out by really defining accountability so that we have a scope for this project, and inventorying current practices and procedures. Those two are highlighted, because they are essentially done.

We are currently in the sort of wrapping up of 2, and working on 3, which is defining the gaps between what we're currently doing and what the needs are for science and management.

Then that will sort of end the phase of gathering information, and then we'll move into evaluating the practices and procedures. Then that will allow us to produce documents, and develop the best practices that can be part of the ACCSP standards moving forward. That is an approach that the small group is going to be using.

What I can do today is talk through a little bit of how we've gotten so far with 1 and 2. In defining accountability, there was a recognition that accountability, while it is a thing, it is also something that involves a lot of interaction. When we did our first brainstorming session about what is accountability. We found that some of the things that came out of accountability were not really accountability itself, but rather who is involved in the accountability in various ways.

We tried to pull those out a little bit, so that you could sort of see the whole environment or system of accountability as a whole. I defined the audience of accountability as the partners, the Coordinating Council, agency leadership, the Commissions and the Councils. Then we also came up with a 'who'. This is who executes it, who is responsible for accountability? That is the agencies that collect, audit and process data, and that creates the datasets that everyone is using. Then the "To Whom," so this is the sort of, if you're executing accountability to whom are we accountable? We decided that we're accountable to the stakeholders and the public, but also self-accountable, because at the end of the day a lot of the 'who' is executing is also the same group of people that are using the data.

There is a lot of self-accountability that is part of this group. Then the next part is really "what." The 'what' is the accountability portion of this. We saw data integrity and realized that data

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integrity is essentially a big umbrella, under which a lot of the rest of these things lived. On the left we have a whole list of things that we came up with in our brainstorming that sort of defined the exact data integrity and accountability.

That is the quality control and assurance, compliance, accuracy, accessibility, metadata, timeliness, uncertainty, and validated is off to the right there, because we felt that validated actually applies to all of the things that are on the left. This is essentially the environment of accountability that we've created for the small group in the scope of what we're working with.

We currently have the survey that we put out originally, and right now we're working on defining that. We're going to be reaching back out to the agencies, and asking some folks about gaps that they see. We're going to be asking a couple of specific questions about gaps that you see in your own process, and gaps that we find the management folks might be seeing as well.

That is what we've done so far. The group is progressing very nicely and meeting monthly. Hopefully within the next, potentially not in the fall meeting, but potentially in our next winter meeting, we'll be able to have another update for you guys on how things are going. If anyone has any questions on accountability, I can answer those before Geoff jumps into the Program Updates.

CHAIRWOMAN FEGLEY: Thank you so much, Julie, and glad we didn't go on without that, because that is really, really good stuff. I have a little bit of a question for you, and I'm very impressed with what the group is doing. I think when we began this, maybe a year or two years ago, it was a little bit of a tough charge. It wasn't particularly well defined.

I think you guys have done an excellent job of, as you said creating this accountability environment, you know really what is defining it. My question is for particularly validation. Do you foresee that

this committee is going to come up with, would there be specific recommendations for validating data, you know things like we're having monitors, or trip level dealer reporting? Is that a place that you foresee the group going, or not?

MS. SIMPSON: Yes. I think when we get to, Geoff can you pop back to the process really quick? Where we talked about the document developed best practices. One of the reasons that we're using that term of best practices/standards is we feel like this is definitely one of those places where there are multiple approaches that are acceptable. From a standards standpoint it's a little bit different than some of the other existing standards, where we say, thou shalt use the ITIS code for species. However, it is still going to be essentially like a short pick list sort of deal, where what we're going to do is put together what we call the best practices. Everyone's data collection and validation may not look the same. But if you have a data collection that works in a certain way, then there is going to be maybe one or two options. You might be able to do one of two different things.

But they're still going to be recommendations for what is appropriate and acceptable for the system that you have. The recommendations will be there, they just won't be quite as defined as the normal standards that we think of. Does that sort of answer your question?

CHAIRWOMAN FEGLEY: It does absolutely. Are there any other questions for Julie on accountability? Okay, seeing none, so Geoff then I think we are back off to you.

MR. WHITE: Thank you, Lynn, and thank you Julie, for getting it this far. I think we'll really proud to see who gets the magazine of materials. We did include a bunch of detail on the program activities since May. I'll run through some of those highlights here, and allow for some questions as we go.

One of the areas is on staffing. I'm happy to report that the program has finally reached the staffing support level planned in 2019, with today's official start of Lindsay Aubart, who is doing the data feed. She has been working, prior to coming here had worked with our partners in Georgia, comes highly recommended, spent a few years overseas with her husband's deployment, and they are back in D.C.

She's been working and preparing remotely part time for the past month, and with Julie to get up to speed on the biological module that she is going to be working on. We got a chance to meet in person last week, and she is now, as we will say, locally remote here in D.C. Welcome to Lindsay and glad to round out the data team, and the ACCSP staffing level at this point.

Jumping in on where we're at with program funding, where we are in the budget at the moment. Of course, we've got a couple of different pots to look at, and one is to make sure you guys are aware of where we're going. It's (not clear) to get the Admin grant, it's in year 5 of 5, and of course determined where our meetings are underspent and the contracts are a little higher than normal.

We'll be working with more involved and things to figure out where we end up at in February. Most of the planned activities for this year are really on track. Not being able to hold in-person meetings, there is a fair amount of money there that we need to determine the right approach with. As we get further along, we will engage the ACCSP leadership team as necessary.

With the MRIP state conduct, we are now as of July in the year 2 of 5, so we've got a bit more time to work with things there. There has been of course an increase of \$900,000.00 a year to the Atlantic for really directed towards APAIS sampling. There was a newsletter, sorry a news release that MRIP released 3 million for additional sampling.

This \$900K is the Atlantic component of that, and really directed toward APAIS sampling. We reported to you guys before that that is really strategically allocated to places that need to improve PSE, and that means that where there are longer seasons and greater species diversity and along the coastlines that there is probably going to be a larger increase in those areas to address those types of things. In terms of the budget and what's been going on for the last six months here, we've been continuing to support the state invoices for Waves 1-3. Really improving on when invoices come in that are a tracking of what the costs are per wave, and answering a few of the requests from our federal partners on what's going on.

Those are ongoing things that are generically going well. We also had some external funding. Julie put in a proposal last year for a quality assurance project, a one-year project to improve the data provisioning process for the ASMFC stock assessments. That was really initiated just in June. At this point I'm going to pause, because I see a hand raised by Kathy. What have you got for us at this point?

MS. KNOWLTON: Are you guys still looking for a Wave 5 start for the increased sampling?

MR. WHITE: I've got a little bit more of a project point a little bit later here, but yes. Most states are going to be able to do something in Wave 5. A few of the states are not going to be able to do that. But in general, yes. We're getting that started, and there is work through just the state by state agreement. Once we know how much sampling states can handle, we'll adjust the budget accordingly. I admit that was a little bit of a chicken and egg exercise.

How much funds do we have? How much sampling can you do? But I think Alex has done a great job of working with the states and MRIP to find a direction of the overall amount that can be handled by each state through the end of this year. Then working through the Rec/Tec and the

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APAIS staff on the details of which wave and which expense groups, how to allocate that to make the best dependent approaches to the data and the estimates.

CHAIRWOMAN FEGLEY: Go ahead, Geoff.

MR. WHITE: The next step on funding is really to look at what does next year look like. One of the things that we've noticed is some initiatives are not really part of the ACCSP Admin Grant. There have been a few FIS proposals developed. One is really for development of the online data query tool, the Data Warehouse, as well Assignment Tracking Application that we do for MRIP. Then we have some cleanup tasks.

The warehouse was identified as a project, because with the SAFIS redesign issues, we changed the data structures, and how we moved the data literally from one machine to another. They are in the same room, but since data structure has no mind, then the way that people query those is going to have to be a little bit more flexible.

That is a pretty large undertaking that we wanted some external support for that potentially driving the requirements and the tracking and participating in it, but it's beyond the time and resource constraints, so we put in for some additional support there. If that gets funded that would start in, I believe April. The second proposal we put, we put in as more of a quality management proposal. That one is on project scoping, data auditing and validation of electronic logbooks, as we have additional partners implementing mandatory electronic logbooks that come through SAFIS, as well as other programs. The ability for them to see, audit, edit those records in transparent ways with the fishermen and dealers that are submitting them becomes another task. Making sure we had the right alignment on the data flows and where that happened is kind of a point there to make sure we're connecting across all (muffled). Then lastly,

we did submit a NFWF proposal about the SAFIS Helpdesk.

The regulations for 2021 that will add approximately 6,000 new fishermen, and hundreds of thousand trip reporting records, not all of those will come through the ACCSP system, but we think a lot will. The SAFIS Helpdesk is probably not budgeted at a level in the ACCSP Admin grant to support all of those fishermen in that transition. That is another point where we're seeking some extra help on, and I wanted to make all of you aware of those backings.

CHAIRWOMAN FEGLEY: Okay.

MR. WHITE: The next thing I'm on, External Coordination. I really want to point out here again, a transparency in process. We have a lot of monthly meetings highlighted, also ongoing coordination on shared initiatives and current project commitments. The bonus here is really the overall process is improvement to advance ACCSPs goal in data collection and data management.

That has been happening with FIS, with GARFO, with GULFFIN, as well as with the MRIP Regional Implementation Council, and in other workgroups as that goes through. The kind of ongoing ACCSP participation here has been beneficial in aligning a lot of the details of things. In the end it's the perspective that we're all in this together.

We're trying to end up with the best product and the best integrations that support the fishermen and the fisheries management, as well as the data collection standpoint. There is a lot of good feeling going on in all of these activities. Usually when the materials set on, I'll read it all out to you, and again, here is an extension of that working with the Councils in outreach and training.

The South Atlantic Council, some partner goals, science projects, the SEDAR scheduling. We've been highly involved with SERO pretty much

these bi-weekly calls supporting the SEFHIER involvement, implementation, what's happening in the SEFIS application. How to meet their requirements as well as balancing with other partners.

There have been some really great meetings, where not developing stove pipe pieces across the board, some of these coordination items, and adding the complexities but benefits of some of these integrated programs. Just wanted to call out those items. In terms of some of our project highlights, I've got five of these to step through.

From the Data Warehouse, the spring data load and adding staff that meet in the states, and partner agencies that may not have been out sampling, but working on a more task in-house over the last several months, has provided some good updates to the Data Warehouse. I think there is a trend in the Data Warehouse, of meeting the last three intended release dates in a row, and so kudos really go out to the ACCSP staff. Heather Konell is the one who helped coordinate that and of course Jennifer Ni as our analyst does most of the data load. But it's really reliant on the partners, staff and partners to deliver the components to Heather and Jenn and the Data Team to be able to do that work. The merges are kind of the process of balancing fishermen reports not accounted for in dealer reports, to create the consolidated datasets. While the participant IDs may seem a weedy detail for the Council, improving those linkages between sort of our report and associated participants really supports the counts of participants when performing confidentiality.

The more we can meet the confidential status confidentiality guidelines, and present data is an awareness point that I think was worthy of mention here. That is what's going on there. The fall data load is coming up, and data requests are highlighted activity of the data team. We had many, many, many COVID related data requests, both for data that may or may not have been available, as well as contact information.

I was really glad to see ACCSP staff kind of highlight the right questions of where they could answer it directly, they did, where there were questions about oh, is this okay to share? How can we handle it? How do we coordinate with the states? What surveys are the different groups doing, and what is our proper level of involvement was really handled quite nicely. I was impressed with how everybody handled that. One of our bigger items between your May meeting and now is of course FISMA.

This is huge! We were granted the authority to connect on June 9. This is something we've been working on since discussing it really in 2018, and then starting early in 2019. This is a noteworthy model of meetings, and evaluating our security profile, but also just a process of kind of discovery and documentation revealed that ACCSP started with a really strong security posture.

Based on this process our security has been improved moving forward, and the next couple of slides really provide a brief history of that progression. What I want to point out is that FISMA isn't a one-time deal. It is an ongoing monitoring and completion process. This includes quarterly reports and ongoing external third-party audits.

One of the things that happened over the last six to eight months is that what was highlighted as a process that was going to be a three-year plan, turned into something that as of about December, became an 18 month proto-plan but about a six month implementation, which required a lot more activity, a lot more money, but was the right thing to do and so well worth the extra staff time put into this.

But again, we started the process in 2019. We had a lot of work done by Ed Martino, IT manager, as well as Joan Palmer, and of course Julie and I are the other folks who round out our Security Team. Last fall we started working much more heavily with the NMFS Office of the CIO. We

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hired a contractor in March, that got completed in May, and we were granted the authority to connect.

This set formalized data sharing, heightened security, and more appropriate approaches all the way around. The one item we're waiting on is where SERO and ACCSP staff had been coordinating and doing everything that we were capable of doing. There is one piece that is awaiting approval at the Privacy Office, so that a federal process standard that we're hoping comes through shortly, which will again help out in the data sharing and the C5 implementation. There has been a bunch of updates, I think I'm going to pause and look for hands at this point, and then we've got I think three more, and we're moving through. Alan, what have you got?

MR. ALAN LOWTHER: This is Alan Lowther, the Office of Science and Technology. I just wanted to congratulate ACCSP on the great job you did getting the data to our office on the usual schedule. I know with everything going on and people working from home there were a lot of challenges to get that done.

I think it was very impressive on your part, and also all of the state partners who were still able to compile their data, and get it to us. I think that was a very impressive accomplishment. Actually, those data are available now on the National Office of Science and Technology website for the whole country for 2019. Anyway, I just wanted to congratulate you for that.

MR. WHITE: Thank you so much, and we're glad that forwards on to the national level statistics, and you guys were able to complete that. Earlier and earlier every year that seems to be so a shared win there. Thank you! Revisiting MRIP, with all of the state partners and federal partners. We have completed a lot of work with Tom Sminkey over at MRIP about coordinating and adjusting to the sampling impacts during COVID.

We've continued data collection supporting the state staff as much as possible under the grant funding out of NOAA, including submitting the Wave Reports on time with the available data. Again, there has been solid extension and utility of the tablet data collection application for the field samplers and the other projects including the full implementation of states conducting the For-Hire Telephone Survey.

There were some changes to that data collection application to make sure it worked, not just the For-Hire Telephone Survey, but the Large Pelagic Survey For-Hire add-on. The FHTS data collection was very minimally affected by COVID. There were several states that had mandated for-hire closures of those fisheries, and therefore some calls were limited during those periods. Staff was able to develop new (to ACCSP) FHTS Wave Reports. Those are now in for Waves 1-3, and we are glad to be kind of supportive and helping out with that. There has been a lot of learning on all sides, and again it's been a positive activity.

A little bit more on internal Outreach. We've touched on the Monthly Committee Newsletter already, and having Marisa onboard to help out as our Program Assistant. She's been working with Julie a lot on the web page maintenance, making useful information easier to find such as fixing and finding document links and expansion of content, paying some attention to things like who should be our staff leads and images in the ongoing integration with the ASMFC communications strategy. That includes things like format, timing and content of newsletters, e-mail postings, Tweets, et cetera. One of the nice things that we've seen through the external coordination is greater awareness of where partnership things are going to be impacted, if for example GARFO or SERO or even Headquarters have an IP maintenance window, and that might affect a fisherman reporting app of one of our data connections.

When we are made aware of system outages beforehand, we let the help desk know, our staff

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know, and we're much better able to support the end users through those things, whether they occur wonderfully on schedule, or sometimes they take extra time to get resolved. That kind of not just outreach, but coordination with our partners has been an improvement that we're certainly putting effort into.

Now I'm going to come back to SAFIS. Of course, a great big program, it gets complicated, and one of the things that we're really highlighting is the alignment of the ACCSP tools. Does eTRIPS/mobile do all the same things that eTRIPS/online does? When those things occur out in the field, do they properly connect with eDR/Online and the development of eDR/Mobile?

There are complexities of multiple permit holders, seeing the right questions, meeting the needs of HMS, so that when an HMS species is encountered with or without a permit, that they get additional questions that meet the data needs and requirements. That is the big picture of what we're after.

In the weeds of the process, the software team Karen Holmes and Nico and HarborLight, and others like Joe Myers, have all been involved, and Julie as well, in these kinds of additional evening testing parties. It makes for a highly focused coordinated activity, due to the major benefits to partners and fishermen, because it's been vetted by all the people building it to task as different users with different trip sites, and find some of those things before they get out to release, and we've got to be aware of the bugs.

It's a process point, and yet it really is all of that, the quality of the products that are coming out of this EFP, and I'm thrilled with what I'm seeing as the improvement in processes. Some of the things on the rollout schedule. They are highlighted based on eTRIPS/mobile or online. It's a little bit of a repeat of some of this information, but the eTRIPS/mobile Version 2 is really bound to multiple partner needs.

Some of those include compromise fields and lists of values, so that if you have one of those permits you can begin testing and looking at that as either an agency or a fisherman. There is one more round before they put that out and we really see that being put out into production into the stores for end users to download at the end of August. I've got the Myers test eagle on that one.

Julie already mentioned the switchboard and the modifications to coexisting partner elements from the switchboard similar to mobile. It's an improvement in how the system functions behind the scenes, how things are being processed and presented so that it is more standard. That brings us to the eTRIPS/online redesign.

The word redesign we've heard a lot. I've got two slides that summarize in pictures of where we're at. But it's moving to a better processing structure after the reports are being submitted. Then so as you build it from the inside out, at which point some of these external tools are on the timeline now by January '21 for eTRIPS/online, January '21 will support things like additional fields for lobster, tautog. Tag counts were implemented earlier this year as a capability, but will be strengthened and approved for partners to put out as of next year.

Of course, when the regulations go in, those eTRIPS/mobile compromise list will become more active. That compromise list is likely to be put out in a Test version sometime later this fall, so that the partners will be able to take a look at that as well. High activities on the fishermen trips portion, EDR, and the Dealer Reporting, both online and mobile. They are going to get a bit more focused during 2021. The underlying process of the redesign in general is really highlighted in these next two spots. In this one the way that it had grown was really that each new component of SAFIS had its own processing, and that's where the format had proper data in the end.

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That required a lot of intermediate time, development time. The newer version really streamlines it so that regardless of the method of entry, it all follows the same gears and cycle of validation inserting and updating, to end up at the data seen here in the end. That is a huge step forward that is a little less visible, but makes the flexibility and the tools function in a better way for the partners and the fishermen.

The last project update is SEFHIER. The Gulf of Mexico regulations were public, and that will become active as of January 5, 2021 for logbooks and the Hail outs. The location tracking component is still to be determined. ACCSP SAFIS applications are being reviewed, and are waiting SERO certification for that. That will apply both to the South Atlantic and the Gulf of Mexico.

The graphic at the bottom is in your materials, so we don't have to cover each color and dot. But the idea was the integrated program and database required some extra lead time that was critical to our overall success. We kind of started back in June, wanting to have this. We got up through June 22, with what was going to be happening with some season planning.

What was going to happen after the middle of June with additional development time, outreach, partners, the actual rollout with the compromise list. Incorporating what was happening at the development level, what was happening at the outreach level, and what's happening at the implementation level.

Fishermen that have a federal permit are not going to get extra questions because they also hold a South Atlantic permit, are not going to get those extra questions until the South Atlantic permits are in place. That kind of balancing out of the reporting version's workload and the timing was all, again critical to the overall success of the approach. That ends the progress highlights. Again, I'm going to pause before we go the Action Plan status, which is quick, and see if there are any hands that go up at this point.

CHAIRWOMAN FEGLEY: Thank you, Geoff for that. Are there any questions for Geoff? Kathy.

MS. KNOWLTON: I almost forgot remembering the official name of what you guys were talking about last year in validating some aspects of the Committees. In my memory you were loosely referring to it as like the Super Committee. Have you guys progressed further with that discussion?

MR. WHITE: That one is a little bit slower. It's part of the Action Plan status. We've really been highly focused on the External Commitment. ACCSP in trying to catch up with the reporting pieces and the data collection and delivery items. While the Committee reformatting isn't finished, it is still on the list. I know that Julie has been working on that, so I invite her to provide a little update there if she would like.

MS. SIMPSON: Yes, really Kathy it's been a matter of the feedback that the Council provided in a previous meeting was really useful. We just at this point haven't had the bandwidth to really focus on that. I'm hoping to get to that toward the end of the year and get that ball rolling, but no significant progress has been made on that one.

MS. KNOWLTON: Okay, and I wasn't asking and then putting pressure on you all, I just still am testing to use of how that would work. It popped in my head to get an update of it, so thank you.

MS. SIMPSON: Yes, no worries, and I think the previous feedback has sort of been to take a little bit of a step back, and take a broader view when we presented it to the Chairs and Vice-Chairs to think about as a discussion. I think that in my mind when we move this forward, it's going to be a little bit more at the discussion level. I think the direction is still very much pending.

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Status of the 2020 Action Plan

CHAIRWOMAN FEGLEY: I have a time check. We have ten minutes left on our agenda. Are there any other questions for Geoff, before he moves into the Action Plan? All right, take it away, Geoff.

MR. WHITE: We really just have one slide here. There are four areas of the Action Plan. I know there have been a lot of questions as to what everyone can do during COVID, and that has certainly limited some areas of data collection and meetings, but I can certainly say that ACCSP and all of you as our partners have been moving forward.

Under Program Management we've made a lot of progress tracking funded projects. The Committee process engagement is really about the Committee Newsletter, more transparency with reporting to Council the materials that we've been sending out to you guys before these meetings, as well as really the integration with ASMFC. That was a high priority for Bob and I, as we came onboard last year.

There has been a lot of wonderful work internally on that standpoint. The one item again that has kind of limited external work to date, is on the methods to distribute the ACCSP data standards in new ways. There have been certainly ideas being discussed by staff that likely are second half of the year type of activity. Under Data Collection, again SAFIS has been covered earlier. The recreational survey's primary item, was really moving to state conduct of both APAIS and SAFIS. That is ongoing, but definitely a process check mark. The Rec-Tec Committee has been reengaged with the help of Alex DiJohnson and Melissa Paine as helping to move along efforts on addressing things in the Implementation Plan. The PSE would give this on refunding, as well as the for-hire data collection plan and in working through the Rec-Tec they've got several meetings that they've had, and more on the list to work through those kinds of issues.

Under Data Distribution, again most of those activities are on track, data infrastructure and security, we have absolutely, that ties in with FISMA, which ties in with the budget of when we return a replacement, those items are certainly on track. I just wanted to take a point that halfway through the year here we are looking pretty good on what our Action Plan was.

That goes to both the capabilities and intention and work of staff, but also the scoping of appropriate items for our year. Thanks to you all for keeping us on track and involved with our Action Plan. With that, while the office was closed, Julie and I did get to go in and do some training for security, so this is a recent picture. This is a good point to stop and ask if there are any other questions, or questions that you would have. Lynn, back to you.

CHAIRWOMAN FEGLEY: Okay, are there any questions on the Action Plan? I'm looking for hands, but I don't believe we have any.

ADJOURNMENT

CHAIRWOMAN FEGLEY: With that, does anybody have any other business for the group? The next question is, is there any objection to adjourning the meeting? Okay well, thank you everyone for your time and your attention, and Geoff and Julie, thank you to you and your team for all the work you've done. I'm really appreciating the communication and your excellent work. With that we'll adjourn the meeting, and see everybody this afternoon.

(Whereupon the meeting adjourned at 11:55 a.m.
on August 3, 2020)

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FY2021 Operations Proposal Rankings

	Admin Grant	2,208,056	\$44,423	2,252,479
3.35M	Maint @ 75%	823,141	New @ 25%	274,380
3.50M	Maint @ 75%	935,641	New @ 25%	311,880

Project Name	Partner	Score	Cost	Cumulative Cost	3.5M Amt Remaining	3.35M Amt Remaining
FY21: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	RI DEM	9.32	\$ 27,521	\$ 27,521	\$ 908,120	\$ 795,620
ACCSP Data Reporting from South Carolina's Commercial Fisheries	SC DNR	9.21	\$ 56,923	\$ 84,444	\$ 851,197	\$ 738,697
FY21: Managing Mandatory Dealer Reporting in Maine	ME DMR	8.79	\$ 61,263	\$ 145,707	\$ 789,934	\$ 677,434
Portside Commercial Catch Sampling and Comparative Bycatch Sampling for Atlantic Herring, Atlantic Mackerel and Atlantic Menhaden fisheries	ME DMR	8.32	\$ 25,896	\$ 171,603	\$ 764,038	\$ 651,538
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	RI DEM	8.16	\$ 132,064	\$ 303,667	\$ 631,974	\$ 519,474
Continued Processing and Aging of Biological Samples Collected from U.S. South Atlantic Commercial and Recreational Fisheries	SEFSC	8.11	\$ 88,931	\$ 392,598	\$ 543,043	\$ 430,543
FY21: SAFIS Expansion of Customizable Fisheries Citizen Science Data Collection Application	SAFMC	8.08	\$ 114,792	\$ 507,390	\$ 428,251	\$ 315,751
Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries	NJ DFW	7.63	\$ 54,601	\$ 561,991	\$ 373,650	\$ 261,150

includes carryover from maintenance projects

Continual Validation and Development of Conversion Factors for Priority Fish and Crustacean Species	ACCSP CommTech	51.37	\$ 142,056	\$ 142,056	\$ 543,474	\$ 393,474
North Carolina biological database enhancements to prepare for transmission of data to the ACCSP	NC DMF	50.18	\$ 153,600	\$ 295,656	\$ 389,874	\$ 239,874
Creation of a Genetic Stock Identification program for Atlantic coast striped bass (Morone saxatilis)	MA DMF	46.97	\$ 99,820	\$ 395,476	\$ 290,054	\$ 140,054
Electronic Trip-Level Reporting for the Potomac River Fisheries Commission Commercial Fisheries Sector	PRFC	41.21	\$ 263,712	\$ 659,188	\$ 26,342	\$ (123,658)
Implementing the Research Fleet approach to Improve Fishery-Dependent Data Collection for Channeled Whelk (Busycotypus canaliculatus) and Knobbed Whelk (Busycon carica) in Southern New England	RI DEM/CFRF	40.58	\$ 115,149	\$ 774,337	\$ (88,807)	\$ (238,807)
FY21: Economic Efficiency Assessment of the Rhode Island Fluke and Black Sea Bass Aggregate Management Programs	RI DEM	33.61	\$ 61,384	\$ 835,721	\$ (150,190)	\$ (300,190)



FY2021 Advisors Proposal Rankings

	Admin Grant	2,208,056	\$44,423	2,252,479
3.35M	Maint @ 75%	823,141	New @ 25%	274,380
3.50M	Maint @ 75%	935,641	New @ 25%	311,880

Project Name	Partner	Score	Cost	Cumulative Cost	3.5M Amt Remaining	3.35M Amt Remaining
FY21: Managing Mandatory Dealer Reporting in Maine	ME DMR	8.3333333	\$ 61,263	\$ 61,263	\$ 874,378	\$ 761,878
FY21: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	RI DEM	8	\$ 27,521	\$ 88,784	\$ 846,857	\$ 734,357
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	RI DEM	7	\$ 132,064	\$ 220,848	\$ 714,793	\$ 602,293
ACCSP Data Reporting from South Carolina's Commercial Fisheries	SC DNR	7	\$ 56,923	\$ 277,771	\$ 657,870	\$ 545,370
Continued Processing and Aging of Biological Samples Collected from U.S. South Atlantic Commercial and Recreational Fisheries	SEFSC	7	\$ 88,931	\$ 366,702	\$ 568,939	\$ 456,439
Portside Commercial Catch Sampling and Comparative Bycatch Sampling for Atlantic Herring, Atlantic Mackerel and Atlantic Menhaden fisheries	ME DMR	6.6666667	\$ 25,896	\$ 392,598	\$ 543,043	\$ 430,543
FY21: SAFIS Expansion of Customizable Fisheries Citizen Science Data Collection Application	SAFMC	6.375	\$ 114,792	\$ 507,390	\$ 428,251	\$ 315,751
Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries	NJ DFW	5.6666667	\$ 54,601	\$ 561,991	\$ 373,650	\$ 261,150

includes carryover from maintenance projects

Creation of a Genetic Stock Identification program for Atlantic coast striped bass (Morone saxatilis)	MA DMF	58.3333333	\$ 99,820	\$ 99,820	\$ 585,710	\$ 435,710
Continual Validation and Development of Conversion Factors for Priority Fish and Crustacean Species	ACCSP CommTech	53	\$ 142,056	\$ 241,876	\$ 443,654	\$ 293,654
North Carolina biological database enhancements to prepare for transmission of data to the ACCSP	NC DMF	40.6666667	\$ 153,600	\$ 395,476	\$ 290,054	\$ 140,054
FY21: Economic Efficiency Assessment of the Rhode Island Fluke and Black Sea Bass Aggregate Management Programs	RI DEM	37.3333333	\$ 61,384	\$ 456,860	\$ 228,671	\$ 78,671
Electronic Trip-Level Reporting for the Potomac River Fisheries Commission Commercial Fisheries Sector	PRFC	36	\$ 263,712	\$ 720,572	\$ (35,041)	\$ (185,041)
Implementing the Research Fleet approach to Improve Fishery-Dependent Data Collection for Channeled Whelk (Busycotypus canaliculatus) and Knobbed Whelk (Busycon carica) in Southern New England	RI DEM/CFRF	33	\$ 115,149	\$ 835,721	\$ (150,190)	\$ (300,190)



FY2021 Proposal Rankings (Average)

	Admin Grant	2,208,056	\$44,423	2,252,479
3.35M	Maint @ 75%	823,141	New @ 25%	274,380
3.50M	Maint @ 75%	935,641	New @ 25%	311,880

Project Name	Partner	Score	Cost	Cumulative Cost	3.5M Amt Remaining	3.35M Amt Remaining
FY21: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	RI DEM	9.1363636	\$ 27,521	\$ 27,521	\$ 908,120	\$ 795,620
ACCSP Data Reporting from South Carolina's Commercial Fisheries	SC DNR	8.9090909	\$ 56,923	\$ 84,444	\$ 851,197	\$ 738,697
FY21: Managing Mandatory Dealer Reporting in Maine	ME DMR	8.7272727	\$ 61,263	\$ 145,707	\$ 789,934	\$ 677,434
Portside Commercial Catch Sampling and Comparative Bycatch Sampling for Atlantic Herring, Atlantic Mackerel and Atlantic Menhaden fisheries	ME DMR	8.0909091	\$ 25,896	\$ 171,603	\$ 764,038	\$ 651,538
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	RI DEM	8	\$ 132,064	\$ 303,667	\$ 631,974	\$ 519,474
Continued Processing and Aging of Biological Samples Collected from U.S. South Atlantic Commercial and Recreational Fisheries	SEFSC	7.952381	\$ 88,931	\$ 392,598	\$ 543,043	\$ 430,543
FY21: SAFIS Expansion of Customizable Fisheries Citizen Science Data Collection Application	SAFMC	7.9166667	\$ 114,792	\$ 507,390	\$ 428,251	\$ 315,751
Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries	NJ DFW	7.3636364	\$ 54,601	\$ 561,991	\$ 373,650	\$ 261,150

includes carryover from maintenance projects

Continual Validation and Development of Conversion Factors for Priority Fish and Crustacean Species	ACCSP CommTech	51.590909	\$ 142,056	\$ 142,056	\$ 543,474	\$ 393,474
North Carolina biological database enhancements to prepare for transmission of data to the ACCSP	NC DMF	48.886364	\$ 153,600	\$ 295,656	\$ 389,874	\$ 239,874
Creation of a Genetic Stock Identification program for Atlantic coast striped bass (Morone saxatilis)	MA DMF	48.522727	\$ 99,820	\$ 395,476	\$ 290,054	\$ 140,054
Electronic Trip-Level Reporting for the Potomac River Fisheries Commission Commercial Fisheries Sector	PRFC	40.5	\$ 263,712	\$ 659,188	\$ 26,342	\$ (123,658)
Implementing the Research Fleet approach to Improve Fishery-Dependent Data Collection for Channeled Whelk (Busycotypus canaliculatus) and Knobbed Whelk (Busycon carica) in Southern New England	RI DEM/CFRF	39.545455	\$ 115,149	\$ 774,337	\$ (88,807)	\$ (238,807)
FY21: Economic Efficiency Assessment of the Rhode Island Fluke and Black Sea Bass Aggregate Management Programs	RI DEM	34.113636	\$ 61,384	\$ 835,721	\$ (150,190)	\$ (300,190)



Atlantic Coastal Cooperative Statistics Program

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

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FY21 Proposal Recommendations to Coordinating Council

From the Operations and Advisory Committees

- Maintenance Proposals
 - Move that the Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries proposal be funded at the capped value of \$54,601 instead of the requested \$63,146
Motion: Amy Dukes, Second: Dave Gloeckner
Yes 22, No 1, Abstain 0
 - Move that the Admin Grant be funded with Option 1
Motion: Barry Clifford, Second: Story Reed
Yes 22, No 0, Abstain 1
 - All remaining maintenance funds should be rolled over into the new proposal categories*
- New proposals
 - Recommend that the first three ranked new proposals be fully funded*
 - Move that the Electronic Trip-Level Reporting for the Potomac River Fisheries Commission Commercial Fisheries Sector be funded fully to the extent possible with available funds
Motion: Brad Walters, Second: Amy Dukes
Yes 22, No 1, Abstain 0
 - Recommend that any additional remaining funds be utilized according to the average rankings for new proposals*

** indicates a consensus decision*

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

	Partner	Title	Primary Module	Others	Cost	Maximum Funding Year 6	
MAINTENANCE	1	ME DMR	FY21: Managing 100% Lobster Harvester Reporting in Maine	Catch/Effort (100%)	\$ 335,918		
	2	ME DMR	FY21: Managing Mandatory Dealer Reporting in Maine	Catch/Effort (100%)	\$ 61,263	\$ 61,312	
	3	ME DMR	Portside Commercial Catch Sampling and Comparative Bycatch Sampling for Atlantic Herring, Atlantic Mackerel and Atlantic Menhaden fisheries	Biological (70%)	Bycatch (30%)	\$ 25,896	\$ 44,484
	4	RI DEM	FY21: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	Catch/Effort (100%)	\$ 27,521	\$ 27,521	
	5	RI DEM	Advancing Fishery Dependent Data Collection for Black Sea Bass (Cetopristis striata) in the Southern New England and Mid-Atlantic Region Utilizing Modern Technology and a Vessel Research Fleet Approach	Biological (40%)	Catch/Effort (30%), Bycatch (30%)	\$ 132,064	
	6	NJ DFW	Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries	Catch/Effort (55%)	Biological (45%)	\$ 63,146	\$ 54,601
	7	SC DNR	ACCSP Data Reporting from South Carolina's Commercial Fisheries	Catch/Effort (70%)	Biological (30%)	\$ 56,923	\$ 56,923
	8	SAFMC	FY21: SAFIS Expansion of Customizable Fisheries Citizen Science Data Collection Application	Biological (90%)	Socioeconomic (10%)	\$ 114,792	
	9	SEFSC	Continued Processing and Aging of Biological Samples Collected from U.S. South Atlantic Commercial and Recreational Fisheries	Biological (100%)		\$ 88,931	\$ 88,931
			Total Maintenance		\$ 906,454		
New		Partner	Title	Primary Module	Others	Cost	
	1	RI DEM	FY21: Economic Efficiency Assessment of the Rhode Island Fluke and Black Sea Bass Aggregate Management Programs	Socioeconomic (100%)		\$61,384	
	2	ACCSP CommTech	Continual Validation and Development of Conversion Factors for Priority Fish and Crustacean Species	Catch and Effort	Biological	\$142,056	
	3	NC DMF	North Carolina biological database enhancements to prepare for transmission of data to the ACCSP	Biological (100%)		\$153,600	
	4	RI DEM/CFRF	Implementing the Research Fleet approach to Improve Fishery-Dependent Data Collection for Channeled Whelk (Busycotypus canaliculatus) and Knobbed Whelk (Busycon carica) in Southern New England	Catch and Effort	Biological	\$115,149	
	5	PRFC	Electronic Trip-Level Reporting for the Potomac River Fisheries Commission Commercial Fisheries Sector	Catch/Effort (100%)		\$263,712	
6	MA DMF	Creation of a Genetic Stock Identification program for Atlantic coast striped bass (Morone saxatilis)	Biological (100%)		\$99,820		
			Total New		\$ 835,721		
Admin		ACCSP	ACCSP Administrative Budget	Admin		Option 1 \$ 2,208,056	Option 2 \$ 2,170,067
				Grand Total Proposed		\$ 3,950,230	\$ 3,912,241



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

JANET T. MILLS
GOVERNOR

PATRICK C. KELIHER
COMMISSIONER

August 17, 2020

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

Dear ACCSP:

We are pleased to submit the proposal titled “FY21: 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 four 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 the first two seasons did not go as smooth as intended; however, the past two seasons were greatly improved. 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 2021 ranking criteria: catch and effort, sociological and economic data, data delivery plan, regional impact, funding transition plan, in-kind contribution, improvement in data quality and timeliness, impact on stock assessment and properly prepared.** For a summary of the proposal for ranking purposes, please see page 22. **During the pre-proposal process no questions were asked for this particular grant. However, after further review there were a few calculation errors identified within the budget that have been addressed.** Please contact Robert Watts at the MEDMR with any questions. Thank you for your consideration of this proposal.

Sincerely,

Robert B. Watts II
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Lessie L. White Jr
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Atlantic Coastal Cooperative Statistics Program
1050 N. Highland Street. Suite. 200A-N
Arlington, VA 22201

FY21: Managing Mandatory Dealer Reporting in Maine

Total Cost: \$61,263.40 (revised)

Submitted by:

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Applicant Name: Maine Department of Marine Resources (MEDMR)

Principal Investigator: Robert Watts, Marine Resource Scientist

Project Title: FY21: Managing Mandatory Dealer Reporting in Maine

Project Type: Maintenance Project

Requested Award Amount (without the NOAA administration fee): \$61,263.40 (revised)

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 FY20 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. The MEDMR required all 11 sea urchin dealers to report for the 2019-2020 season through the eDR mobile program for the third season. This was the second consecutive season that the program had very few issues within the season. 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. The MEDMR currently does not have any plans to expand swipe card reporting to other fisheries unless there are management needs that swipe cards would justify. The MEDMR staff was again 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 continue their management approach towards fishing days in the sea urchin fishery. In past years, harvesters were provided with set days they could fish. For the past three seasons, 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. Electronic reporting will be encouraged for those still opting to report on paper. The continuous expansion of electronic reporting requires the MEDMR to spend a significant amount of time on outreach, explaining each system to dealers and troubleshooting any issues that might arise. 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 the MEDMR does not anticipate any new fisheries be required to report via swipe card. 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. Since the 2016-2017 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 many dealers who can buy directly from harvesters, and spends significant resources tracking compliance, entering and auditing many records. In 2019, approximately 600 dealers were licensed to buy from harvesters and 193 (33%) 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, 246 (38%) chose to report on paper; 162 (25%) chose Trip Ticket (electronic reporting software developed by Bluefin Data LLC); 115 (18%) chose file upload; 66 (10%) chose key entry SAFIS; 45 (7%) were required to use VESL (swipe card reporting program developed by Bluefin Data LLC and used exclusively by MEDMR elver dealers, the number of dealers will fluctuate from year to year); 11 (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 2019 Primary Buyers in Maine

Reporting Method	Combo Dealers	State Dealers	Total Dealers
Paper	11	235	246
Trip Ticket	105	57	162
VESL Program	0	45	45
eDR Mobile	5	6	11
SAFIS Key Entry	39	27	66
File Upload	57	58	115
Quahog Electronic Logbook	5	0	5
Total Electronic*	211	193	404
Grand Total	222	428	650

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

Note: Fourteen 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 1.355 million trips for 2019 in the data warehouse, 30% 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.**

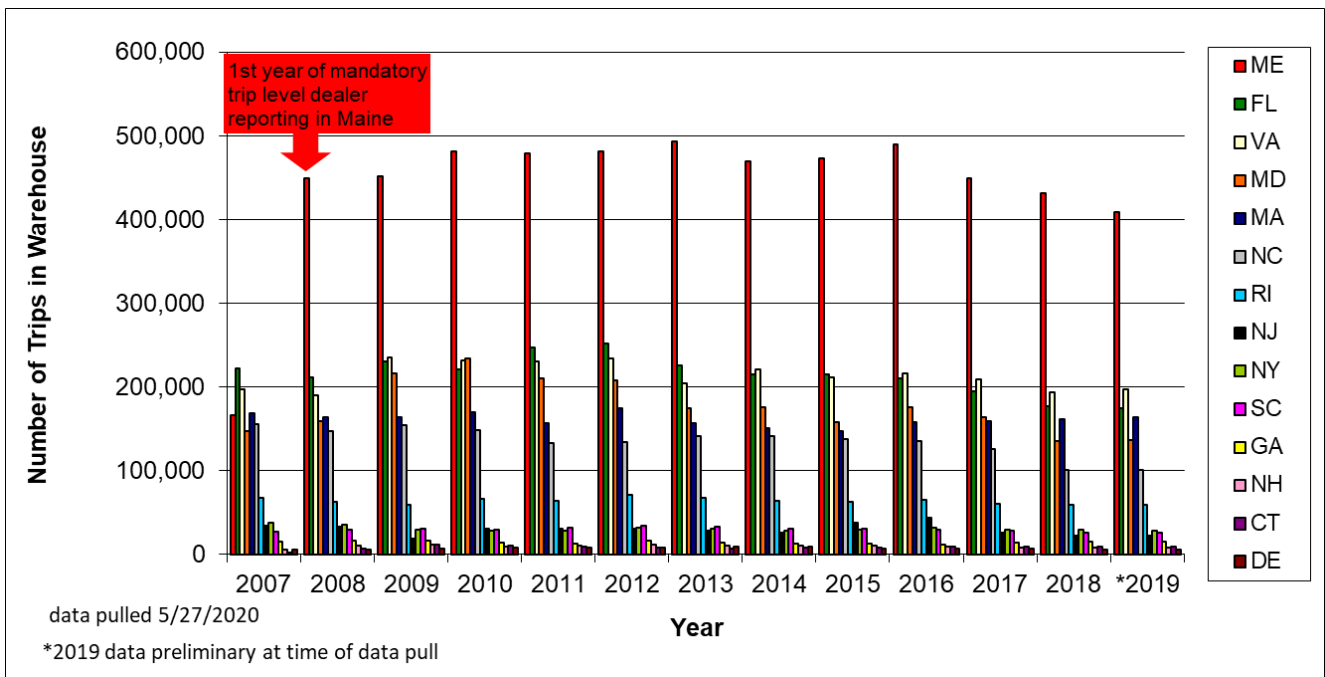


Figure 1: Number of Reported Trip Records by State Landed in ACCSP Data Warehouse

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 145% 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.

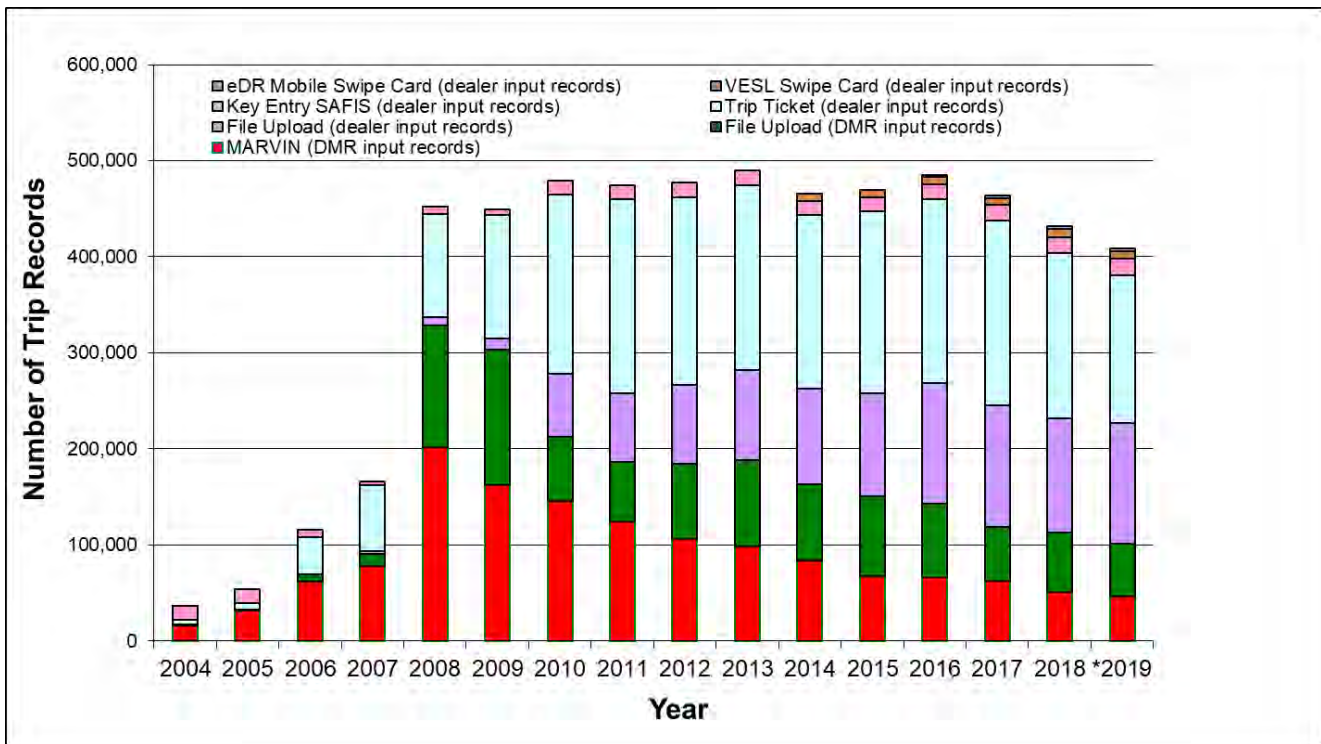


Figure 2: Number of Dealer Reported Trip Records entered in MARVIN and SAFIS

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 three of the four positions (and 8 months for the last position) 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 partial funding (four months) for one existing position: 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. **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 5/20/2020), Maine was ranked as the second highest state on the Atlantic Coast in commercial value (\$673 million) and fourth highest in whole pounds landed (206.1 million) in 2019. This comprehensive dealer reporting program is also an ASMFC (Atlantic States Marine Fisheries Commission) compliance issue for several fisheries, including 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 (four months): 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.

The FY14 through FY20 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.

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).

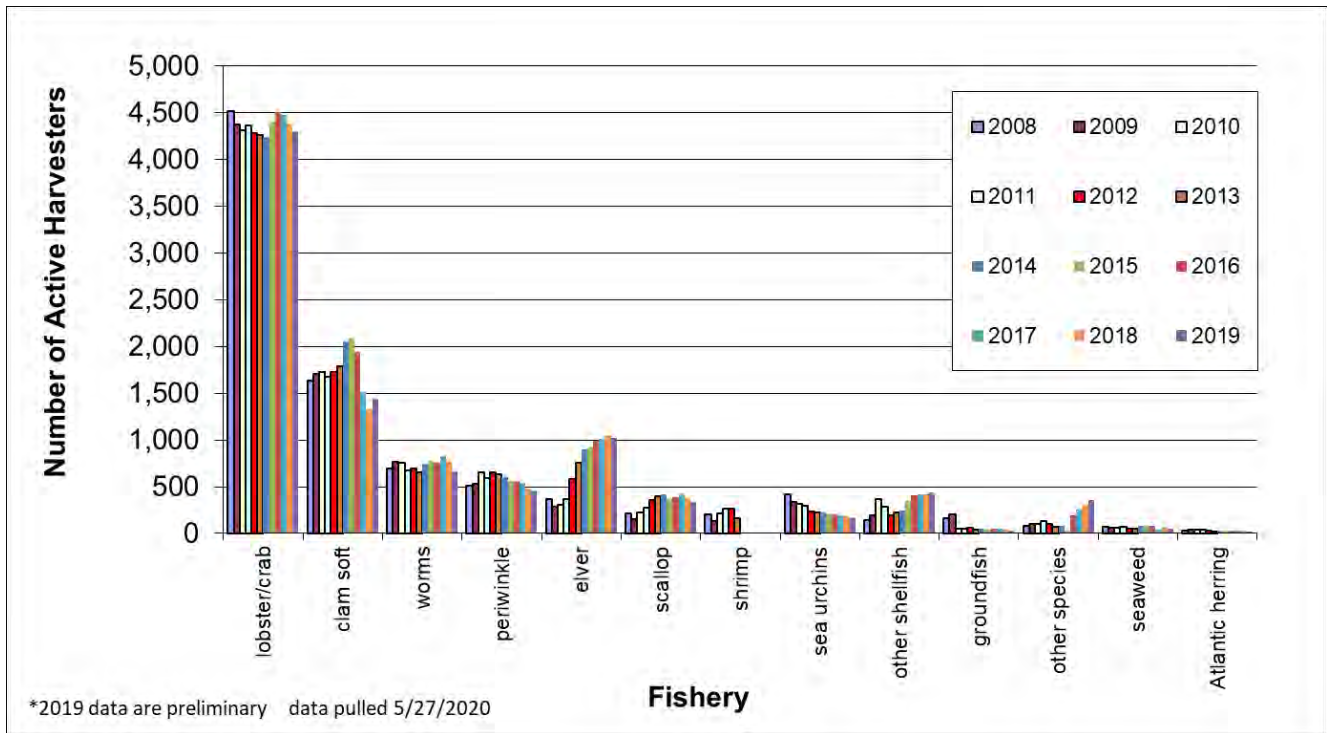


Figure 3: Number of Active Harvesters Reported in Dealer Data

This grant will allow MEDMR to complete an 14th 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 is 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 through 2020 season, 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 through 2020, 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 was a total of 18 buying stations that could have purchased directly from harvesters in 2020, 16 in 2019, 36 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 2019 – 2020 season, 11 dealer locations were set up and required to use swipe card technology to purchase sea urchins from licensed harvesters. This figure is down slightly from the 12 sea urchin dealers that reported through eDR Mobile for the 2018-2019 and 2017-2018 seasons. A total of 15 that were set up for the 2016 – 2017 season. While the initial roll-out for the first two seasons did not come without glitches, the rollout for the past two seasons (2019-2020 and 2018-2019) were very smooth. **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 past three sea urchin seasons 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. At this years Fishermen's Forum, MEDMR released its "Landings Data Portal" (https://mainedmr.shinyapps.io/Landings_Portal/) which provides the public with non-confidential data summarized by species and port. This portal also includes all historical data currently available in .PDF form on our website (<https://www.maine.gov/dmr/commercial-fishing/landings/historical-data.html>). It is the hope that providing more accessibility to our non-confidential data will reduce the amount of time MEDMR staff spend on basic queries while providing the public with better access to the data collected. 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 try to upload dealer data from MARVIN to the ACCSP data warehouse once every two months but at a minimum every 6 months. In each data feed, the following fields are uploaded to the warehouse according to ACCSP protocols: supplier dr id, supplier dealer id, supplier trip id, supplier cf id, supplier vessel id, unload year, unload month, unload day, state code, county code, port code, primary gear, data source, data supplier, reported quantity, live pounds, dollars, disposition code, grade code, unit measure, species ITIS, market code, supplier action flag, dr seq id, fishing mode. **MEDMR enters data daily and audits data weekly, so the data uploaded to the warehouse are a mix of pre- and post-audited records. MEDMR does not keep track of what percentage of the uploaded records are "reloads" due to errors, but simply reloads all the data in MARVIN to the warehouse once every three months. In addition, the data supplied by the Elver System are sent directly to SAFIS daily during elver season.**

The MEDMR does not upload data from MARVIN to SAFIS because MEDMR staff continually audit data each week, so the data that are uploaded to the warehouse are a mix of pre- and post-audited records. The reloading of data from MARVIN to the Warehouse is an automated process that the MEDMR loads into a temporary table provided by the Warehouse. If we were to perform the same upload method to SAFIS we would need the ability to mass delete records from SAFIS (which we do not have the ability to do at this time) before records are reloaded to avoid creating duplicate records. In addition, quahog 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
7. Report metadata to ACCSP												X
8. Semi-annual reports							X					X
9. Annual reports												X

Project Accomplishments Measurement:

*2019 and 2020 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	2019*	2020*
Enforce Dealer Compliance	Number of dealer licenses rejected due to failure to report	43	155	48	56	66	81	16	35	15	115	407	-	-	-	-	-	-
Enforce Dealer Compliance	Frequency of referrals to Marine Patrol due to missing reports	-	-	-	-	-	4X per yr	4X per yr	4X per yr	4X per yr	4X per yr	4X per yr through 6/1/14	-	-	-	-	-	-
Enforce Dealer Compliance	Number of compliance calls to delinquent dealers	-	-	-	-	166	297	259	451	523	420	269	208	45	37	25	25	8
Enforce Dealer Compliance	Number of suspension letters to delinquent dealers	-	-	-	-	-	-	-	-	-	-	407	567	177	876	532	421	16
Enforce Dealer Compliance	Number of dealers suspended for failing to report timely	-	-	-	-	-	-	-	-	-	-	27	57	38	32	29	89	11
Dealer Data Entry	Number of trip records by year landed in data warehouse	15,858	27,455	127,936	166,468	449,216	451,056	481,668	478,819	481,116	493,314	469,430	473,185	489,166	448,825	431,533	408,639	22,233
Dealer Data Entry	Number of positive trip records by year landed in MARVIN	15,824	31,486	61,656	76,744	197,289	159,437	143,766	124,057	105,760	98,195	83,942	67,871	66,656	62,447	51,061	46,579	4,218
Dealer Data Entry	Number of positive trip records by year landed in SAFIS	21,602	26,382	59,452	91,551	250,656	290,155	333,132	350,232	371,391	391,192	381,413	401,520	418,957	383,235	377,101	361,857	41,656
Encourage Electronic Reporting	Number of dealers submitting positive reports in SAFIS	69	78	98	142	204	230	275	291	312	328	342	330	339	329	340	320	245
Transmit Dealer Data to Data Warehouse	Frequency of data submitted by year landed	Yearly	Yearly	Yearly	Yearly	yearly to twice per month	twice per month	twice per month	twice per month	twice per month	twice per month	bi-monthly	once every 6 months	once every 6 months	once every 6 months	once every 6 months	once every 6 months	once every 6 months
Outreach	Number of custom data requests	-	11	95	155	204	269	275	281	302	419	434	569	806	720	532	477	462

MEDMR does not consider data complete until the end of the following year. This is a standard practice we have always worked under. Example: 2019 data will be considered complete in January of 2021.

Cost Summary: FY21 Managing Mandatory Dealer Reporting in Maine

10/1/2021 - 9/30/2022

Personnel^A	Description	Cost
1 Specialist I (Eileen Greenleaf)	full time position for 4 months	15,248.27
	Subtotal	15,248.27
Fringe Benefits^A		
1 Specialist I (Eileen Greenleaf)	Includes health, dental, workers comp, FICA, life insurance and retirement	9,684.42
	Subtotal	9,684.42
	Total Personnel	24,932.69
Travel		
Mileage Reimbursement	1000 miles @ \$0.44/mile	440.00
5 Overnight stays ^B	5* \$150/night	750.00
Per diem (includes extended days)	(5 overnights @ \$65/day & 12 extended days @\$24/day	613.00
	Total Travel	1,803.00
Supplies		
Filing Supplies	folders, folder labels, year labels	300.00
Other		
Printing and binding of dealer report forms	500 logbooks * \$3.50 per logbook	1,750.00
Postage for logbooks	Mail 500 logbooks * \$4.00 per logbook	2,000.00
Postage for info packets and letters	(\$0.50*300 compliance letters)	150.00
Technology (computer programs, equipment)		350.00
Telecommunication charges ^C	4 phones * \$50/mo * 12 mo	2,400.00
	Total Supplies	6,950.00
Contractual		
Trip Ticket 1 yr maintenance (Software support and upgrades)	\$1,120/mo fee * 12 mo	13,440.00
	Total Contractual	13,440.00
	Subtotal	22,193.00
Total Direct Costs		47,125.69
Indirect Costs (30%)		14,137.71
Total Award to DMR		61,263.40

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

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

C: 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)	\$9,115
Scientist III (50% time)	\$51,837
Scientist II (50% time)	\$57,484
Specialist II (75% time)	\$59,364
Specialist I (67% time)	\$51,906
Office Associate I (15% time)	\$11,704
Office Associate II (85%)	\$66,654
Elver Mobile Swipe Card Project	\$9,500

\$317,564

Budget Narrative for FY-2021 proposal:

Personnel and Fringe Benefits: The Specialist I named in the grant is Eileen Greenleaf. The position is in transition from being fully funded (100%) by this award to only 4 months then MEDMR will assume the remainder of the salary on an annual basis. This position is a Department of Marine Resources' employee. Salary and benefits for this employee 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 total cost for this position is approximately \$75,500/year. The remainder of this position is captured within the in-kind calculation.

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 mileage reimbursement rate is set by the State of Maine and are not negotiable.

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. **The breakdown of overnight stays and extended days are now split because their costs are different. The number of extended days have increased to accommodate the extra trips the Specialists have made for dealer set ups for swipe card reporting.**

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, 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. The increase in cost for FY21 reflects that in 2019, NMFS stopped their support agreement with Bluefin and shifted the cost to the dealer. The additional cost will cover all of the state-only and "combo" dealers.

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. (A new agreement was not available at time of submission, will submit new agreement before final proposal submission).

Cost Summary: FY20 Managing Mandatory Dealer Reporting in Maine

10/1/2020 - 9/30/2021

Personnel^A	Description	Cost
1 Specialist I (Eileen Greenleaf)	full time position for 12 months	\$46,207
	Subtotal	\$46,207
Fringe Benefits^A		
1 Specialist I (Eileen Greenleaf)	Includes health, dental, workers comp, FICA, life insurance and retirement	\$29,289
	Subtotal	\$29,289
	Total Personnel	\$75,496
Travel		
Mileage Reimbursement	2500 miles @ \$0.44/mile	\$1,100
5 Overnight stays ^C	5* \$150/night	\$750
Per diem (includes extended days)	(5 overnights + 5 extended days) * \$65/day	\$650
	Total Travel	\$2,500
Supplies		
Filing Supplies	folders, folder labels, year labels	\$300
Other		
Printing and binding of dealer report forms	500 logbooks * \$2.50 per logbook	\$1,250
Postage for logbooks	Mail 500 logbooks * \$4.00 per logbook	\$2,000
Postage for info packets and letters	(\$0.50*600 compliance letters)	\$300
Technology (computer programs, equipment)		\$250
Telecommunication charges ^D	4 phones * \$40/mo * 12 mo	\$1,920
	Total Supplies	\$6,020
Contractual		
Trip Ticket 1 yr maintenance	\$850/mo fee * 12 mo	\$10,200
(Software support and upgrades)		
	Total Contractual	\$10,200
	Subtotal	\$18,720
Total Direct Costs		\$94,216
Indirect Costs (30%)		\$28,265
Total Award to DMR		\$122,480

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 (7% time)	\$9,115
Scientist III (50% time)	\$51,837
Scientist II (50% time)	\$57,484
Specialist II (75% time)	\$59,364
Office Associate I (15% time)	\$11,704
Office Associate II (100%)	\$78,417
Elver Mobile Swipe Card Project	\$21,900

\$289,821

Text in bold indicate where proposal hit on ranking criteria.

Budget Narrative for FY-2020 proposal:

Personnel and Fringe Benefits: The Specialist I named in the grant is Eileen Greenleaf. The position is funded full time (100%) by this award and are a Department of Marine Resources' employee. Salary and benefits for this employee 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 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 mileage reimbursement rate is set by the State of Maine and are not negotiable.

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.

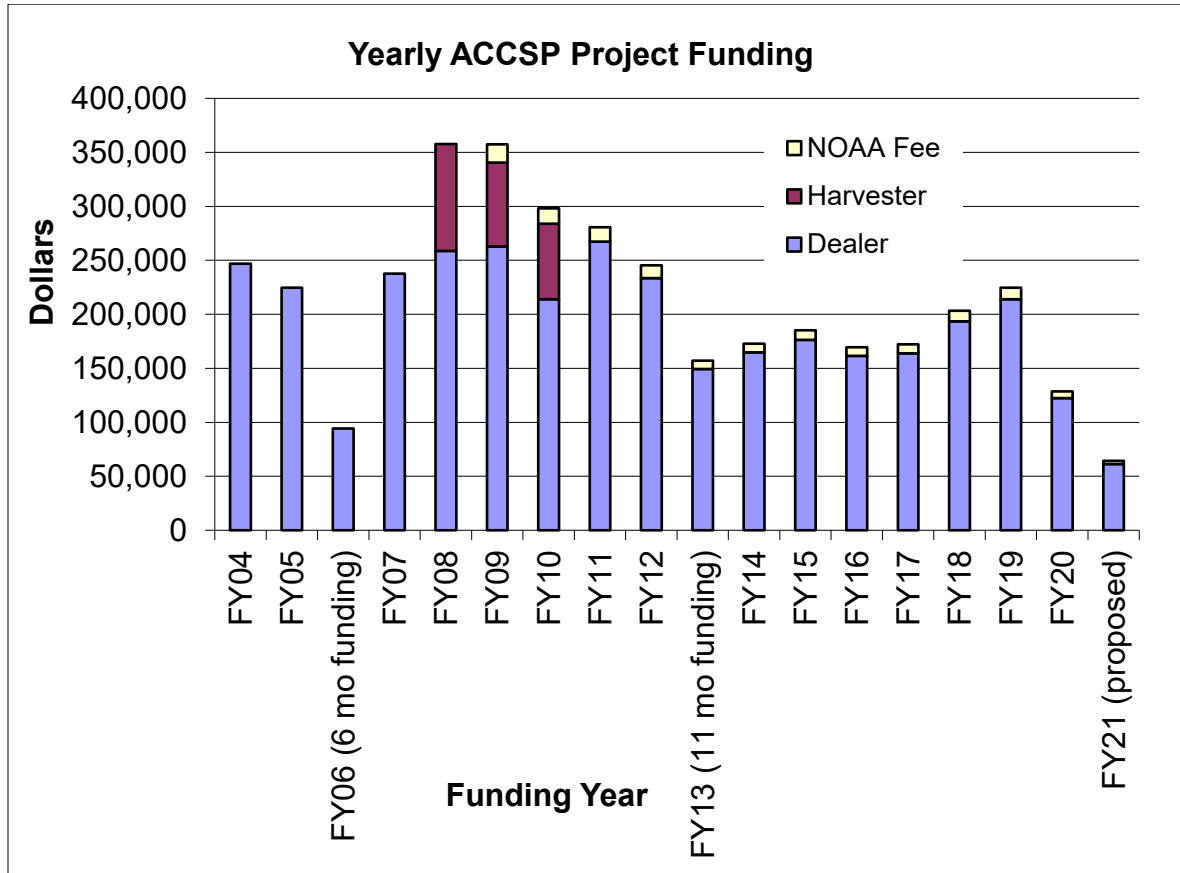
Other: Cell phones for the Specialists and the Scientists are necessary for communication and safety when on travel to dealer locations. The Scientist positions are not mentioned in the personnel costs because the positions are paid for with state money (not grant money), although staff members travel 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.

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.
2019	FY19- Managing Mandatory Dealer Reporting in Maine	\$213,951		Oct 2018 – Sep 2019	Complete 12 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.
2020	FY20- Managing Mandatory Dealer Reporting in Maine	\$122,480		Oct 2019 – Sep 2020	Complete 13 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

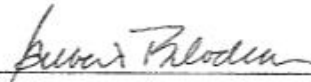
CERTIFICATE OF INDIRECT COSTS

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 3/18/20 to establish indirect cost billing rates for July 1, 2019 through June 30, 2020 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 34.30%, 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, 2018 thru June 30, 2019 to obtain a federal indirect cost billing rate for fiscal year beginning July 1, 2019.

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: 3/18/2020

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

Dept Head Signature:  Date: 03/18/2020

Name/Title Authorized Official: Patrick Keliher, Commissioner



Department of Marine Resources

INTEROFFICE MEMORANDUM

TO: FILE
FROM: PATRICK KELIHER, COMMISSIONER
SUBJECT: RATE USED FOR COST ALLOCATION
DATE: 6/5/2020

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 2019 ending June 30, 2019. The indirect cost rate proposal is 34.30%. I am authorizing the use of the lesser rate of 30% to be used during this period.

ACCSP

"FY21: Managing Mandatory Dealer Reporting in Maine"

(Oct 1, 2021 – Sept 30, 2022)


6/8/2020
Patrick Kelihier, 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.

Social and Economic (2 points): The data collected by 100% of licensed dealers collects the majority of fields required for commercial fisheries.

Data Delivery Plan (2 Points): All electronic data are submitted into SAFIS daily. 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 required elver dealers to use since the 2014 season. MEDMR paid for all start-up costs associated with this project and shared findings with ACCSP.

Funding transition plan (4 Points): through MEDMR's reorganization, the cost of two positions was absorbed by state and MEDMR is no longer asking for funding for salary and benefits. MEDMR also funds the 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 can 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) (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 31% of all records landed in the Data Warehouse. MEDMR are always looking for ways to collect data in a timely and efficient manner.

Summary of Proposal for ACCSP Ranking (Abridged Ranking Process)

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 21% of all records landed in the Data Warehouse. MEDMR are always looking for ways to collect data in a timely and efficient manner.

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 daily. 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 Point): The MEDMR are asking for the exact amount of the mandated 33% cut. The decrease was achieved by removing two thirds of a full-time position from the grant. The MEDMR still has a larger in-kind contribution than what is being asked for in this grant proposal.

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

June, 2020

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 Operations Committee, Commercial Technical Committee, Information Systems Technical Committee, Standard Codes 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, 2020

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, 2020

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 Pelagic 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 basking 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 standings, 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

JANET T. MILLS
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 17, 2020

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 2020. 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 metapopulation.

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: \$25,896.00

Submitted by:

Dr. Matthew. Cieri
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Erin L. Summers
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Portside Commercial Catch Sampling and Comparative Bycatch Sampling for Atlantic Herring, Atlantic Mackerel and Atlantic Menhaden fisheries

General Comments:

- Please review the [Funding Decision Document](#) to make certain that all guidelines have been followed. Key items like data delivery plan, budget, etc. should have headings so that reviewers do not have to search for items embedded in a narrative.
- Highlight all changes made to your initial proposal.
- Indicate (bold, underline, within text, etc.) where your proposal hits various ranking criteria. This is especially important for new projects.
- Explicitly label the percentage amount the project covers for each module [e.g., *This project aims to cover the catch and effort (45%), biological (30%) and bycatch (25%) modules*].
- Carefully label in-kind vs. match. Ask if you have questions about definitions.
- Maintenance proposals should
 - make note if this is the last year of the proposal for reviewers,
 - include previous data delivery and achieved goals as well as future plan, and
 - include full and condensed ranking summaries.

All general comments have been addressed in the proposal

Specific Comments:

- Do you foresee issues getting samples?
 - *It has been difficult with COVID-19 and low quotas. Appearance of menhaden likely means more menhaden sampling and less herring sampling*

The response for this was already located in the proposal shown below. See page 9 (highlighted section)

- Is there other funding for this project, because herring is only adequately sampled because of this project?
 - *There are no funding sources inline to take over this project. ME will likely to sample within the state, but not in other states*

The response for this was already located in the proposal. A brief summary was included in the cover letter (see below)

“This is the last year this project is eligible to be funded through ACCSP. Maine DMR will work with other states and our federal partners to secure funding by the completion of FY 21. Should a solution

not be found, herring and menhaden biological sampling will continue in Maine, but activities out of state will cease.”

Reference can also be found on pages 5, 7 and 14.

- Pg. 8 “Main” should be “Maine”

Completed

Applicant Name: Maine Department of Marine Resources (MEDMR)

Principal Investigator: Matthew Cieri, Marine Resource Scientist

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

Project Type: Maintenance Project

Requested Award Period: One year after receipt of funds

Change in Scope/Cost from Previous Year Project:

This is a maintenance proposal which has not changed its scope from the previously funded project in 2020. The overall cost is slightly less than the FY20 final award amount after adjustment to a slight lower overhead rate.

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 May 2020, except for mackerel. However, a recent benchmark for Atlantic herring found declining stock size and resulted in much lower quotas through 2020. Also, 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 covers four important species 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. These species provide a significant forage base for other fish species, marine mammals, and birds. Atlantic herring landings in 2019 (the last year that NMFS data was available) were reported at approximately 12,712 mt with an estimated value above \$3 million; the result of drastically reduced quotas. In addition to the direct economic contribution of herring landings, this fishery supports a domestic value-added industry worth approximately \$15 million, and the North Atlantic lobster fishery estimated at over \$500 million. Atlantic mackerel landings in 2019 were reported at approximately 5,190 mt with an estimated value above \$7 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 \$12 million. The Atlantic menhaden 2019 catch was ~180,000 mt valued at ~\$80 million. Generally, 35-40% 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. To improve the commercial catch sampling program, MEDMR has supported a dedicated northeast herring sampler who covers fishery landings from NJ through Maine.

The Atlantic herring fishery has recently undergone significant management changes as a result of federal action through Amendment 8. Also, a large reduction in both quotas and stock status was implemented in 2019. A recent update to the Atlantic herring benchmark assessment has also revealed a potential re-emergence of a retrospective pattern. Such a pattern for Atlantic herring tends to overestimate spawning stock biomass and underestimate 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 an 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 and ongoing discussions between Mid-Atlantic and New England Councils on incidental catch limits of Atlantic 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.

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 all areas, 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 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 the bait fishery in general. This is particularly important as the menhaden assessment team analyzes changes in selectivity resulting from changes in state-by-state allocation of the resource.

As 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. 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.

Continued bycatch sampling

During at-sea operations NMFS observers use basket sampling to document the 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 the 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 the 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 was provided upon request during the FY 2019 proposal process as a result of a request by the reviewers and will be included in the 5-year report During Sept 2019. That said the summary of the findings suggests results between portside and at-sea sampling are statistically similar for small-bodied species in high volume fisheries.

Given the results, MEDMR is now using 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. Also, 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. This may change, however, as this is the last year this project is eligible for funding through ACCSP.

In addition to sampling Atlantic herring and mackerel to develop 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 the 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 the 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 the 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, which has vastly increased 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 started the process of incorporating Maine DMR and MA DMF portside sampling into the quota monitoring system for Haddock and river herring bycatch quotas. This effort is now fully implemented with data from Maine DMR and MA DMF being incorporated fully into the process of quota monitoring

Beyond the immediate benefit to the NMFS, MA DMF, and MEDMR bycatch sampling in this fishery, the proposed project may guide 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 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 with biological sampling along with a review of project costs. The Project for FY 2020 has just ended so full analysis has yet to be completed, but the most recent semi-annual report is in Attachment 3. This report concluded that the data collected from both the and Commercial Catch Sampling Program were useful for the Atlantic herring stock assessment as well as for mackerel. Additionally, Portside Bycatch Program quantified incidental catch particularly River herring; and that these dates are starting to be used to monitor the River herring/Shad bycatch quotas for the Atlantic herring fishery.

Approach:

It should be noted that for both bycatch and biological sampling, ME DMR expects the continuation of full sampling effort despite lower Atlantic herring quotas. While herring quotas have and will continue to decline, the number of trips should be only slightly less. This in part, due to ASMFC imposed effort controls, as well as the sampling frame. The sampling frame is designed on a trip basis, rather than by volume landed. Thus, it is anticipated that the number of trips is likely to remain similar to 2019 levels, but that the volume of each trip might decline. Additionally, any reduction in herring bycatch and biological sampling is expected to be off-set by increased sampling effort in menhaden and mackerel. In particular menhaden landings have increased dramatically in the state of Maine over the past few years, requiring more effort to sample effectively.

As of June 2020, this project is being completed under the Spring 2020 social distancing guidelines as per the Governor's Office for the State of Maine. Should social distancing measures remain in effect in FY 2021, no impact on this project is anticipated.

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. Samples 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 because 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 inaccurately 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.

ASMFC sample requirements state "One 10-fish sample (age and length) per 300 metric tons landed for bait purposes for ME, NH, MA, RI, CT, NY, NJ, and DE. While minimums have been met, a more rigorous sampling design by gear, time, area have not been conducted as only 1 year (2017) of sample/landings information has been officially released as the large-scale fishery is quite new to the state.

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 wharves 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 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 from January through May and one or two trips per week during the June-Oct period (when the fishery is most active) is proposed. Trip selection will be haphazard, 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, as well as to provide bycatch information to the NEFMC Plan Development Team, NMFS, and other interested parties. Data on River herring/Shad as well as Haddock are routinely provided to the Regional Office at NOAA for use in quota monitoring activities.

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 where sampling should take place.

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

Data Management:

Data collected through this study are regularly entered into the MARVIN biological database housed at MEDMR. Data are first entered into MARVIN and run through Quality Assurance/ Quality Control (QA/QC) routines to ensure accurate reporting. Data can then be utilized for running an analysis comparing Portside and at sea observers (see Attachment 7) and/or stored until needed for the assessment or use by managers.

Metadata will be created with ArcCatalog 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 2021 Budget & Narrative

FY2021 Budget (State FY22) 7/1/21 - 6/30/22		
Cost Summary: Portside bycatch sampling		
Personnel Services	Description	ACCSP
None		
All Other		
Travel Expenses		
PROJECT VEHICLE 12 months	\$295/mo	\$ 3,540.00
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
		\$ 16,520.00
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		\$ 800.00
		\$ 3,400.00
Total Direct Costs		\$ 19,920.00
Indirect Costs (30%)		\$ 5,976.00
Award to DMR		\$ 25,896.00

Partner Contribution – For ACCSP Purposes

Scientist IV (10% time)	\$10,000
Scientist III (25% time)	\$15,000
Scientist I (100% time)	\$90,000
Specialist I (25%)	\$12,000
Total	\$127,000

Future Project Needs:

This project is designed to benefit all states from Maine to New Jersey, ASMFC, and federal management agencies including the NEFMC, NMFS, and the Mid-Atlantic Fishery Management Council (MAFMC). While accessory funding is available for FY 21 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. Given that this is the last year of ACSP funding for this project and should a funding solution not be found, this project will terminate at the end of FY 2021.

Budget Narrative:

Personnel and Fringe Benefits: Because of state funding resources, we are not requesting to fund either the Scientist I (Chris Ura-neck) or the Specialist I (Lisa Pinkham). Since the last proposal, the Specialist II position occupied by James Becker has been occupied by Chris Ura-neck and upgraded to a Scientist I. This change to State funding of personnel is a shift in the project which reduces overall costs to ACCSP.

Travel and vehicles

Travel is requested for 35 overnight trips and 20 extended days. The exact number and length of trips will depend on the 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. The 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 pinpoint landing events.

Other Lab and Sampling supplies include baskets for sampling, scale calibration, rain gear, waterproof 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.

Attachment 1: FY 2020 Budget & Narrative

FY 2020 Budget & Narrative

FY2020 Budget (State FY21) 7/1/20 - 6/30/21		
Cost Summary: Portside bycatch sampling		
<u>Personnel Services</u>	Description	ACCSP
None		
<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		\$ 500.00
Lab Supplies		\$ 800.00
		\$ 3,400.00
Total Direct Costs		\$ 19,980.00
Indirect Costs (30.7%)		\$ 6,135.86
Award to DMR		\$ 26,115.86

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

Budget Narrative: 2020

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 a shift in the project from mostly ACCSP funded, to mostly State funded.

Travel and vehicles

Travel is requested for 35 overnight trips and extended days. The exact number and length of trips will depend on the 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. The 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 pinpoint landing events.

Other Lab and Sampling supplies include baskets for sampling, scale calibration, rain gear, waterproof 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.

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 commercial catch sampling of the Atlantic herring, Atlantic mackerel, and Atlantic menhaden fisheries	\$84,451	portside bycatch survey 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	\$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

	Atlantic Menhaden (<i>Brevoortia tyrannus</i>) fisheries			
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 a 5% level.
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 a 5% level.
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	herring menhaden and mackerel portside bycatch and commercial catch sampling and bycatch at a 5% level.
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	herring menhaden and mackerel portside bycatch and commercial catch sampling and bycatch at a 5% level. Final analysis Ongoing
2019	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	ongoing
2020	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	\$26,116	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. Additionally, River herring and shad, caught as bycatch in the Atlantic herring and menhaden fisheries are near the top of the Biological Matrix.

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 7 of the Atlantic herring FMP is calling for an added increase in bycatch monitoring via portside sampling for the Mid-water trawl fleet. It is ranked 9th out of 18 on the “Quartile of Bycatch Matrix”.

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

Project Quality Factors:

Regional Impact (5 Points): all partners will benefit, as all 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 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 ensure accurate reporting. The biological sampling data is uploaded to the ACCSP data warehouse regularly.

Potential secondary model (4 Points) Data collected through this proposed project is used in the 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 that 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: FY2019 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**

Research Performance Progress Report (RPPR)

Grant Period: July 1, 2019 – December 31, 2019

Final Report? No

Submitted by:

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

1/8/2020

ACCOMPLISHMENTS:

What were the major Goals and Objectives?

1. Continuation of the portside bycatch survey
 - a. Expand the coverage of landed herring and menhaden monitored for bycatch.
 - b. Increase the percentage 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 on occasion truck, to the dewatering tower and or facility. As the fish were sorted, the bycatch was removed and set aside. Each boatload 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.

Portside bycatch 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 trip has been pumped from the vessel. Bycatch species were sorted and weighed from each basket, and the total amount of each species from the basket sample is expanded to the entire hold using the captain's estimate of the trip size.

$$w_s = \frac{N}{n} \sum w_{s,i}$$

Where, w_s = weight of species s in from basket i , N = number of possible baskets from hold, n = number of baskets sampled from hold, s^2 = sample variance of species s from baskets.

All individuals (of the entire sample or sub-sample) were measured and recorded on a length frequency log. A random sub-sample ($n=50$) was taken if necessary.

It is important to note that for the purpose of this progress report all non-targeted species (i.e. anything but the target species) were referred to as bycatch. This includes species such as 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.

What was accomplished under these goals?

1) Major activities

Portside bycatch studies were performed on herring trips in Portland, ME (Figure 1). Herring and menhaden commercial catch samples were collected off trips from Davisville, RI, Gloucester, MA, Seabrook, NH, Portland, South Portland, Harpswell, Sebasco, Pine Point and Rockland, ME.

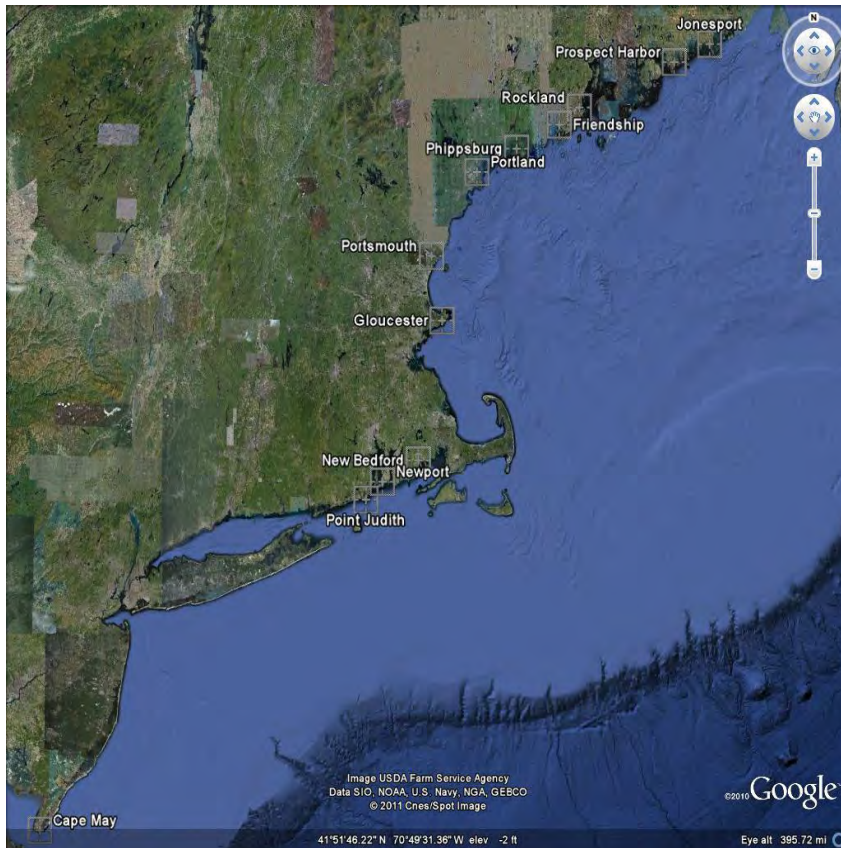


Figure 1: Range and locations of sampling and portside bycatch studies.

2) Specific Objectives

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

Conduct portside bycatch studies on Atlantic herring trips, from ME to NJ, and Atlantic menhaden in ME, and increase the percent coverage from this time in 2018.

3) Significant Results

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

Herring

Three portside bycatch studies were conducted on US herring landings from July 1, 2019– December 31, 2019. All three were conducted on purse seiners (PS). For this specific period, the US herring fishery landings were approximately 4,837 MT, down from 29,000 MT for this time in 2018 (NOAA Quota Monitoring Website 2020) and a total of 218 MT of herring was sampled for bycatch, down from 678 MT, equating to 4.50% sampling coverage, up from 2.23% this time last year (Table 1a). The total weight of documented bycatch was 9.64 MT. The total percent of documented bycatch was 4.43%, up from 4.07% for this time in 2018. The overall mean percentage of bycatch per individual study was 4.43%, with a standard deviation of 4.47%, a minimum of 0.62% and a maximum of 9.35% (Table 1b). Three species of bycatch were documented (Table 2).

Herring bycatch studies were conducted on landings from NMFS Statistical Area 514 for this particular time frame (Figure 2).

Atlantic mackerel (*Scomber scombrus*) made up the bulk of the documented bycatch, about 95.93%, up from 75% this time in 2018, and about 4.25% of the sampled herring landings, up from 1.16% (Table 2).

Silver hake (*Merluccius bilinearis*) accounted for roughly 2.93% of the overall bycatch, down from 6.70% and around 0.13% of the lot of herring sampled, slightly up from 0.10% of the bycatch for this time in 2018 (Table 2).

River herring (a category of anadromous fish, containing both Alewife (*Alosa pseudoharengus*) and Blueback herring (*A. aestivalis*) comprised about 0.55% of the bycatch and about 0.02% of the sampled herring, down from 3.02% and 0.03%, respectively (Table 2).

Squids, a combination of longfin and Northern shortfin (*Doryteuthis pealeii*, *Illex illecebrosus*), held around 0.30% of the overall bycatch, up from 1.69%, and about 0.01% of the sampled herring, no change since this time in 2018 (Table 2).

Atlantic needlefish (*Strongylura marina*) were documented as bycatch for the first time in this project history. They made up 0.3% of the overall bycatch and .01% of the herring lot (Table 2).

Note that spatial information and all length frequencies for all species other than squids will be provided in the next annual report due in 2020.

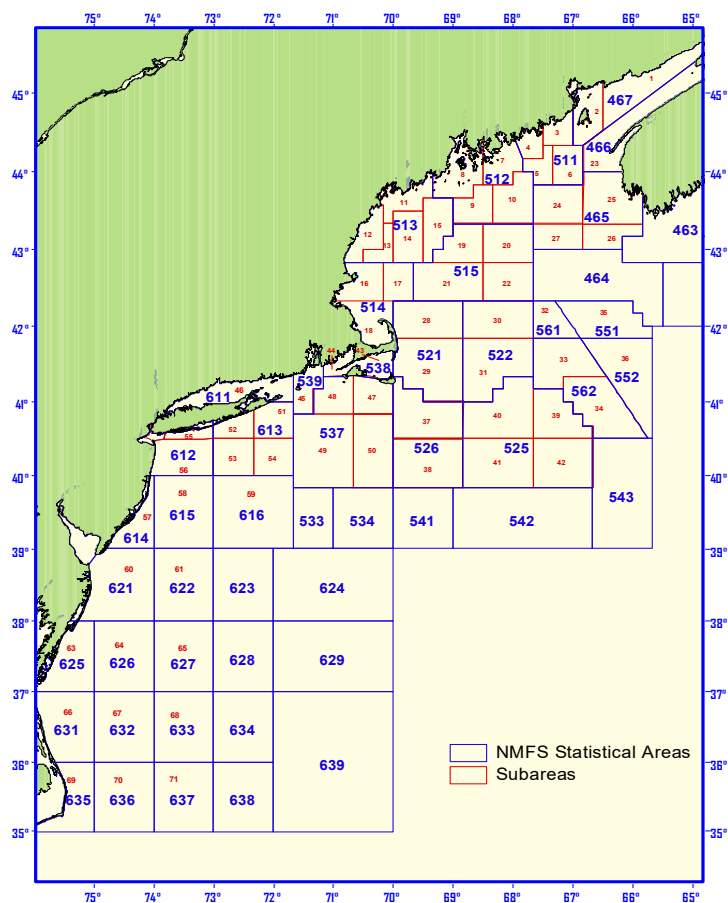


Figure 2. NMFS Statistical Areas.

Table 1. Herring bycatch data, July 1, 2019–December 31, 2019.

a. Bycatch Data by Total Landings and Total sampled	
Total Landings MT	4,837
Total Sampled MT	217.74
% of Total Landings Studied	4.50
Total Bycatch MT	9.64
% Bycatch in Total Sample	4.43
b. Bycatch Data per Sampling Event	
Mean % Bycatch	4.43
Maximum % Bycatch	9.35
Minimum % Bycatch	0.62
Standard Deviation	4.47

Table 2. Documented herring bycatch including incidental species, January 1, 2019–June 30, 2019

Species	Total Weight Kg	% Total Bycatch	% Bycatch in Herring
Atlantic mackerel	9,249.952	95.929	4.248
Silver hake	282.181	2.926	0.130
River herring	52.911	0.549	0.024
Squids	28.762	0.298	0.013
Atlantic needlefish	28.713	0.298	0.013
Total	9,642.518	100.000	4.428

Atlantic menhaden

No menhaden bycatch studies were conducted from July 1, 2019 – December 31, 2019, as that the only dewatering box equipped for portside bycatch sampling for this fishery had pressure problems specific to menhaden from the Transvac, preventing access to the overhead bulkhead for basket interval sampling. The bulkhead needed to remain closed to compensate the additional water pressure needed to pump the larger size menhaden versus herring from the fish hold into the bait trucks.

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

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

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

Herring Sampling

Thirty six herring samples were collected from July 1, 2019–December 31, 2019, down from forty three for this time period in 2018. Samples came from catches in the GoM, off Cape Cod and on Georges Bank. Approximately seventy eight percent of the herring samples were collected from Maine, 16.67% from MA, 2.78% from NH, and 2.78% from RI (Figure 3). These samples were transported to DMR where they were processed for length, weight, age (using otoliths), gender, gonad maturity and spawn condition, fecundity, and stomach fullness.

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

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

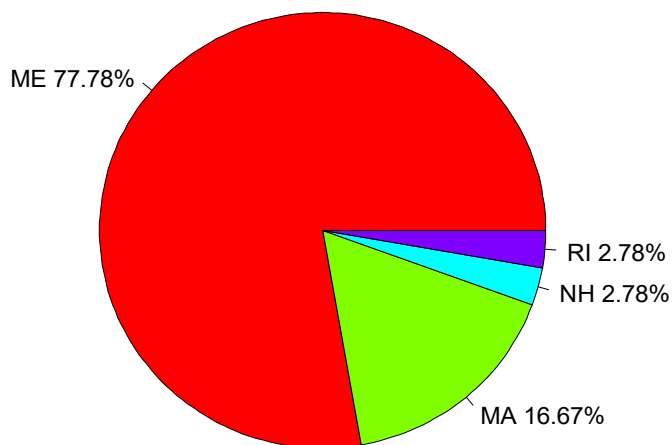
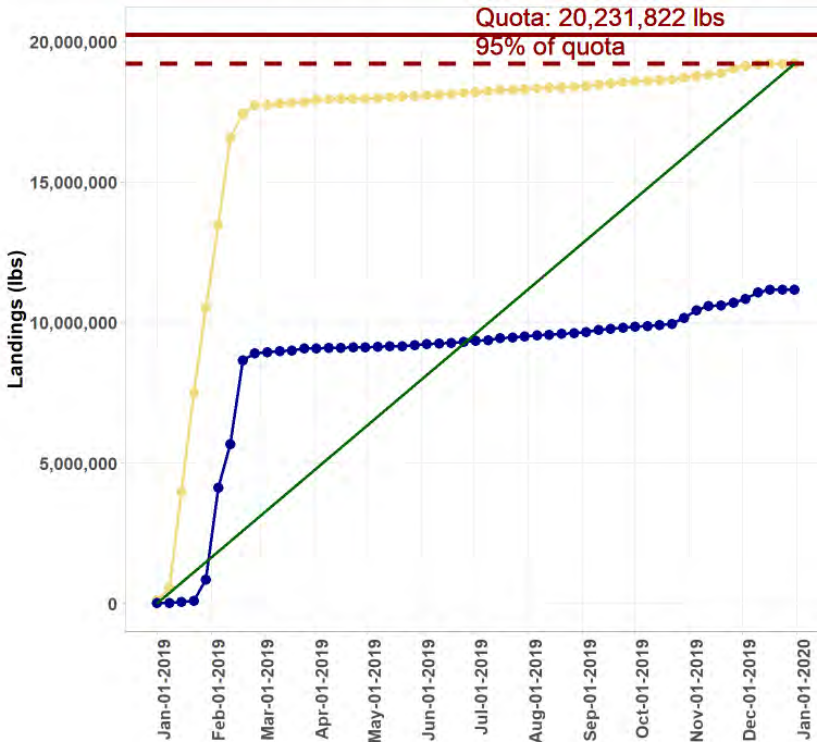


Figure 3. Percentage of herring samples collected by state, July 1, 2019–December 31, 2019.

Atlantic Mackerel Sampling

The Atlantic mackerel season is a winter fishery that typically starts in December and ends in the spring. The bulk of the 2019 mackerel landings were between January and March, thus opportunity to conduct sampling on this species was minimal, and zero samples were collected during the timeframe of this report (Figure 4).



Atlantic mackerel landings for the 2019 fishery (NOAA Fisheries, 2020).

Atlantic Menhaden Sampling

Twenty two menhaden biological samples were collected, up from eight this time in 2018, eighteen by PS and four by gill net (GN). All were caught in Area 513 (Figure 2) and landed in ME, nine were collected in Harpswell, six were in Portland, three in Sebasco, two in Pinpoint, one in South Portland and one in Boothbay Harbor. Samples were delivered to DMR where they were processed for length, weight, and age (via scale patches). Data were entered into a DMR database, and scale patches were mailed to Beaufort, NC, for aging.

What opportunities for training and professional development has the project provided?

Nothing to report

How were the results disseminated to communities of interest?

The herring spawn data gathered from the commercial catch samples were shared with the Atlantic States Marine Fishery Commission (ASMFC) for spawn monitoring for Maine, NH, and MA <http://www.massmarinesfisheries.net/herring/>. The herring and menhaden data are used for each of their stock assessments <http://www.asmfc.org/species/atlantic-herring>. The herring bycatch data were used for bycatch quota monitoring for ASMFC and NMFS https://www.greateratlantic.fisheries.noaa.gov/ro/fso/reports/reports_frame.htm.

What do you plan to do during the next reporting period to accomplish the goals and objectives?

The project will continue with the same objectives; collecting bycatch data and biological samples from the herring, mackerel and menhaden fisheries. An increase in the frequency of bycatch studies, in particular with herring should occur in 2020 with the upgrade and outfitting of at least three more sampling dewatering boxes in Maine with OSHA approved scaffolding, handrails and ladders or stairs, allowing for more safe access to offloads for data collection.

PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS:

What individuals have worked on this project?

PIs/PDs: James Becker, Matthew Cieri, Amy Dumeny, Christopher George, Christie Labbe, Rochelle Nutting, Erin Summers, and Carl Wilson.

Name: James Becker
Total Number of Months: No Change
Project Role:

Contribution to Project:

Name: Matt Cieri
Total Number of Months: No Change
Project Role:

Contribution to Project: No Change

Name: Erin Summers
Total Number of Months: No Change
Project Role:

Contribution to Project:

Name: Carl Wilson
Total Number of Months: No Change
Project Role:

Contribution to Project:

Name: Amy Dumeny
Total Number of Months: No Change

Project Role:

Contribution to Project:

Name: Christopher George
Total Number of Months: No Change
Project Role:

Contribution to Project:

Name: Christie Labbe
Total Number of Months: No Change
Project Role:

Contribution to Project:

Name: Rochelle Nutting
Total Number of Months: No Change
Project Role:

Contribution to Project:

Has there been a change in the active other support of the PD/PI(s) or senior/key personnel since the last reporting period.

James Becker from DMR has been the field coordinator and lead PI since the last reporting period of July 1, 2014 – June 30, 2019. The remaining personnel (listed above) and their duties have remained unchanged.

What other organizations have been involved as partners?

MA DMF has successfully continued to combine their own portside bycatch sampling program with DMR to collectively achieve larger sampling coverage of both the herring and mackerel fisheries.

NMFS combines our portside bycatch data with their at-sea observer program to estimate bycatch and discards for both the herring and mackerel quota monitoring systems. Plus, data are compiled for both stock assessments.

The Atlantic Coastal Cooperative Statistics Program (ACCSP) use our herring spawn data, gathered from the commercial catch samples to overlook, monitor and administer the spawn forecast model used for the corresponding closures within the GoM.

Have other collaborators or contracts been involved?

Herring commercial catch data are shared with the Gulf of Maine Research Institute (GMRI) to be applied for spawn monitoring and future regulation.

IMPACT:

What was the impact on the development of the principal discipline(s) of the project?

The bycatch program for herring and mackerel plays a significant role in not only establishing a monitoring system to protect bycatch and incidental species, but influences herring and mackerel fishing landings throughout the year. For example, when a certain amount of river herring (Alewife and Blueback herring) are landed via herring or mackerel trips and reach a set quota, portions of these directed fisheries are closed until the quota resets in the following year. This protects these nontargeted species from overharvesting, but impacts the revenues generated for these directed fisheries.

The spawn information gathered from the herring commercial catch samples during the summer and fall are used to monitor closures necessary to protect the spawning aggregates. For example, when 25% of the female herring collected from herring vessels fishing Areas 511 – 514 (Figure 3.) reach a certain threshold and ratio of the ovary weights to body weights, portions of the inshore fishery are closed for at least 30 days to ensure a healthy successful spawn and fertilization of the benthic eggs, necessary to protect the future recruitment of the herring fishery.

Furthermore, the biological data collected via the commercial catch sampling program of herring, mackerel, and menhaden are directly used for their stock assessments and catch-at-age matrices. These data are used to estimate the size and age structure, 2019-2021 fishing quotas, recruitment, and ultimately the health of their population.

What was the impact on other disciplines?

Nothing to report

What was the impact on the development of human resources?

Nothing to report

What was the impact on teaching and educational experiences?

Nothing to report

What was the impact on physical, institutional, and information resources that form infrastructure?

Nothing to report

What was the impact on technology transfer?

Nothing to report

What was the impact on society beyond science and technology?

Bycatch data collection and biological sampling have influenced fishing behaviors. With catch cap monitoring of river herring, shad and haddock in two directed fisheries, implemented partly by our sampling program, fishing locations can be chosen accordingly. To prevent closing areas of these fisheries due to choke species, the fishing spatial activity can shift to areas where the cumulative bycatch is lower and less likely to shut down landings. For example, if it is known that portside sampling is to occur on a certain herring or mackerel offload, the captain may decide to fish an area that typically contains less haddock, to prevent closing the fishery.

A similar spatial shift occurs during the rolling spawn closures within the GoM. As that herring typically spawn from north to south, harvesters move out of the areas that are approaching peak spawning as to not land significant amounts of ripening females, to halt samples that may trigger a closure. Harvesters may also fish a certain spawn closure, providing DMR with spawn samples and a real-time look at the status of the ovaries in an effort to close the area as soon as possible. This could allow it to open that much earlier for harvest in the fall, to align with better markets and demand for bait.

Bycatch quotas and spawn closures can close large areas of these fisheries for harvest and directly impact the revenues and economies associated from the income the crew and captains generate up the chain to the dealers and other related businesses. As such, a both direct and indirect impacts are created on the relevant stakeholders.

What percentage of the award’s budget was spent in foreign country(ies)?

Nothing to report

CHANGES/PROBLEMS:

Nothing to report

SPECIAL REPORTING REQUIREMENTS:

Nothing to report

BUDGETARY INFORMATION:

Will be provided in next final report

PROJECT OUTCOMES

All objectives and goals were met for this report period. 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 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 herring, mackerel, and menhaden fisheries. However, the species encountered as bycatch varied spatially by NMFS Statistical Area, and conclusions drawn regarding the spatial nature of the bycatch encountered should be interpreted cautiously due to the small sample sizes. 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 during only handful of trips.

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 boatloads 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 DMR, MA DMF, and the NEFOP at-sea program offer more statistically sound estimates of bycatch and allows for the increase of sampling coverage across these fisheries. These efforts will complement and supplement, but not replace the NEFOP at-sea observer program. This bycatch survey represents a unique opportunity to collect data in an inexpensive but efficient and accurate way.

The data collected from both the Portside Bycatch Program and Commercial Catch Sampling Program were useful for the herring stock assessment for 2018 and the upcoming assessment update in 2020. In-particular the herring samples used for the catch-at-age matrix helped to determine spawning stock biomass, the 2019 - 2021 area fishing quotas and specifications, and spawn closure regulations. 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 2019/2020 herring and mackerel fisheries.

Attachment 4

Instructions for Sampling Atlantic Menhaden from the Maine Bait Fisheries

Acquiring the 'Sample'

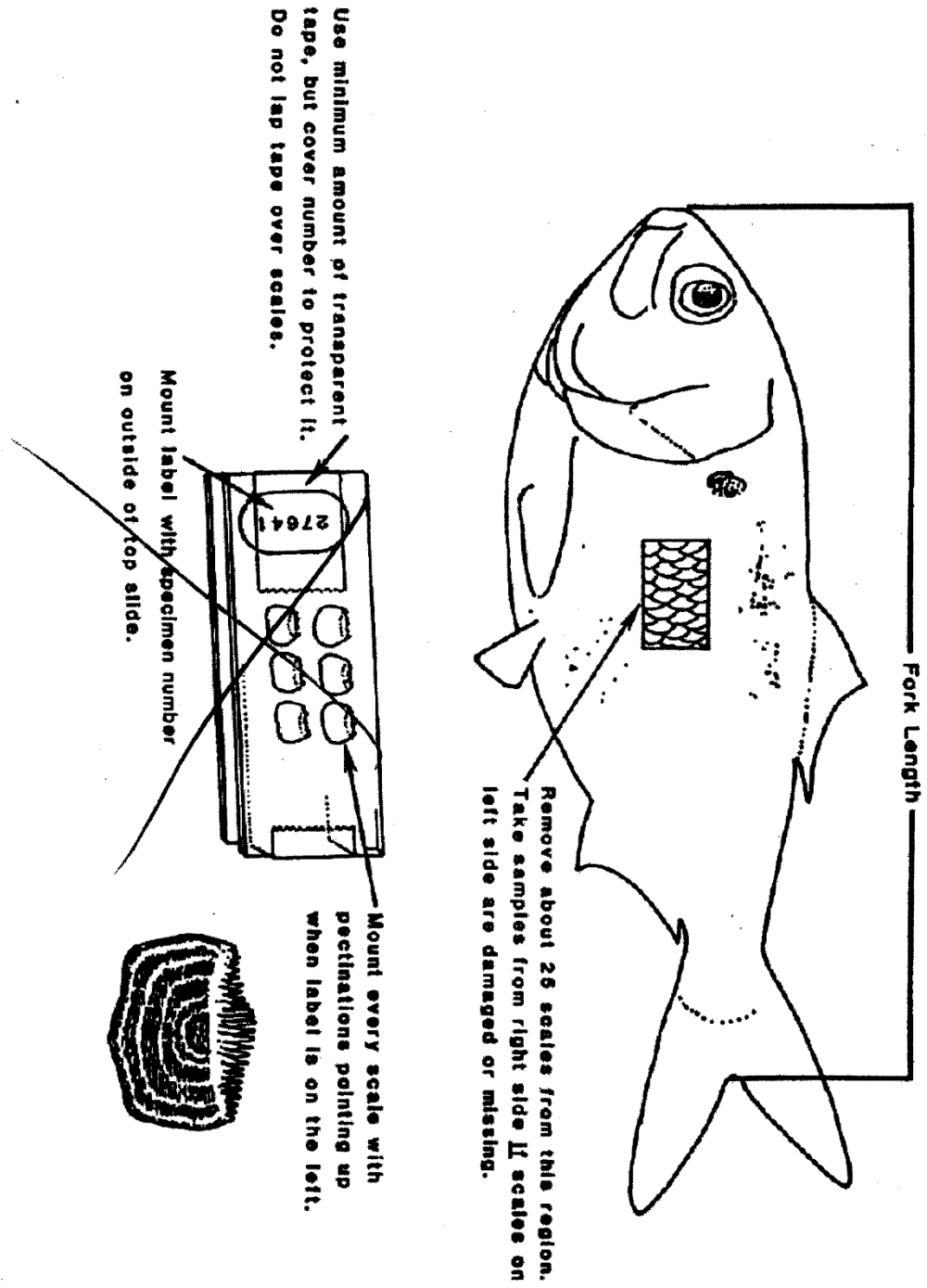
- Ideally, scoop a bucket of menhaden at random from the top of the fish hold.
- If the menhaden have already been packed out in flats or fish boxes, take 15-20 fish at random from the container.
- If available, record date of capture, location of capture, and vessel name. Usually we write this info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

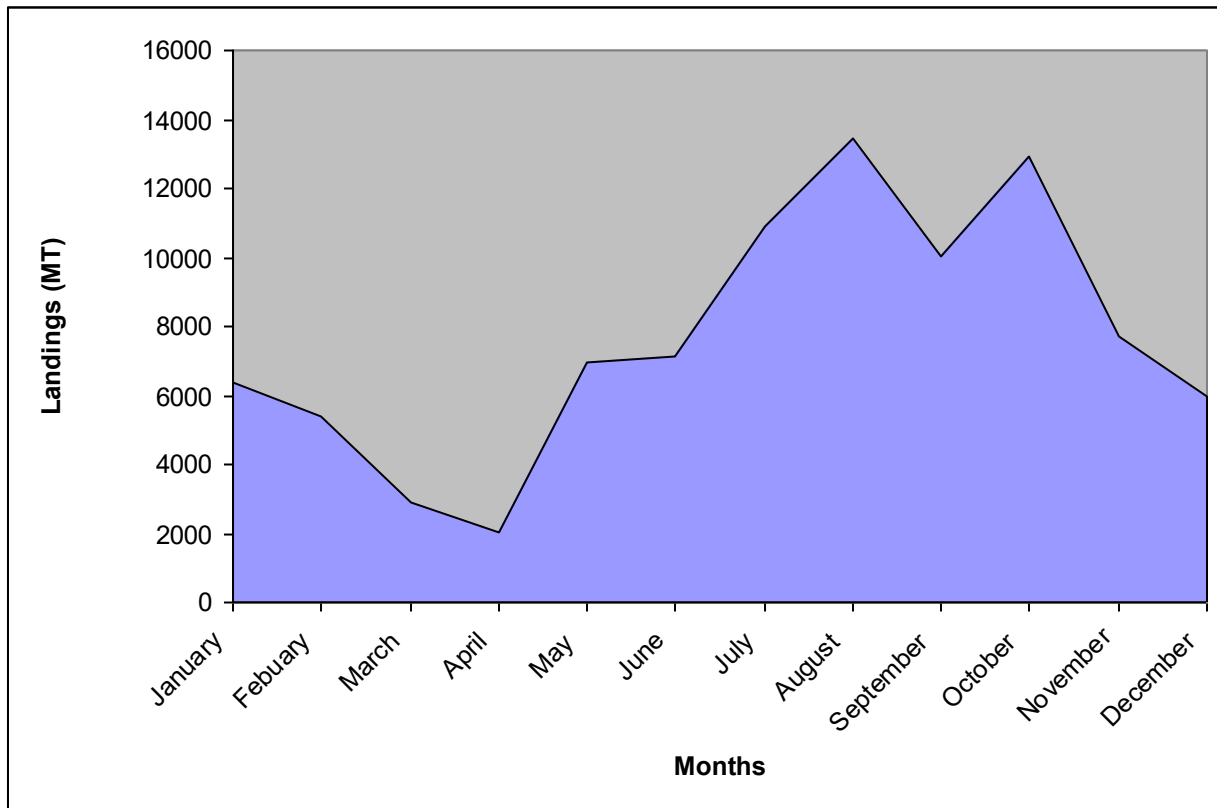


Figure 1: Five year average (2004-2008) of monthly herring landings

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, than **a basket sample needs to be taken every 15 mins.**

If the catch composition from the bushel baskets is 99% Atlantic herring, than 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

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

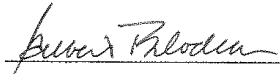
CERTIFICATE OF INDIRECT COSTS

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 3/18/20 to establish indirect cost billing rates for July 1, 2019 through June 30, 2020 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 34.30%, 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, 2018 thru June 30, 2019 to obtain a federal indirect cost billing rate for fiscal year beginning July 1, 2019.

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: 3/18/2020

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

Dept Head Signature:  Date: 03/18/2020

Name/Title Authorized Official: Patrick Keliher, Commissioner

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
Maine Department of Marine Resources
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West Boothbay Harbor, ME 04575
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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 haul 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**

**FY21: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from
the State of Rhode Island**

Submitted By:
Nichole Ares
Rhode Island Department of Environmental Management
Division of Marine Fisheries
3 Fort Wetherill Rd
Jamestown, RI 02835
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Applicant Name: Rhode Island Department of Environmental Management,
Division of Marine Fisheries

Project Title: **FY21: Maintenance and Coordination of Fisheries
Dependent Data Feeds to ACCSP from the State of Rhode
Island**

Project Type: Maintenance

Requested Award Amount: \$27,521

Requested Award Period: FY 2021 (August 1, 2021 to July 31, 2022)

Primary Program Priority: Commercial and Recreational Catch and Effort Module

Date Submitted:

Project Supervisor: John Lake, Supervising Biologist, john.lake@dem.ri.gov

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

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

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

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 125 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.

Recreational data is collected. RI ACCSP staff is also responsible for outreach and support of the voluntary eLOGBOOK program; this SAFIS application is used to enter and house recreational catch and effort data. Additionally, in 2019, RIDMF established mandatory party and charter trip level electronic reporting. This increases the amount of recreational data collected and will provide a better understanding of the party and charter industry through accurate trip counts, census effort data, discard information, and catch rate data.

In addition to recreational and commercial data, in 2020 RI now requires trip level aquaculture reporting into SAFIS. Previously, a single data point was supplied to ACCSP for

inclusion in the spring data upload for each species. Now, dealers must report each aquaculture purchase to SAFIS eDR, improving our understanding of the aquaculture industry in RI. This data will show seasonal trends, provide a better understanding of the economic impact of the industry, and allow for better tracking of human health concerns such as vibrio monitoring.

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 as well as supplemental horseshoe crab and dockside data for the Fisheries of the United States via ACCSP. Previously, aquaculture data was provided in this supplemental data transfer, but as of the 2020 season this data is being collected through SAFIS eDR and therefore is already available within the ACCSP dataset. 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 2021, 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 and the newly required census party and charter data; it enhances and adds to the existing MRIP dataset with regarding landings and discards** and 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 benefits to regional partners; including increased coordination between state and federal program partners, increased technical assistance, as well as 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 of both wild harvest and aquacultured species is entered directly into SAFIS eDR by the dealer twice a week and immediately available to ACCSP. Catch and effort (logbook) data (both commercial and party/charter) is submitted to SAFIS eTRIPS throughout the year, typically data entry is completed by March of the following year. **Once entered, all 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), and finfish port sampling. **Currently, the dockside sale, horseshoe crab, and lobster 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 active, RI data will be submitted.

Approach:

All licensed seafood dealers in RI (approximately 125 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. Rhode Island Department of Environmental Management (RIDEM) Division of Law Enforcement becomes involved when a dealer has repeatedly violated compliance 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 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 are kept up to date in SAFIS tables through weekly updates via the SAFIS Management System (SMS).** 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 and validations from fishermen, academics, stock assessment scientists, 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 (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 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 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 1700 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. Fishermen with a VTR requirement report to NMFS. Fishermen without a VTR requirement report to RIDMF and can elect to report either via the 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 regulation to submit reports. 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.

Fishermen without a VTR requirement must submit catch and effort information directly to RIDMF either via a paper logbook or through eTRIPS/eTRIPS Mobile. **All fishermen who report via the logbook need to submit quarterly catch and effort paper logbooks. They are**

provided postage-paid envelopes by RIDMF to ensure timely return of completed logbooks. 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.

Since 2012, RI fishermen have had the ability 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 53% of all fishermen with a reporting requirement, a large increase as 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.** **While electronic reporting is not mandatory per any regulatory agency,** RIDMF will continue outreach for eTRIPS to continue to increase the number of fishermen using electronic reporting. **If electronic reporting becomes mandatory, RI will ensure to meet the requirements and transition fishermen to electronic reporting.**

RIDMF also does outreach and support for eTRIPS-Mobile and will 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. RI has also adopted eTRIPS-Mobile as a mandatory reporting method for a pilot aggregate landing program, further increasing its use. In 2018 there were 39 users; however due to the ease of use, GARFO acceptance, and use in RI pilot programs 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.**

All reports directly entered by the fishermen electronically 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 audit process and 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 RI 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. The dockside sales logbook is mailed to the 264 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.** RI staff is needed to oversee data entry, perform quality checks, and transfer the sale data to ACCSP in the proper format annually.

Reporting of all party and charter trips became mandatory in 2019. Per RIMF Regulations, all trips must be reported electronically through either eTRIPS or eTRIPS Mobile within 48 hours of landing. Staff are needed to train fishermen, audit data, check compliance, and provide support to the industry. **This data will also provide a clearer picture of the party/charter fleet in RI and allow more flexibility within the regulations for the fleet.**

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. The eLOGBOOK data also contains lengths of both fish harvested and released. This data was useful for all partners in the **bluefish stock assessment, as discard data was used in the 2015 benchmark assessment.**

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, lobster, and Jonah crab. **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 2016, RI utilized primarily contract employees through ASMFC to manage the ACCSP data collection program funded through ACCSP. In February 2016, RIDMF hired a state full-time employee to fill the ACCSP Coordinator duties. 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 \$94,582, 71% 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 2021 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 RI 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 manages eLOGBOOK and party and charter reporting, 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 a concrete plan is not in place to take over funding, **different options are being proposed including: the continued move to electronic reporting, licensing restructure, and other means to fund the program. 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 Marine Fisheries 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 2019 by application	eDR: 23,922 state only trips eTRIPS: 23,403
Support to RI Licensed Seafood Dealers	Dealer trainings, site visits, and other outreach in 2019.	3 new dealers 2 site visits Phone call and email correspondence was made
Quota Monitoring	Number of possession limit changes and early closures during 2019 determined through accurate SAFIS data	30 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.
2019	FY19: 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.
2020	FY20: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	55,043	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

Bold Comments indicate sections that help with the ranking process

SAFIS Support to RI Dealers	X	X	X	X	X	X	X	X	X	X	X	X				
Quota Monitoring	X	X	X	X	X	X	X	X	X	X	X	X				
eTRIPS support to industry	X	X	X	X	X	X	X	X	X	X	X	X				
eTRIPS logbook Data Entry	X	X	X	X	X	X	X	X	X	X	X	X				
Data Feeds to ACCSP	X	X	X	X	X	X	X	X	X	X	X	X				
Semi and Annual Report Writing							X						X	X	X	X

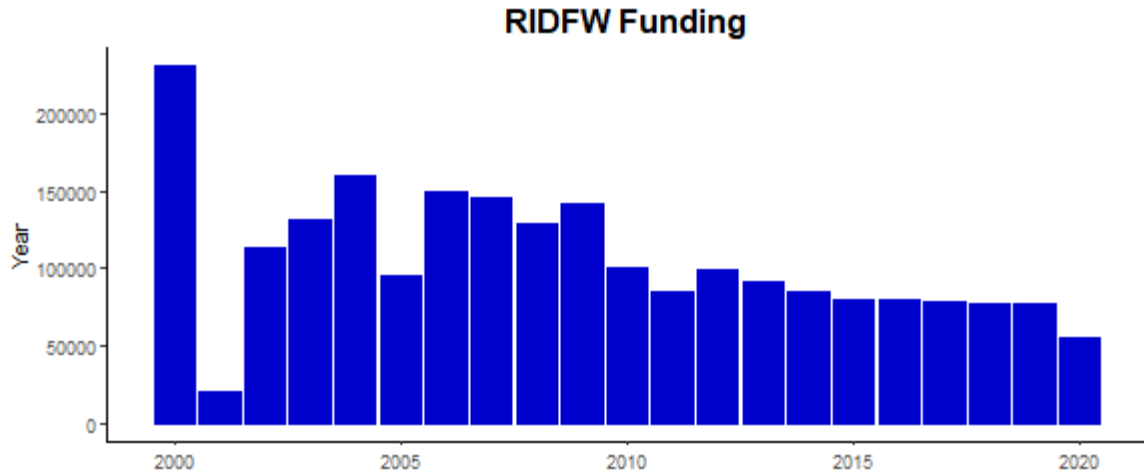


Figure 1. RIDMF past funding from ACCSP.

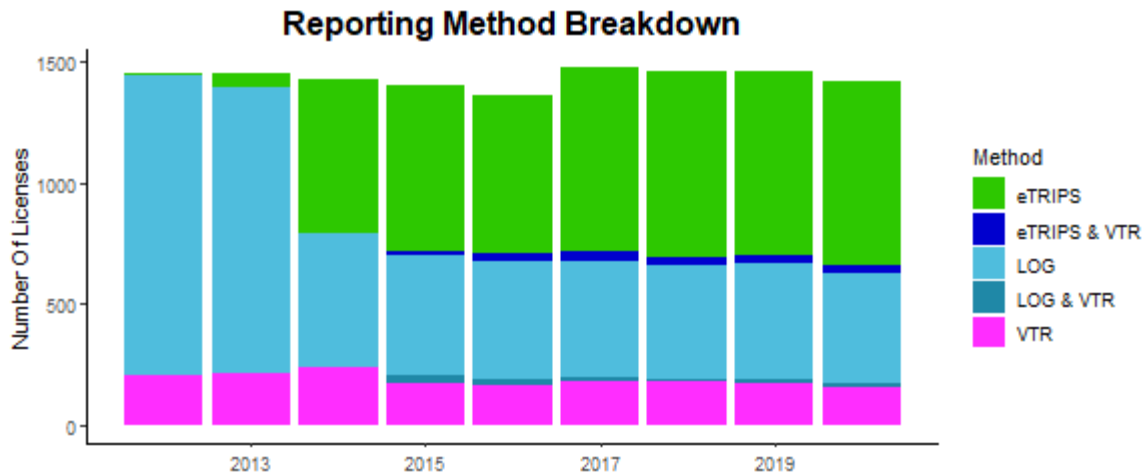


Figure 2: Reporting Method Breakdown

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, 2018

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 2021 (August 1, 2021 to July 31, 2022)

Item	ACCSP Share	Direct State Share	Total
Supervising Biologist (FTE 3%)	\$0	\$3,655	\$3,655
Principal Biologist (FTE 10%)	\$0	\$10,781	\$10,781
Principal Biologist (FTE 27%)	\$14,525	\$18,177	\$56,568
Seasonal Interns - 2 (RIDEM 40% each)	\$8,553	\$3,868	\$12,422
Indirect Charges (RIDEM FTE 19.25%)	\$4,443	\$7,022	\$24,365
Total Personnel	\$27,521	\$43,503	\$71,025

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	\$0	\$3,000	\$3,000
Total Supply	\$0	\$23,557	\$23,557

TOTAL:

Item	ACCSP Share	Direct State Share	Total
Total Direct Charges	\$27,521	\$67,060	\$94,582
Percentage	29%	71%	

COST DETAILS:

Description of Budget categories and expenses for this project.

a. Salary

Bold Comments indicate sections that help with the ranking process

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:** 12% ACCSP funded position to act as support to the ACCSP Coordinator; 12% of salary and fringe benefits for one year = \$14,525.
- ii. **Seasonal Interns:** Support for 2 Seasonal Interns to assist with data entry 40% of annual salary = \$8,553.

From RIDEM as match:

- i. **Supervising Biologist:**
Approximately 3% of annual salary and fringe benefits equals \$3,655.
- ii. **Principal Biologist:**
Approximately 10% of annual salary and fringe benefits equals \$10,781.
- iii. **Principal Biologist**
- iv. **Principal Biologist:** Approximately 15% of annual salary and fringe benefits equals \$18,177.
Seasonal Interns:
Support for 2 Seasonal Interns to assist with data entry.
Approximately 17% of annual salary \$3,868.

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%

c. Travel

\$3,000 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 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. None.

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 for maintaining current website and creating a website section dedicated to online reporting, including the creation training materials. 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

There will be no contractual under this grant.

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 2020 is 19.25%.

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.
- 100% of all party and charter captains report trip level data, which is entered into SAFIS.
- 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-** 71% 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 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 data entry. 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**Budget FY 2020 (August 1, 2020 to July 31, 2021)****PERSONNEL COSTS:**

Item	ACCSP Share	Direct State Share	Total
Supervising Biologist (FTE 10%)	\$0	\$12,312	\$12,312
Principal Biologist (FTE 50.9%)	\$0	\$50,159	\$50,159
Principal Biologist (FTE 34%)	\$38,391	0	\$38,391
Assistant Admin Officer (Contractual 50%)	\$0	\$21,139	\$21,139
Seasonal Interns - 2 (RIDEM 40% each)	\$8,554	\$10,692	\$19,246
Indirect Charges (RIDEM FTE 17.25%)	\$8,098	\$16,267	\$24,365
Total Personnel	\$55,043	\$110,569	\$165,612

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	\$0	\$3,000	\$3,000
Total Supply	\$0	\$23,557	\$23,557

TOTAL:

Item	ACCSP Share	Direct State Share	Total
Total Direct Charges	\$55,043	\$134,126	\$189,169
Percentage	29%	71%	

Appendix B: Curriculum Vitae for Principal Investigator

Nichole L. Ausfresser Ares

Nichole.Ares@gmail.com

(978) 833- 4017

Education

Roger Williams University

Bristol, RI

Bachelor of Science in Marine Biology

Dec. 2010

Minor in Mathematics

Atlantic States Marine Fisheries Commission

October 2015

Introduction to Stock Assessment

Intermediate Stock Assessment Training

December 2017

Work Experience

Rhode Island Department of Environmental Management

February 2016-Present

Principal Biologist

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

Atlantic States Marine Fisheries Commission

May 2014- February 2016

Fisheries Specialist 1- ACCSP Coordinator

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

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:

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and

Thomas Heimann, MSc
Commercial Fisheries Research Foundation
P.O. Box 278
Saunderstown, RI 02874
theimann@cfrfoundation.org

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

Requested Award Amount: \$132,064

Requested Award Period: August 1, 2021 – July 31, 2022

Principal Investigators: Jason McNamee, PhD, Deputy Director of Natural Resources, Rhode Island Department of Environmental Management, N.David Bethoney, PhD, Executive Director, Commercial Fisheries Research Foundation; Thomas Heimann, MSc, Research Biologist, Commercial Fisheries Research Foundation

Date Submitted: June 15, 2020

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 and has been in continuous operation since. Through the first three years of funding provided by the ACCSP, the Research Fleet sampled 22,631 black sea bass from 1,615 locations throughout the inshore and offshore fishing grounds of southern New England and the Mid-Atlantic. The Research Fleet will continue data collection through July 31, 2021 (Year 4 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 July 31, 2022.

The goal of the proposed project is to continue the Research Fleet's sampling efforts in developing a 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 reaching into 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 the existing fishery dependent data collection program that utilizes fishing vessels and specially designed sampling applications 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 selectivity; 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 further refine seasonal characterizations of northern Atlantic black sea bass biology and distribution;
- 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;
- Maintain and evolve the On Deck Data app to meet the data needs of scientists and the logistical needs of participant fishermen;
- Communicate black sea bass biosamples data to ACCSP every six months;
- Conduct internal analyses of the project database to: 1) Assess the selectivity 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 inherent value 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 a 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 2019). 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 (2019), high priority data needs for black sea bass include: increased sampling of commercial landings and sample size of observed charter trips. The Black Sea Bass Research Fleet has, and will continue to with continued funding, provide exactly this type of information. 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 ever evolving 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.

As such, the ACCSP Biological Review Panel identified expanded collection of biological data as a top priority for improving the black sea bass stock assessment (ACCSP 2019).

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 a robust time series of data. This project aims to address this need by maintaining 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.

Ultimately, the proposed project will help 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 ACCSP.

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 follow the CFRF's existing data communication practices with ACCSP;
- A demonstrated, cost effective, method to collect data for a commercially and recreationally important species 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 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, 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. These data will be made available in a format that is compatible with the ACCSP database to encourage data 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 four 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. The CFRF will maintain open communication with the ACCSP data coordinator and will remain available to provide any necessary metadata along with data submissions.

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:

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 have been incorporated into the ACCSP black sea bass biosamples database. The CFRF has maintained the semi-annual data submission to the ACCSP and submits data in June and December of each

sampling year. 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.

Currently, the Research Fleet collects a suite of effort data alongside all biosamples data. To present, the effort data has not been included with past data submissions as the biosamples database at ACCSP was not set up for its inclusion. Efforts will be made by the CFRF and RI DEM to incorporate and share all effort data, including retroactively, with the ACCSP.

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; 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 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, data delivery to ACCSP 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 as needed. More information about the accomplishments of the project are available on the project website: www.cfrfoundation.org/black-sea-bass-research-fleet.

If funded, during the fifth year of the project, the CFRF and RI DEM will maintain all fishing vessels supported through year-4 funding from ACCSP. It is important to maintain the current members of the Research Fleet for as long as possible. Ultimately, when data will be applied to the stock assessment or validated in regards to other sources of black sea bass data, having participation from the same vessels throughout the time series will allow project staff to investigate potential vessel effects evident in the data. When possible, and if funds permit, the Research Fleet may be expanded in the same manner, through open application calls, for new

vessels. The sampling rate of the Research Fleet is dictated by the highly seasonal variation of black sea bass catch and bycatch in various fisheries across southern New England. As a result, the sampling rate by the Research Fleet fluctuates from year to year. If funds become available due to normal fluctuations in the Research Fleet, project Co-PIs will evaluate the possibility of expanding the Fleet to include more vessels.

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, On Deck Data prompts gear-specific data entry for Research Fleet participants (Table 1). On Deck Data was originally launched during the first year of the project and has received various improvements and quality of life updates in each funded year since to streamline 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)				

On Deck Data 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 an application developer to address any issues that arise and to update On Deck Data to maintain functionality. Application maintenance is a constant task, as tablets regularly receive operating system updates that may impact On Deck Data functionality. On Deck Data has to receive regular updates to specifically allow for compatibility with

accessing and uploading data via wireless internet on new version of the Android operating system. Further, as tablet models receive minor hardware changes between annual models reformatting some screens of On Deck Data to display properly across multiple tablet models is anticipated.

The Black Sea Bass Research Fleet will continue to follow the fishery-dependent sampling protocols 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 25%, Biological 50%, Bycatch 25%. 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. The intention of data collection is to provide a biological characterization of the catch and discards of black sea bass from a variety of gear types in the SNE/MAB regions. The estimated effort devoted to the catch and effort module is based upon sampling during the open black sea bass fishing season, sub periods open to commercial fishery exist nearly year-round. Further due to the multi-gear nature of the Research Fleet, every vessel interacts with black sea bass as targeted catch or bycatch differently even during open periods. 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. Due to the low daily allocation through the summer and fall seasons in Rhode Island, there is still a large portion of bycaught black sea bass sampled after vessels have hit their daily limits.

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 at least July 31, 2022. The Black Sea Bass Research Fleet currently consists of fourteen 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), F/V Sweet Misery (Gillnet, Lobster Pot), F/V Lady Clare (Lobster Pot), F/V Debbie Sue (Trawl), F/V Harvest Moon (Fish Pot, Lobster Pot), F/V X-Terminator (Fish pot, Gillnet), F/V Blue Label (Fish Pot, Gillnet), and F/V Brooke C (Lobster/Crab pot, Fish Pot, Scallop Dredge) . 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 further south than the above-mentioned vessels and interact with black sea bass year-round but primarily during the winter, however various vessel repairs and unrelated injuries have reduced the amount of data collected by these two vessels. The F/V Lady Clare and F/V Brooke C fish

offshore and interact with black sea bass heavily in the winter and spring months, however encounters them less frequently through the summer and fall. The F/V X-Terminator and F/V Blue Label both fish seasonally and mostly inshore in stat area 537 and were brought into the Fleet to expand the number of gear replicates in the gillnet and fish pot fisheries. F/V Debbie Sue, fishes the further south of all Research Fleet Members and consistently completes trips into the MAB region south of Hudson Canyon. In total, the Black Sea Bass Research Fleet has sampled black sea bass from 9 distinct statistical areas, 537, 539, 616, 613, 611, 615, 533, 525, and 622.

Participant fishermen will use Samsung Tab A tablets pre-programmed with On Deck, described above, to efficiently and accurately record and transmit fishery dependent 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 42 trips per month, for a total of 504 trips over twelve months. Given the population inferences implied in the project objectives and the 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.

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, fishery sampling frequency exhibits high seasonal fluctuations. Due to the multi-gear nature of the Research Fleet, the proposed sampling targets do not adequately represent the fishing schedules for each gear type. For example, due to the low daily catch limit (50 pounds per day per vessel for most of the year) 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. Further, many of the larger trip vessels are mainly retaining their daily or trip limits of black sea bass from bycatch while targeting other species, which again leads to instances of fishing ceasing prior to 50 black sea bass caught. 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.

At each sampling location, participant fishermen will use On Deck Data 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, and 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 across the Research Fleet 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 and has been implemented in each year since.

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 and operating in Federal water. 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 years of the project and will be extended through subsequent years of data collection and expanded to cover new Research Fleet participants.

Internal Data Analysis:

As described above, the Black Sea Bass Research Fleet was able to operate effectively and deliver data in an efficient manner during the first three years of data collection, sampling over 22,637 black sea bass from 1621 locations between Narragansett Bay to the northern end of the MAB and east to George’s Bank from November 30, 2016 to June 1, 2020. 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 steering committee members and 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, 2019.

Total Black Sea Bass Sampled	22,637
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Percent Male	30%
Percent Female	42%
Percent Unknown	28%
Minimum Size (cm)	2
Maximum Size (cm)	63
Average Size (cm)	31.6
Percent Discarded	69%
Percent Retained	31%

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 previous funding years of the project exhibit 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 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 1). The range of the discarded length further supports this, showing that even the largest of sampled black sea bass (receiving the highest market value) are often discarded.

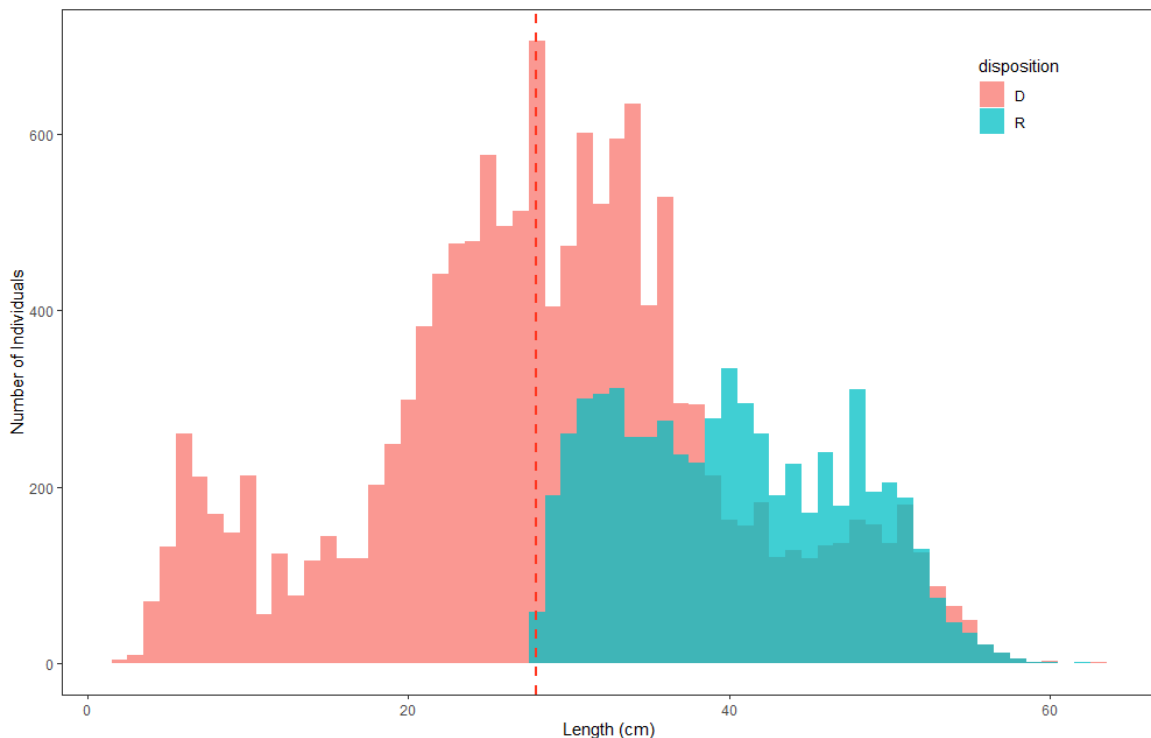


Figure 1. Size spectra of black sea bass sampled by the Research Fleet from November 30, 2016 to June 1, 2020. Red bars indicate discarded (D) fish. Blue bars indicate retained (R) fish. Red-dashed line represents the Rhode Island minimum legal size of 11 inches (27.94 cm).

When comparing gear selectivity between the different gear types represented within the Research Fleet, trends between discarded and retained black sea bass are apparent (Figure 2 and 3). Trawl gear interacts with the largest range in sizes of black sea bass of all the gear types represented. Rod and reel (commercial and charter), fish pot, and lobster pot all exhibited nearly as wide a range of size interaction with black sea bass as trawl gear types, however did not interact with the smallest of size classes of black sea bass as frequently and therefore had higher mean total length. Of the three gear types previously mentioned, rod and reel exhibited less variance in size interaction due to relative lower presence (and ultimately absence) of smaller size class of black sea bass. Gillnet appears to be in a distinct grouping of its own and exhibits the highest selectivity amongst all represented target gear types as well as interacting with the largest size classes of black sea bass exclusively. Conch pot and oyster aquaculture are similarly selective compared to gillnet gear however interact almost exclusively with the smallest size classes of black sea bass. Interestingly, in the previous year of data collection the Research Fleet sampled the first instances of black sea bass, of legal size, retained from conch pots.

These trends which have become apparent from just the first few funding years 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.

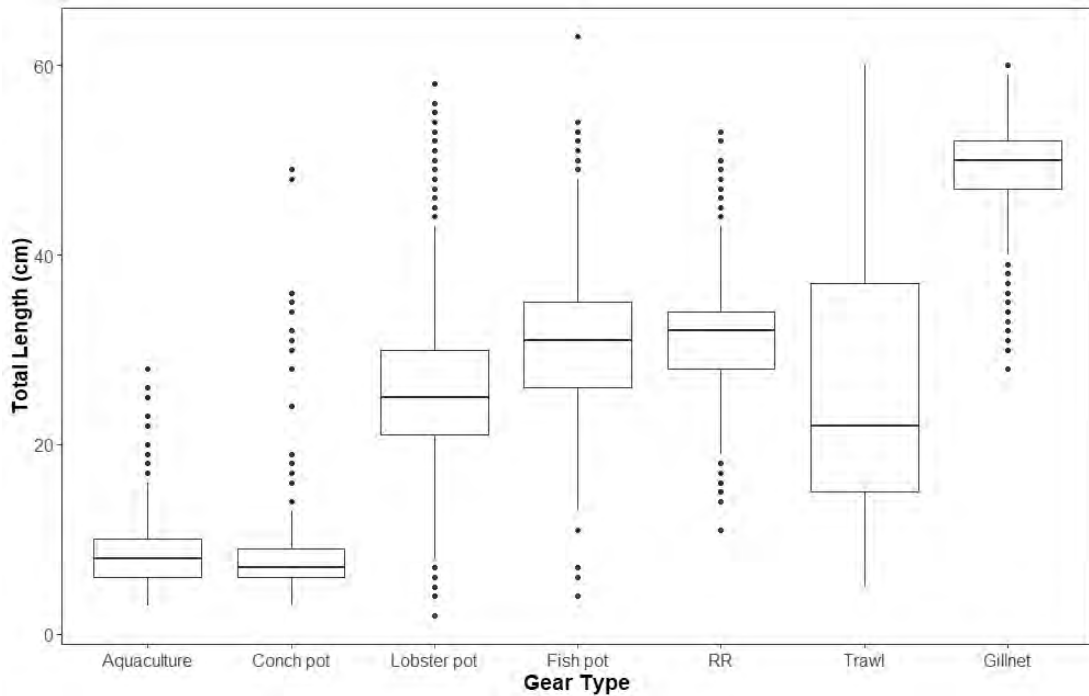


Figure 2. Size selectivity of discarded black sea bass sampled by each gear type represented within the research fleet. From left to right, gear types are as follow; oyster aquaculture, conch pot, lobster pot, fish pot, rod and reel (commercial and charter), trawl, and gillnet.

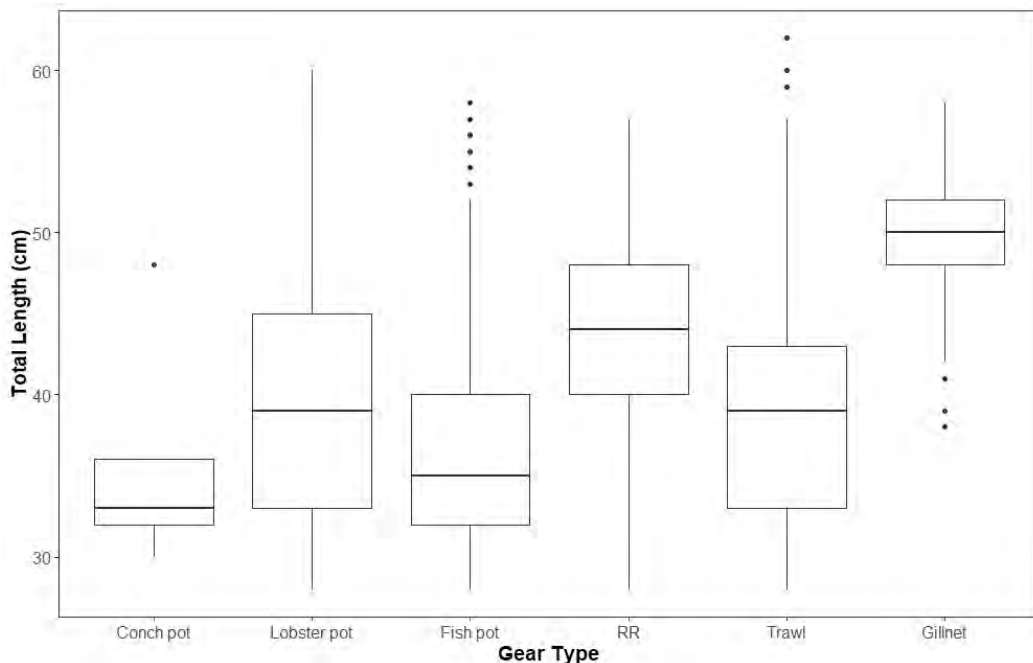


Figure 3. Size range of retained black sea bass sampled by each gear type represented within the research fleet. Note, aquaculture gear type is absent from this graph because no black sea bass have been retained from this gear type.

During the proposed year of the project, the project team will focus primarily on the refinement of analyses previously established for application to the stock assessment including: size spectra, sex ratios, catch per unit effort (CPUE), black sea bass retention and discard structure, seasonal activity of Research Fleet, and gear selectivity. 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 is the selectivity (min, max, mean length) of different gear types (trawl, fish pots, gillnet, lobster/crab pot, rod and reel) that harvest black sea bass? Year-5 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 selectivity, spatial and seasonal sex ratio regression models, and catch rate patterns will all be updated based on the protocols established in prior years 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 prior years, 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 the collaborative Research Fleet approach for fishery dependent data collection; 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 various state, regional, and 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 prior funding years, 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, managers, and scientists. The same annual Fleet meetings held through previous years of funding will be continued during 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.

Milestone Schedule:

Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13-15
Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Final report writing and submission of report and all project data to ACCSP
Apply for extended EFP	Distribute EFP to Fleet when obtained	Distribute EFP to Fleet when obtained		Apply for RI DEM Permits								
Maintain sampling gear and buy new sets	Maintain sampling gear	Maintain sampling gear	Maintain sampling gear	Maintain sampling gear	Maintain sampling gear	Maintain sampling gear	Maintain sampling gear	Maintain sampling gear	Maintain sampling gear	Maintain sampling gear	Maintain sampling gear & collect after sampling	
Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	
Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	
		Quarterly reports to Fleet Members			Quarterly reports to Fleet Members			Quarterly reports to Fleet Members			Quarterly reports to Fleet Members	
				Submit data to ACCSP		Write progress report and submit to ACCSP				Submit data to ACCSP		
Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	

Project History Table:

<u>Funding Year</u>	<u>Title</u>	<u>Original Project Dates</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	\$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	\$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
2019	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	June 1, 2019 – May 31, 2020	\$132,749.00	\$169,033.00	Maintained the Research Fleet data collection of catch, effort, bycatch, and biological data in the black sea bass fishery in the SNE/MAB region and expanded the Research Fleet by two fishing vessels
2020	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	June 1, 2019 – May 31, 2020	\$132,097.00	\$157,735.00	Maintained the Research Fleet data collection of catch, effort, bycatch, and biological data in the black sea bass fishery in the SNE/MAB region and expanded the Research Fleet by two fishing vessels

Project Accomplishment Measurement (Metrics and Achieved Goals):

Project Goal	Metric 1	Metric 2	Metric 3	Metric 4	Metric 5	Metric 6	Metric 7
Collection & communication of biological and fishery data for BSB	Upkeep of ODD, CFRF server, and MySQL database	Support of 14 Research Fleet Members	Twelve months of biological BSB and fishery data collection by Fleet	Collection of up to 25,200 BSB records, 504 record of catch/discards, and 504 session/effort data by Research Fleet	Transfer of collected data into MySQL database	Distribution of all quarterly reports to Fleet Members	Submission of biological and fishery data to ACCSP and other managers
Reduce uncertainties in BSB stock assessment	Increase number of gear replicates in non-trawl fishery	Provide BSB data from areas and times of year currently under sampled	Distribution of project data to managing stakeholders at federal, region, and local level	Utilization of data by BSB stock assessment working group	Explore fishery dependent index of abundance for BSB using Fleet data		
Asses spatial & temporal patterns in BSB fishery and catch	Analyze catch trends between years, gear types, and locations of Fleet sampling	Monitor discard structure between years within Fleet sampling	Monitor size and sex structure of retained BSB between sampling years	Monitor trends in length frequencies within gear types, locations and times of year	Add additional years of data to explore inter annual differences in length frequency	Update of BSB sex ratio logistic regression models from prior years	Develop manuscript for publication utilizing biological or fishery data from Fleet
Demonstrate model approach for cost efficient fishery dependent data collection	Usage of collaborative approach established in previous years	Presentations of Fleet design at scientific conferences	Develop manuscript to validate Fleet design through peer review				

Cost Summary and Funding Transition Plan:

This proposal represents a 0.1% (\$3) cost reduction from Year 4’s proposal of a similar scope. The drop is due primarily to a reduction in the research supplies cost, the ODD programmer cost, and an update to the CFRF personnel and Fringe Benefits to current staff rates. These changes are reflected in the CFRF sub-contract (section F of the Budget Table).

The CFRF and RI DEM have pursued funding from a variety of sources for the Black Sea Bass Research Fleet and will continue to do so to ensure the longevity and utility of the data collected to the management of this data poor species. Last year, the CFRF secured partial funding from the Sarah K. de Coizart Tenth Perpetual Charitable Trust to partially support

additional fishing vessels operating in the Research Fleet as well as to undertake laboratory sampling of black sea bass from the federal water, winter fishery. The awarded funds represent a willingness for the CFRF and RI DEM to search for external sources of funds to support the Research Fleet as well as an agreement by the management representatives on the steering committee and the industry collaborators that the project addresses important issues.

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:

		Year 5 (Maintenance)		
		Proposal	In-Kind	Total
TOTAL		\$ 132,064	\$ 22,473	\$ 154,537
% Contribution by Funding Source		85%	15%	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 - David Bethoney	\$ 11,440		\$ 11,440
	- Research Scientist - Thomas Heimann	\$ 28,125		\$ 28,125
	- Business Manager	\$ 4,575		\$ 4,575
	Total CFRF Personnel Costs	\$ 44,140	\$ -	\$ 44,140
	b. Fringe Benefits	\$ 3,973	\$ -	\$ 3,973
	c. Travel	\$ 3,000	\$ -	\$ 3,000
	d. Equipment	\$ -	\$ -	\$ -
	e. Supplies			
	- Research Supplies	\$ 1,000		\$ 1,000
	- Office Supplies	\$ 1,000		\$ 1,000
	Total Supplies	\$ 2,000	\$ -	\$ 2,000
	f. Contractual			
	- Programmer for On-Deck Data database	\$ 1,500	\$ -	\$ 1,500
	Total Contractual	\$ 1,500	\$ -	\$ 1,500
	g. Construction	\$ -	\$ -	\$ -
	h. Other Costs			
	- Fishing Vessel Stipends	\$ 55,440	\$ -	\$ 55,440
	- Executive Assistance	\$ -	\$ 2,500	\$ 2,500
	Total Other Costs	\$ 55,440	\$ 2,500	\$ 57,940
	i. Total Direct Charges	\$ 110,053	\$ 2,500	\$ 112,553
	j. Indirect Charges			
	- Proposed at 20% of CFRF Direct Charges	\$ 22,011	\$ 500	\$ 22,511
	Total Indirect Charges	\$ 22,011	\$ 500	\$ 22,511
	k. Total CFRF Costs	\$ 132,064	\$ 3,000	\$ 135,064
G	Construction	\$ -	\$ -	\$ -
H	Other Costs	\$ -	\$ -	\$ -
I	Total Direct Costs	\$ 132,064	\$ 19,608	\$ 151,672
J	Indirect Charges	\$ -	\$ 2,865	\$ 2,865
K	Total Proposal Costs	\$ 132,064	\$ 22,473	\$ 154,537

Budget Justification – Year 5 (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 \$132,064 for 12 months. The voluntary non-federal match funds provided by the RI DEM and CFRF is \$22,473. The total proposal value is \$154,537. The proposed timeframe is August 1, 2021 to July 31, 2022.

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: \$44,140 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 = \$11,440.
D. Bethoney, CFRF Executive Director, will oversee the administration, team communication/coordination, and outreach aspects of the project. He will also assist with data analysis, report and outreach material development, and communication of project progress to the client, fishing industry and management communities.

2. Research Scientist – Proposed at 50% of time for 12 months = \$28,125.
T. Heimann, 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 = \$4575.
T. Winneg, CFRF Business Manager, will carry out all the finance related aspects of the project including research budget tracking, invoice processing, and administrative support tasks, including purchasing supplies.
- b) Fringe Benefits: \$3,973 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 9% of personnel costs based on 2019 benefits and 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: \$2,000 federal. This category includes research supplies and project office supplies.
 1. Research Supplies: \$1,000 - Costs of tablets, waterproof cases, stylus & fish measuring board. Proposed at \$500 per set x 2 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 or lost.
 2. Office Supplies: \$1,000 – Costs to cover database storage and website fees (\$50/month), project office and meeting supplies, etc.
 - f) Contractual: \$2,000 federal. This includes costs associated with:
 1. Programmer (\$1,500 - federal) - CFRF hiring an outside computer programmer to maintain the OnDeckData 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: \$55,440 federal + \$2,500 match = \$57,940. This includes:
 1. Fishing vessel stipends (\$55,440 - federal) for 14 vessels for 12 months at \$600 per month. A fleet of 14 vessels will be utilized each month to obtain the proposed biological samples. The total stipend is computed at 55% due to fluctuations in

vessel sampling associated with weather, vessel maintenance, and seasonal black sea bass distribution.

2. Executive Assistance (\$2,500 - 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 5 days for 2 people over the duration of the project.

i) Total Direct Charges: \$110,053 federal + \$2,500 in-kind = \$112,553 total. This is the total direct charges for cost items a-h.

j) Indirect Charges: \$22,011 federal + \$500 in-kind = \$22,511 total. Indirect general and administrative costs are calculated as 20.0% of Total Direct Charges. 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 FY2020 Indirect Cost Rate Proposal dated 12/30/19 is for 20.0% based on FY2019 actual costs.

k) Total Proposal Costs: \$132,064 Federal + \$3,000 In-Kind = \$135,064 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: \$132,064 Federal + \$19,608 In-Kind = \$151,672 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: \$132,064 Federal + \$22,473 In-Kind = \$154,537 Total.

Budget Justification – Year 4 (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 \$132,097 for 12 months. The voluntary non-federal match funds provided by the RI DEM and CFRF is \$25,638. The total proposal value is \$157,735. The proposed timeframe is August 1, 2020 to July 31, 2021.

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

L. 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.

M. 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%	

N. Travel: There are no direct travel charges.

O. Equipment: There are no direct equipment charges.

P. Supplies: There are no direct supplies charges.

Q. 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:

l) Personnel: \$42,790 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 = \$9,350
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 = \$4,840

m) Fringe Benefits: \$3,851 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 9% of personnel costs based on 2019 benefits and historical analysis.

n) 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.

- o) Equipment: \$0. There will be no equipment costs on this project.
- p) 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 (\$35/month), project office and meeting supplies, etc.
- q) 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.
- r) Construction: There are no construction costs.
- s) Other Costs: \$55,440 federal + \$5,000 match = \$60,440. This includes:
 - 1. Fishing vessel stipends (\$55,440 - federal) for 14 vessels for 12 months at \$600 per month. A fleet of 14 vessels will be utilized each month to obtain the proposed biological samples. The total stipend is computed at 55% due to fluctuations in vessel sampling associated with weather, vessel maintenance, and seasonal black sea bass distribution.
 - 2. Executive Assistance (\$5,000 - 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.
- t) Total Direct Charges: \$110,081 federal + \$5,000 in-kind = \$115,081 total. This is the total direct charges for cost items a-h.
- u) Indirect Charges: \$22,016 federal + \$1,165 in-kind = \$23,181 total. Indirect general and administrative costs are calculated as 20.0% of federally requested Total Direct Charges (\$110,081). 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 FY2019 Indirect Cost Rate Proposal dated 12/21/18 is for 20.15% based on FY2018 actual costs. The 0.15% 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.

- v) Total Proposal Costs: \$132,097 Federal + \$6,165 In-Kind = \$138,262 Total.
- R. Construction. There are no construction costs on this grant
- S. Other Costs. There are no other costs associated with this grant.
- T. Total Direct Charges: \$132,097 Federal + \$22,773 In-Kind = \$154,870 total. This is the total direct charges for cost items A-H.
- U. Indirect Charges: \$2,865 In-Kind (RIDEM). Indirect charges are charged on RIDEM Salaries only. The Negotiated Indirect Cost Rate for FY2018 is 17.25%. (Total personnel and Fringe is \$16,608 x 17.25% = \$2,865.)
- V. Total Proposal Costs: \$132,097 Federal + \$25,638 In-Kind = \$157,735 Total.

Summary of Proposal for Ranking Purposes

Type: Maintenance

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: 50% Biological, 25% Catch and Effort, 25% 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 504 trips and 25,200 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 has been successful through the first two years of funded work and has sampled over 14,000 black sea bass. Year 3 funding is expected to result in increased sampling rates and coverage as the Research Fleet will expand by two vessels while reducing overall costs. An additional year of funding would bolster the first year-round, multi-year database for this biologically 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 have continued to apply for funding for this project through external sources and have already secured supplemental funding to partially support the Research Fleet as described above. Obtaining long-term funding for the Research Fleet is a top and ongoing priority for project PIs and staff.

In-kind contribution: The total project cost is \$157,735. In-kind contributions provided by RI DEM and CFRF total \$25,638. Thus, RI DEM and CFRF will provide 16% 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 (25%) and bycatch sampling (25%). The project effort allocated to the catch and effort module refer to the sampling that occurs while the fishery is open. Although the fishery is open for a large portion of the year, black sea bass is often caught and retained as a non-target species. 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 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 selectivity, and gear (and location) specific discard characterizations.

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 to inform the management about catch and discard structure from a variety of gear types. 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 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), David Bethoney (Executive Director, CFRF), and Thomas Heimann (Research Associate, 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 Biologist). 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.

Dr. N. David Bethoney, Executive Director of the CFRF, will serve as the lead Co-PI for the proposed project. Dr. Bethoney will be responsible for overall projection direction and progress towards completing proposed objectives. Dr. Bethoney will be primarily responsible for overseeing proposed data analysis as well as dissemination of project results to the MAFMC and ASMFC. He will also assist in at-sea related research on an as-needed basis.

Thomas Heimann, CFRF, serves as the primary individual responsible for Research Fleet maintenance and support, as well as data management, communication, and analysis. Heimann has been the primary Research Administrator for the Black Sea Bass Research Fleet since its first year of funding starting in September 2016. Heimann has gained extensive experience with the work involved in initiating and supporting an industry-based research fleet and has formed a relationship with the current Fleet Members.

Jason Earl McNamee, PhD
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: Janet Coit
Supervisor's Phone: 401-222-4700 ext. 2409

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

Senior Natural Resource Specialist

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.

Rhode Island Department of Environmental Management & Commercial Fisheries Research Foundation
ACCSP Funding Proposal (Maintenance Project – Year 5): 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 22-25.

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.

Dr. NAIFF DAVID BETHONEY
Executive Director Commercial Fisheries Research Foundation
P.O. Box 278 Saunderstown, RI
401-515-4662, dbethoney@cfrfoundation.org

EDUCATION:

University of Massachusetts at Dartmouth School for Marine Science and Technology
PhD Dissertation: Understanding and avoiding River herring and American shad bycatch in the Atlantic herring and mackerel mid-water trawl fisheries.
Cum. GPA: 3.92 PhD Received 2013

MA Thesis: Association between diet and epizootic shell disease in the American lobster (*Homarus americanus*) around Martha's Vineyard
Cum. GPA: 3.93 M.S. Received 2010

Colby College - Waterville, ME
Major: Biology with Concentration in Environmental Science
Cum. GPA: 3.41, Cum Laude B.A. Received 2008

SEA Education Association of Woods Hole, MA Study Abroad: Fall 2006
Documenting Change in the Caribbean: Designed and implemented an original biological research project with practical application while at sea. Studied at Woods Hole, and sailed from St. Croix, USVI to Key West, Florida with research stops at Montserrat, Dominican Republic, and Jamaica.

WORK EXPERIENCE:

- Commercial Fisheries Research Foundation Spring 2020-Present

Executive Director: Responsible for overseeing foundation business manager, scientific staff, interns, and consultants to carry out all tasks associated with ongoing projects and general administration. In addition, responsible for pursuing new partnerships and projects, including proposal development and submission, under the advisement of the foundation Board of Directors.

- UMASS-Dartmouth School for Marine Science and Technology Fall 2008-Spring 2020

Research Assistant Professor, Fall 2014-Present: All responsibilities of research associate position related to drop camera and herring work with the ability to be lead principle investigator on research proposals and serve on student committees.

Research Associate, Summer 2013-Summer 2014: All responsibilities of research assistant position described below with management and development responsibilities for scallop drop camera and groundfish video surveys. Management responsibilities include equipment purchasing and maintenance and oversight of all technical operations and student involvement.

Research Assistant, Summer 2010- Spring 2013: Major responsibilities included coordinating River Herring bycatch avoidance program, assisting the Massachusetts Division of Marine Fisheries port side sampling program, and scallop drop camera survey at-sea data collection and analysis.

Graduate Research Assistant, Fall 2008-2010: Assisted with American lobster research including lobster husbandry, measuring and photographing lobsters, collecting larvae, and setting up housing apparatuses.

SCIENTIFIC JOURNAL PUBLICATIONS IN LAST 3 YEARS:

1. Stokesbury KDE and Bethoney ND. 2020. How many sea scallops are there and why does it matter? *Frontiers in Ecology and the Environment*. In Press.

Rhode Island Department of Environmental Management & Commercial Fisheries Research Foundation
ACCSP Funding Proposal (Maintenance Project – Year 5): 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 22-25.

2. Bethoney ND and Stokesbury KDE. 2019. Implications of extremely high recruitment: crowding and reduced growth within spatial closures. *Marine Ecology Progress Series* 611:157-165.
3. Bethoney ND, Cleaver C, Asci SC, Bayer SR, Wahle RA, Stokesbury KDE. 2019. A comparison of drop camera and diver survey methods to monitor Atlantic sea scallops (*Placopecten magellanicus*) in a small fishery closure. *Journal of Shellfish Research* 38(1):43-51.
4. Stokesbury KDE, Bethoney ND, Georgianna D, Inglis S, Keiley EF. 2019. Convergence of a disease and litigation leading to increased scallop discard mortality and economic loss in the Georges Bank, USA fishery. *North American Journal of Fisheries Management* 39(2):299-306.
5. Bethoney ND and Stokesbury KDE. 2018. Methods for image-based surveys of benthic macroinvertebrates and their habitat exemplified by the drop camera survey of the Atlantic sea scallop. *Journal of Visualized Experiments* 137: DOI: 10.3791/57493.
6. Bethoney ND, Schondelmeier BP, Kneebone J, Hoffman WS. 2017 Bridges to best management: Effects of a voluntary bycatch avoidance program in a mid-water trawl fishery. *Marine Policy* 83: 172- 178
7. Bethoney ND, Zhao L, Chen C, Stokesbury KDE. 2017. Identification of persistent benthic assemblages in areas with different temperature variability patterns through broad-scale mapping. *PLoS ONE* 12(5): e0177333. <https://doi.org/10.1371/journal.pone.0177333>.

GRANTS RECEIVED AS A PRINCIPLE INVESTIGATOR IN LAST 2 YEARS:

- | | |
|--|---------------|
| 1. “FY 2020: 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”
Awarded from: Rhode Island Department of Environmental Management
Value: \$132,097 | March 2020 |
| 2. “SMAST drop camera survey of Patagonian scallop Management Unit B, 2019”
Awarded from: Clearwater Seafoods
Value: \$194,811 | August 2019 |
| 3. “SMAST Drop Camera of Brown Bank and the Canadian Portion of Georges Bank, 2019”
Awarded from: Clearwater Seafoods
Value: \$ 162,329 | July 2019 |
| 4. “SMAST drop camera of Vineyard Wind lease areas before development”
Awarded from: Vineyard Wind LLC
Value: \$ 243,888 | June 2019 |
| 5. “Drop camera surveys examining the scallop population and habitat of the Mid-Atlantic and assessment of automated scallop count and measurement algorithm”
Awarded from: National Oceanic and Atmospheric Administration
Value: \$ 242,440 | May 2019 |
| 6. “High-resolution drop camera surveys to track scallop aggregations in Closed Area I access area, Nantucket Lightship, and Great South Channel”
Awarded from: National Oceanic and Atmospheric Administration
Value: \$ 106,281 | May 2019 |
| 7. “Maintaining and expanding bycatch avoidance strategies in the mid-water trawl Atlantic herring fishery”
Awarded from: National Oceanic and Atmospheric Administration
Value: \$ 134,979 | February 2019 |
| 8. “SMAST Drop Camera of Brown Bank and the Canadian Portion of Georges Bank, 2018”
Awarded from: Clearwater Seafoods Value: \$ 146,398 | Sept 2018 |

Rhode Island Department of Environmental Management & Commercial Fisheries Research Foundation
ACCSP Funding Proposal (Maintenance Project – Year 5): 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 22-25.

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 2016 – Present

- Research project management position working collaboratively with the Rhode Island fishing industry as well as state and federal fisheries management bodies. Responsible for management of both Black sea bass Research Fleet and Quahog Research Fleet as well as lead at-sea sampler for the Southern New England Cooperative Ventless Trap Survey. Duties include Fleet support and training, sampling protocol development, database management, data manipulation and statistical analysis, report writing, at-sea sampling on lobster vessels, grant writing, and outreach.

Northeastern University
Diving Research Methods Teaching Assistant

Nahant, MA
Sep 2015 – Oct 2015

- Employed by Northeastern University to be a teacher's assistant for an intensive American Academy of Underwater Sciences 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
Research Experience for Undergrads, National Science Foundation Intern

Sarasota, FL
May 2012 – Jul 2012

- Highly competitive 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
Ecological Stewardship Intern

Vineyard Haven, MA
May 2010 – Aug 2010

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

SCIENTIFIC PUBLICATIONS

Malek Mercer, A.J., Ellertson, A., Spencer, D., and **Heimann, T.** 2018. Fishermen fill data gaps for American lobster (*Homarus americanus*) and Jonah crab (*Cancer borealis*) in the Northeast USA. *Bulletin of Marine Science*, 94:3, pp 1121-1135.

SELECTED PRESENTATIONS

Heimann, T., McManus, C., Leavitt, D., Malek Mercer, A.J. 2018. Methods for Establishing a Quahog (*Mercenaria mercenaria*) Industry-Based Research Fleet for expansion of Fishery Dependent Data Sources. National Shellfisheries Association Annual Meeting. Seattle, Washington.

Heimann, T., McManus, C., Leavitt, D., Malek Mercer, A.J. 2018. Engaging Fishermen to Address Data Gaps and Evolve Management of the Quahog in Narragansett Bay. Southern New England Chapter of the American Fisheries Society Winter Meeting. New Bedford, MA.

Heimann, T., Malek Mercer, A.J., and McNamee, J. 2018. Advancing Fishery Dependent Data Collection for Black Sea Bass (*Centropristis striata*) in Southern New England and Mid-Atlantic Region Using a Fishing Vessel Research Fleet Approach. American Fisheries Society 148th Annual Meeting. Atlantic City, New Jersey.*

Heimann, T., Malek Mercer, A.J., and McNamee, J. 2019. Using Fishermen-Collected Data to Explore the Black Sea Bass (*Centropristis striata*) Population and Construct Gear-Specific Discard Characterizations. Southern New England Chapter of the American Fisheries Society Winter Meeting. Storrs, Connecticut.

Heimann, T., McManus, C., Leavitt, D., Malek Mercer, A.J. 2019. Quantifying Quahogs (*Mercenaria mercenaria*) in Narragansett Bay: Insights from a Collaborative Sampling Program. Southern New England Chapter of the American Fishery Society Winter Meeting. Storrs, Connecticut.

Heimann, T., Malek Mercer, A.J., and McNamee, J. 2019. Using Industry Collaboration to Improve Black Sea Bass Management. Wakefield Fisheries Symposium. Anchorage, Alaska.

CERTIFICATIONS AND SKILLS

- Statistical Language R (Commonly used packages; ggplot, shiny, sp)
- MySQL
- ArcGIS
- American Academy of Underwater Sciences Scientific Diver Certificate
- PADI Rescue Diver Certificate
- At-Sea Safety Training Certificate
- Experienced in Small Boat Operations

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. Special Report # 89. ASMFC, Arlington, VA. 58pp.
- Bell, R. J., Richardson, D.E., Hare, J.A., Lynch, P.D., and Fratantoni, P.S. 2014. Disentangling the effects of climate, abundance, and size on the distribution of marine fish: an example based on four stocks from the Northeast US shelf. ICES Journal of Marine Science: fsu217.
- Drohan, A. F., J. P. Manderson, and D. B. Packer. 2007. Essential fish habitat source document: Black sea bass, *Centropristis striata*, life history and habitat characteristics. 2nd Edition. NOAA Technical Memo. NMFS-NE-200, 78 p.
- Moser, J., and G. R. Shepherd. 2009. Seasonal distribution and movement of black sea bass (*Centropristis striata*) in the Northwest Atlantic as determined from a mark-recapture experiment. Journal of Northwest Atlantic Fishery Science 40: 17-28.
- Nelson, G.A. 2014. Cluster Sampling: A Pervasive, Yet Little Recognized Survey Design in Fisheries Research. Transactions of the American Fisheries Society 143 (4): 926-938.
- 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.
- Northeast Fisheries Science Center (NEFSC). 2017. 62nd Northeast Regional Stock Assessment Workshop (62nd SAW). Assessment Summary Report. US Department of Commerce, Northeast Fish Science Center Reference Document 17-01; 37 p.
- Musick, J. A., and L. P. Mercer. 1977. Seasonal distribution of black sea bass, *Centropristis striata*, in the Mid-Atlantic Bight with comments on the ecology of fisheries of the species. Transactions of the American Fisheries Society. 106: 12-25.
- Southeast Fisheries Science Center (SEFSC). 2013. Stock Assessment of Black Sea Bass off the Southeastern United States: SEDAR Update Assessment. 102 p.
- Steimle, F. W., C. A. Zetlin, P. L. Berrien, and S. Chang. 1999. Essential fish habitat source document: Black sea bass, *Centropristis striata*, life history and habitat characters. NOAA Technical Memorandum NMFS-NE-143: 1-42.
- Waltz, W., Roumillat, W.A., and P. K. Ashe. 1979. Distribution, age structure, and sex composition of the black sea bass, *Centropristis striata*, sampled along the southeastern coast of the United States. Marine Resources Research Institute, South Carolina Wildlife and Marine Resources Department. Technical Report Number 43, December 1979.
- 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

PHILIP D. MURPHY
GOVERNOR

SHEILA Y. OLIVER
LT. GOVERNOR

DEPARTMENT OF ENVIRONMENTAL PROTECTION
NATURAL AND HISTORIC RESOURCES
DIVISION OF FISH AND WILDLIFE
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VISIT OUR WEBSITE: WWW.NJFISHANDWILDLIFE.COM
DAVID M. GOLDEN, DIRECTOR

CATHERINE R. MCCABE
COMMISSIONER

Atlantic Coastal Cooperative Statistics Program

Operations and Advisory Committee

1050 N. Highland Street., Suite 200 A-N

Arlington, VA 22201

June 12, 2020

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

Sincerely,

Heather Corbett

Heather Corbett, Supervising Biologist

NJ Marine Fisheries Administration

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

Bold Comments indicate sections that help with the ranking process

Highlighted text indicates changes from the first submission

NJ Bureau of Marine Fisheries
Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries

Proposal for FY2021 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: Heather Corbett, Supervising Biologist (NJDFW)

Principal Investigator: Chad Power, Assistant Biologist (NJDFW)

State Staff: Matthew Heyl, Assistant Biologist (NJDFW)

Project Staff: Laura Versaggi, NJ ACCSP Fisheries Specialist

Requested Amount: **\$63,146**

Requested Award Period: September 1, 2021 to August 31, 2022

Bold Comments indicate sections that help with the ranking process

Highlighted text indicates changes from the first submission

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 project that started in 2001.

2. Need

Since 2001, several projects 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 projects 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 projects 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, tautog 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) and electronic Dealer Reporting (eDR). Six of the species that NJ collects biological data for occur in the upper quartile of ACCSP's Biological Priority Matrix. These species include American lobster, American eel, American shad, black sea bass, river herring, and weakfish. The major scope of work for the current FY2021 proposal has not changed from the accepted FY2020 proposal. As part of the ACCSP's funding process, NJ has submitted all progress reports to date covering the FY2019 project to the ACCSP. The final FY2019 report will be due on November 30, 2020. The NJ FY2020 project will begin on September 1, 2020.

2.A. Fisheries Dependent At-Sea Observer Program

Project staff has used at-sea observer coverage to describe fishing activities and to 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 for 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 FY2021 to document sex ratios, length/weight relationships, and age information. Project 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's

Bold Comments indicate sections that help with the ranking process

Highlighted text indicates changes from the first submission

NJ Bureau of Marine Fisheries

Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries

Page 4

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 Project provides accurate length, weight, age, and temporal data for stock assessment and management of commercial harvest for NJDFW, ASMFC, and NMFS. Target sample sizes identified through the ASMFC's Fishery Management Plans (FMP) achieved from 2020 are found in Table 3 of the Appendix. Sampling is conducted through port of landings intercepts and will be continued in FY2021 for American eel, American shad, Atlantic croaker, Atlantic menhaden, tautog and weakfish. NJ will continue sampling for Atlantic croaker, black sea bass, river herring, summer flounder, tautog and weakfish through independent sampling on the NJ Ocean Trawl Survey. Data collected will provide information on sex ratios and 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 New Jersey to fulfill various ASMFC 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 moved to Fisheries of the US for 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 project is critical for NJDFW to provide a single location to find harvest data for multiple fisheries/species/years. Further, the importance of single source harvest data is like 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. Project staff provide support to federal/state permitted dealers facilitating weekly eDR reporting. Additionally, it is the responsibility of project 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 ACCSP and its partners with fishery dependent data. This was initiated in FY2016 and will continue for FY2021.

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 FY2020. Included again in the FY2021 proposal is the request for salary for staff on the project. New Jersey will fund the ageing of summer flounder and black sea bass otoliths by the NMFS Woods Hole Laboratory. The FY2021 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 eight fiscal years (2010-2020) for the Project and for FY2021 state match is 78% due to the addition of new state staff and additional project responsibilities absorbed by NJDFW.** (See page 14).

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 FY2020 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 will be delivered to the ACCSP for inclusion into the lobster database.

3.B. Biological Characterization of Commercial Fisheries

Biological sampling for American eel, American shad, Atlantic croaker, Atlantic menhaden, black sea bass, river herring, summer flounder, tautog, and weakfish was a maintenance project for FY2019. **Sampling targets were near 100% of set goals during the first 13 years (2006-2019, Table 1) and will be similar for FY2021.**

Commercial American eel, American shad, Atlantic croaker, tautog, and weakfish samples collected are processed and aged at the NJDFW Nacote Creek ageing facility in Port Republic, New Jersey. Atlantic menhaden samples collected from the NJ commercial purse seine, pound net, gillnet, and cast net fisheries are processed at the NJDFW Nacote Creek facility and forwarded to NMFS Beaufort Laboratory, Beaufort, North Carolina for ageing. Black sea bass and summer flounder samples collected on the NJDFW Ocean Trawl Survey are processed for length, weight, and sex at the NJDFW Nacote Creek 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 NJDFW staff in support of this proposal is 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 project. The NJ

biological database consists of trip level effort information from which the samples were collected, and biological data taken from each individual sample. To date, all biological data collected for American eel, American shad, Atlantic croaker, Atlantic menhaden, black sea bass, river herring, summer flounder, tautog, and weakfish have been entered, processed for QA/QC, and are available for assessment purposes.

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

Project 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 NJDFW and 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 number 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, Atlantic menhaden, blue crab, and tautog 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 number of commercial landings data through eDR for American eel, Atlantic menhaden, blue crab, and tautog. Project staff remove duplicate reports from multiple sources (paper, e-TRIPS) prior to the 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 project was to develop and implement an all-encompassing commercial trip and dealer reporting system for the NJDFW. This goal

was accomplished by project 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 to provide fishermen with a single comprehensive reporting form for all issued commercial licenses. The New Jersey Harvester Trip and Dealer Reporting Forms collect catch, effort, bycatch and discard data. A copy of the harvester trip form is found in Figure 4. A summary of NJDFW commercial trip reporting since the 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 LCMA 3 and 5. Therefore, at-sea observer sampling will consist of 10 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 harvested fish as well as those that are discarded. Total targeted lengths and ages of tautog are 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 American eel, American shad, Atlantic croaker, Atlantic menhaden, black sea bass, river herring, summer flounder, tautog, and weakfish will continue in FY2021 based on 2019 annual landings of each species. Six of the species sampled

Bold Comments indicate sections that help with the ranking process

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NJ Bureau of Marine Fisheries

Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries

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. NJDFW and the ACCSP staff will continue to collect biological samples. Staff will process (cut and/or mount) all hard structures to be aged. The project staff at the NJDFW Nacote Creek facility in Port Republic, NJ will age all hard parts collected, except Atlantic menhaden, black sea bass and summer flounder. Atlantic menhaden are sent to the NMFS aging lab in Beaufort, NC throughout the sampling year and are aged pro-bono. **NJDFW has been providing samples for over 15 years which has been beneficial to the coastwide stock assessment for Atlantic menhaden** (Ray Mroch, Ray.Mroch@noaa.gov; Amanda Rezek, Amanda.rezek@noaa.gov); black sea bass and summer flounder were sent to the NMFS aging lab in Woods Hole, MA in early 2020 (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 collected otolith samples (Table 1 of the Appendix). NJ will coordinate with NOAA Fisheries-Greater Atlantic Regional Fisheries Office (GARFO) to avoid duplicate ageing.

Data collected from each sample is transferred to electronic format by NJDFW and the NJ ACCSP staff. After data are successfully entered and quality control measures have been performed, project 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 project. Species-specific sampling and data collection methodology will follow previous sampling protocol. Species-specific target samples sizes for 2020 are found in Table 3 of the Appendix.

5.C. ACCSP Data Feeds 15% Allocated Funds

The project 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. Paper reports include trip level landings of all commercially harvested fish by state permitted fishermen. Biological characterization data are collected for American eel, American lobster, American shad, Atlantic croaker, black sea bass, river herring, summer flounder, tautog, and weakfish. Following collection, the data is inputted 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 project staff, report compliance monitoring, and site administration (user

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NJ Bureau of Marine Fisheries

Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries

access, look-up tables, data correction, etc.). NJDFW and the NJ ACCSP Fisheries Specialist supervise the implementation of the NJ eTRIPS application. Project staff provides state permitted fishermen with user accounts, establishes favorites lists and facilitates the usage of the eTRIPS application, which is a web-based trip level reporting form. Staff 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 presentations at local libraries, firehouses, and other public meeting venues. The 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, staff conducts compliance monitoring of reporting and performs QA/QC analyses of collected data. NJDFW and the ACCSP Fisheries Specialist identifies and completes 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 ensure that duplicate reporting is not taking place by comparing electronic reports to those received in paper logbook format by NJDFW for all commercial species. Compliance of fishermen monthly reports is facilitated using the eTRIPS program and the New Jersey Harvester Trip Reporting forms.

Project 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. Staff will travel to commercial fishing facilities to assist permitted dealers with issues pertaining to data entry for the eDR application as needed. 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 NJ ACCSP.

In addition to all trip and dealer reports entered electronically through SAFIS, NJDFW and ACCSP staff collects all paper trip reports submitted on 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. Project staff enter all harvest data received by paper trip report forms directly into SAFIS to increase efficiency.

6. Geographic Location

The ACCSP Fisheries Specialist will serve as project staff. The project will be administered from the New Jersey Department of Environmental Protection (NJDEP), Division of Fish & Wildlife's 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

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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.

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9. FY2021 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)	\$5,218
Assistant Biologist-Lab Supervisor- 15% in-kind (current FTE)	\$8,688
2-Assistant Biologist- 50% in-kind (current FTE)	\$57,992
Clerical 10% (current FTE)	\$2,600
Fringe benefits (46.35% on FTEs)	\$34,530
2-Hourly Technicians (current PTE)	\$23,400
Fringe benefits (7.65% on PTE)	\$1,790
<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
NJDFW indirect costs (20.29% of salaries)	\$15,116
Travel (mileage and tolls)	\$4,000
NMFS Contract; process and age summer flounder/black sea bass otoliths, (\$12.94/sample, 1,000 samples)	\$12,940
Subtotal NJ funds	\$230,474
Append to ACCSP Administrative Grant	
<i>Salaries (NJ ACCSP Staff)</i>	
1 ACCSP Fisheries Specialists (ASMFC employee)	\$43,500
Benefits 25%	\$10,875
ASMFC Overhead (16.13%)	\$8,771
ACCSP Admin Grant Project Costs	\$63,146
Total Project Costs (includes in-kind)	\$293,620

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Budget Narrative

(a). Salaries; ACCSP Fisheries Specialist:

(1) NJ ACCSP Fisheries Specialist annual salary.

(b). Benefits of above employees

25% of the annual salary for the one NJ ACCSP Fisheries Specialist.

(c). ASMFC Overhead:

16.13% of the sum of budget items a and b.

(d). ACCSP Administrative Grant Project Costs:

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

The FY2021 budget is in two parts, the first part details the amount that is being provided as in-kind match by NJDFW, while the second part is the amount to be amended to the ACCSP Administrative Grant.

The in-kind funding provided by NJDFW includes salaries for NJDFW full time employees under the titles of supervising biologist, three assistant biologists, two hourly technicians, and clerical staff. The NJDFW is devoted to the project by transitioning staff and taking on additional costs. In previous years, the NJDFW hired an assistant biologist devoted to the project. **For FY2021, the NJDFW will take over travel cost for the ACCSP Fisheries Specialist and NMFS contract for the processing and ageing of summer flounder and black sea bass otoliths. These costs represent a cost savings of \$16,940 to ACCSP.** These additions exemplify the commitment of the NJDFW, while maintaining the objectives and goals of the project. Additional in-kind funds include: supplies for port sampling, ageing 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 Nacote Creek Field Station in Port Republic, 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 Marine Fisheries Administration (MFA) and from the Atlantic Coastal Grant.

The \$63,146 covers the salaries for one Fisheries Specialist position that was hired by the ACCSP and works out of the NJDFW's field office in Port Republic, NJ. This covers fringe, indirect, and ASMFC's overhead. All other funding for the project will be covered by NJDFW.

The requested ACCSP Administrative Grant amount does not achieve the 33% mandatory reduction for FY2021. NJDFW is covering all funding for this project except for the salary and benefits of one ACCSP Fisheries Specialist. NJDFW is requesting a one-time amount of \$63,146. **While NJDFW understands that this request is above the maximum grant amount we would appreciate the additional money if available to guarantee full funding of the Fisheries Specialist position for the entirety of the project year.** The amount requested is only an additional \$8,545 or 13% over the reduction amount of \$54,601. NJDFW has returned \$30,952 to ACCSP in unused funds from FY11 through FY19 including \$23,807 when NJDFW transitioned an ACCSP Fisheries Specialist to a full-time state funded Biologist Trainee. **Although this has no bearing on available funds for the FY21 proposal funding, NJDFW felt it important to note since it exemplifies the commitment to this project and the transition to full state funding.** The additional \$8,545 requested is only 36% of the unused funds from previous fiscal years. **After this fiscal year the goal is to hire this position on as a full-time state**

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employee. This shows the commitment of the NJDFW to electronic reporting and biological characterization of New Jersey commercial fisheries even when funding has ended. Again, the amount requested only covers salary, benefits, and ASMFC's overhead costs. All other funding aspects of the project will be covered by NJDFW.

9.1 FY2020 Budget (Letters in parenthesis pertain to Federal Grant Object Codes)

<i>Item</i>	<i>Total NJDFW 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
2- Assistant Biologists- 50% in-kind (current FTE)	\$49,263
Biologist Trainee - 90% in-kind (current FTE)	\$44,100
Clerical 10% (current FTE)	\$2,600
Fringe benefits (46.35% on FTEs)	\$50,972
Hourly Technician (current PTE)	\$11,700
Fringe benefits (7.65% on PTE)	\$895
Supplies & Materials	
Scientific Equipment (Measuring boards, scales, calipers)	\$250
Materials for collection and preparation of scales, otoliths, opercula, etc.	\$350
purchase of samples (American eels)	\$600
Other	
NJDFW Trawl Survey (\$5,900 per day x 10 days)	\$59,000
Department Network account (OIRM)	\$4,000
NJDFW indirect costs (20.29% of salaries)	\$36,859
Subtotal NJ funds	\$278,149
Append to ACCSP Administrative Grant	
Salaries (NJ ACCSP Staff)	
1 ACCSP Fisheries Specialist (ASMFC employee)	\$43,500
Benefits 25%	\$10,875
Other	
Travel (mileage and tolls)	\$2,000
otoliths, (\$12.94/sample, 1,000 samples)	\$12,940
Biological Collection	\$15,000
ASMFC Overhead (16.13%)	\$9,093
ACCSP Admin Grant Project Costs	\$93,408
Total Project Costs (includes in-kind)	\$371,557

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10. Maintenance Projects

Amount of funds received directly by 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 NJDFW for the ACCSP project.

History Details for NJDFW ACCSP Funded Projects						
Fiscal Year	Period	Project	NJ ACCSP Funds Requested	Appended to ACCSP Admin Grant	NJDFW In-Kind	In-Kind Percentage of Total Project Cost
2001	9/01/2001 through 8/31/2002	Integration of Commercial Blue Crab Harvest Data into the ACCSP	\$133,988	\$0	\$0	0%
2005	5/01/2005 through 4/30/2006	Implementation of Phase 2 of the ACCSP for the State of New Jersey	\$89,180	\$84,375	\$41,831	19%
2006	9/01/2006 through 8/31/2007	Biological Characterization of Four New Jersey Commercial Fisheries	\$79,722	\$0	\$59,986	43%
2006	9/01/2006 through 8/31/2007	Continuance of Phase 2 of the ACCSP for the State of New Jersey	\$81,264	\$78,975	\$63,556	28%
2007	9/01/2007 through 8/31/2008	Implementation of eVTR, Biological Characterization and Continuance of SAFIS Coordination for the State of New Jersey	\$167,544	\$87,413	\$111,617	30%
2008	9/1/2008 through 8/31/2009	NJ Implementation of ACCSP Commercial Fisheries Data Collection; Electronic Vessel Trip Reporting, Electronic Dealer Reporting, and Biological Characterization.	\$128,536	\$150,525	\$86,609	24%
2009	9/1/2009 through 8/31/2010	Introduction & Continuance of SAFIS and Biological Characterization of Commercial Fisheries in NJ	\$52,814	\$174,096	\$132,008	37%
2010	9/1/2010 through 8/31/2011	Further Development of SAFIS and Biological Characterization of Commercial Fisheries in NJ	\$24,301	\$174,096	\$191,008	49%

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Fiscal Year	Period	Project	NJ ACCSP Funds Requested	Appended to ACCSP Admin Grant	NJDFW In-Kind	In-Kind Percentage of Total Project Cost
2011	9/1/2011 through 8/31/2012	Continued Expansion of SAFIS and Biological Sampling for the Commercial Fisheries of NJ	\$0	\$188,779	\$191,008	50%
2012	9/1/2012 through 8/31/2013	Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ	\$0	\$192,100	\$240,897	56%
2013	9/1/2013 through 8/31/2014	Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ	\$0	\$192,100	\$240,897	56%
2014	9/1/2014 through 8/31/2015	Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ	\$75,988	\$152,602	\$159,227	41%
2015	9/1/2015 through 8/31/2016	Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ	\$0	\$158,740	\$205,725	56%
2016	9/1/2016 through 8/31/2017	Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ	\$0	\$167,956	\$205,725	55%
2017	9/1/2017 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	9/1/2018 through 8/31/2019	Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ	\$0	\$164,356	\$198,916	55%
2019	9/1/2019 through 8/31/2020	Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ	\$0	\$164,356	\$198,916	55%
2020	9/1/2020 through 8/31/2021	Continued Dealer Reporting, Trip Level Reporting, and Biological Sampling for Commercial Fisheries in NJ	\$0	\$93,408	\$278,149	75%
Total Amount for all ACCSP Projects			\$833,337	\$2,382,424	\$2,811,800	47%

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Proposal Summary for Ranking Criteria

PROPOSAL TYPE: *Maintenance*

PRIMARY PROGRAM PRIORITY:

Catch and Effort (55%): 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, river herring, and weakfish. Thus, ASMFC will benefit from the dealer and harvester data collected from this project.

Funding-

FY2021 Funding Request

NJDFW is requesting a one-time amount of \$63,146. While NJDFW understands that this request is above the maximum grant amount we would appreciate the additional money if available to guarantee full funding of the Fisheries Specialist position for the entirety of the project year. The amount requested is only an additional \$8,545 or 13% over the reduction amount of \$54,601. NJDFW has returned \$30,952 to ACCSP in unused funds from FY11 through FY19 including \$23,807 when NJDFW transitioned an ACCSP Fisheries Specialist to a full-time state funded Biologist Trainee. Although this has no bearing on available funds for the FY21 proposal funding, NJDFW felt it important to note since it exemplifies the commitment to this project and the transition to full state funding. The additional \$8,545 requested is only 36% of the unused funds from previous fiscal years. After this fiscal year the goal is to hire this position on as a full-time state employee. This shows the commitment of the NJDFW to electronic reporting and biological characterization of New Jersey commercial fisheries even when funding has ended.

Transition Plan:

The project in FY2013 included funds that went directly to NJDFW for salaries and supplies. 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. 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

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relieving funding away from ACCSP. These costs were removed in FY2014 and will continue to be covered as NJDFW in-kind match for FY2021.

Additionally, a Biologist Trainee was hired in November of 2018, as the first phase of transitioning staff under NJDFW authority. The addition of the Biologist Trainee, whose main task is devoted to the objectives and goals of this project allowed NJDFW to meet the mandatory 33% reduction during FY 18. **NJDFW anticipates the addition of another new staff member devoted to the project after funding for the FY 21 maintenance project is complete.**

In-kind Contribution:

NJDFW is providing 78% of the project cost (see section 9).

Data:

Improvement in data quality/quantity:

NJDFW has been able to provide commercial harvest landings data to ACCSP for American lobster, Atlantic menhaden, blue crab, and American eel through annual data feeds. Additionally, 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 project staff. This type of project and data management has ensured improvements in data quality, quantity and timeliness.

SECONDARY PROGRAM MODULE:

Biological Sampling (45%):

NJDFW is collecting biological characterization data through port sampling and at-sea observer coverage for 10 species, **6 of which are listed in the upper 25% on ACCSP's 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 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 LCMA 4.
- American eel sampling covers water bodies bordered by NY, NJ, PA, and DE.

Data:

All biological data collected by NJDFW and 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 ageing 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

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abundance. NJDFW American eel and weakfish biological characterization data are used for stock assessment.

Ranking Guide and Factors

Achieved Goals:

Biological sampling for American eel, American shad, Atlantic croaker, Atlantic menhaden, black sea bass, river herring, summer flounder, tautog, and weakfish was a maintenance project for FY2019. Sampling targets were near 100% of set goals during the first 13 years and will be similar for FY2021.

The continuation of SAFIS implementation includes components for web-based dealer reporting (eDR), web-based fishermen reporting (eTRIPS), paper-based data entry by project staff, report compliance monitoring, and site administration (user access, look-up tables, data correction, etc.) Catch and effort of 100% of permitted dealers in NJ will be submitting dealer reports through SAFIS eDR, for 100% of the summer flounder, black sea bass, scup, menhaden, and all other species mandated by federal and state regulations that dealers have purchased. 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.

Data Delivery Plan:

Project staff provides 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 which will continue through FY2021.

Commercial trip level reporting is mandatory for American eel, Atlantic menhaden, blue crab, and tautog 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 number of commercial landings data through eDR for American eel, Atlantic menhaden, blue crab and tautog. Project staff remove duplicate reports from multiple sources (paper, e-TRIPS) prior to ACCSP data uploads, ensuring accurate landings.

The New Jersey Harvester Trip Reporting Form was created to help standardize all trip level data collected and to provide fishermen with a single comprehensive reporting form for all issued commercial licenses. The New Jersey Harvester Trip and Dealer Reporting Forms collect catch, effort, bycatch and discard data. All paper reporting forms are entered into SAFIS, reviewed for quality assurance, and are available to the ACCSP immediately. NJDFW staff completes two semi annual reports, final reports and multiple uploads for commercial fisherman and dealers which are sent to ACCSP.

Level of Funding:

The requested ACCSP Administrative Grant amount does not achieve the 33% mandatory reduction for FY2021. NJDFW is covering all funding for this project except for the salary and benefits of one ACCSP Fisheries Specialist. NJDFW is requesting a one-time amount of \$63,146. While NJDFW understands that this request is above the maximum grant amount we would appreciate the additional money if available to guarantee full funding of the Fisheries Specialist position for the entirety of the project year. The amount requested is only an additional \$8,545 or 13% over the reduction amount of \$54,601. NJDFW has returned \$30,952 to ACCSP in unused funds from FY11 through FY19 including \$23,807

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when NJDFW transitioned ACCSP Fisheries Specialist to a full-time state funded Biologist Trainee. Although this has no bearing on available funds for the FY21 proposal funding, NJDFW felt it important to note since it exemplifies the commitment to this project and the transition to full state funding. The additional \$8,545 requested is only 36% of the unused funds from previous fiscal years. After this fiscal year the goal is to hire this position on as a full-time state employee. This shows the commitment of the NJDFW to electronic reporting and biological characterization of New Jersey commercial fisheries even when funding has ended.

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NJ Bureau of Marine Fisheries

Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries

Appendix:

Table 1. History of ALL biological samples collected by the project. American eel, American lobster, black sea bass, river herring and weakfish, all appear on the upper quartile of the ACCSP Biological Priority Matrix. (NJDFW recognizes biological samples by calendar year, not project year) American shad and river herring have been aged by scales in the past, otoliths were collected and will be processed for aging

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	116	116	114	167	167	113	50	50	50	83	82	0	1461	1461	1345
2018	144	144	144	341	341	227	52	52	52	23	23	0	946	946	*
2019	121	121	*	399	397	*	17	17	*	42	40	0	1150	1150	*
TOTAL	3913	3726	3525	4361	3610	2090	4438	3904	3840	783	764	0	11547	11547	7953

* All samples denoted by an asterisk have not been aged at the time of submission. Please note that 2020 samples are in the process of being collected

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	637	637	253	3710	5	113	113	109	49	48	0	327	327	324
2017	504	504	256	9543	10	119	119	119	247	243	0	315	315	295
2018	359	359	*	1615	5	150	150	150	152	149	0	286	286	285
2019	415	415	*	1270	3	155	154	154	106	105	0	283	277	271
TOTAL	7993	6866	4135	96961	124	1224	1217	1210	5188	4800	N/A	3258	3247	3127

* All samples denoted by an asterisk have not been aged at the time of submission. Please note that 2020 samples are in the process of being collected

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

Fishery	Year								
	2008	2009	2010	2011	2012	2013	2014	2015	2016- 2020
AMERICAN SHAD	X	X	X	X	X	X	X	X	X
CRAB DREDGE	X	X	X	X	X	X	X	X	X
BAIT NET									X
CRAB POT	X	X	X	X	X	X	X	X	X
LOBSTER, FISH, CONCH POTS									X
DRIFTING GILL NET									X
FYKE NET									X
GILL NET MESH EXEMPTION PERMIT (GNMEP)	X	X	X	X	X	X	X	X	X
HAUL SEINE									X
MENHADEN							X	X	X
MINIATURE FYKES OR POTS	X	X	X	X	X	X	X	X	X
POUND NET									X
SHIRRED NET, PURSE SEINES, OTTER/BEAM TRAWLS									X
SHRIMP TRAWL									X
STAKED AND ANCHORED GILL NET									X
TAUTOG	X	X	X	X	X	X	X	X	X
WIRE POUND NET									X

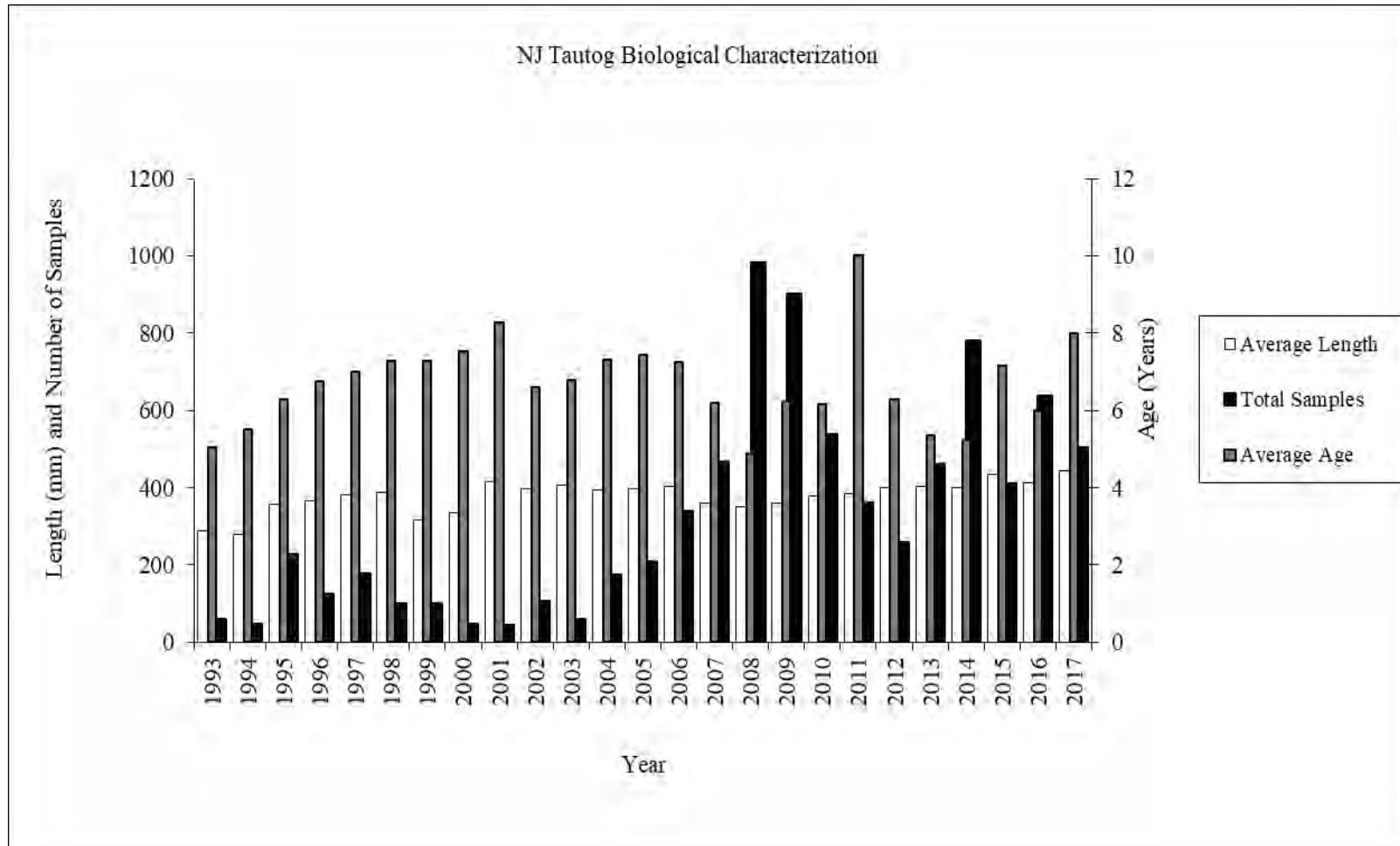
Table 3. 2020 sampling targets for each of the nine species currently funded through the ACCSP.

2020 NJ ACCSP Sampling Targets		
Species	Target Lengths	Target Ages
American eel	350	350
American shad	250	250
Atlantic croaker	540	540
Atlantic menhaden	7,620	7,620
Black sea bass	500	500
River herring	500	500
Summer flounder	500	500
Tautog	200	200
Weakfish	9	58

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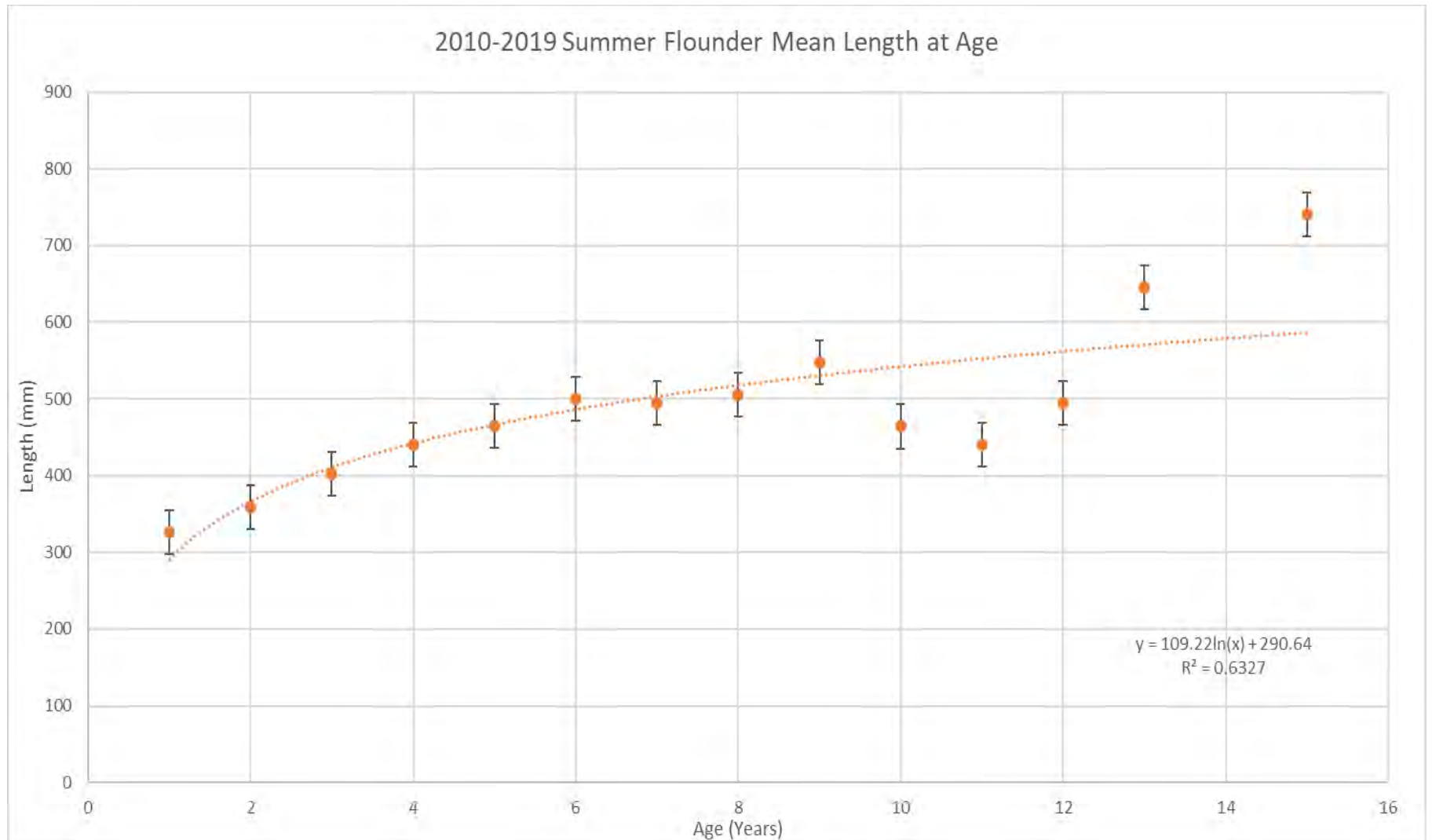
Figure 1. Historical summary of the NJDFW tautog aging project (1993-2017).



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Figure 2. Average length at age for summer flounder samples collected through the project (2010-2019).



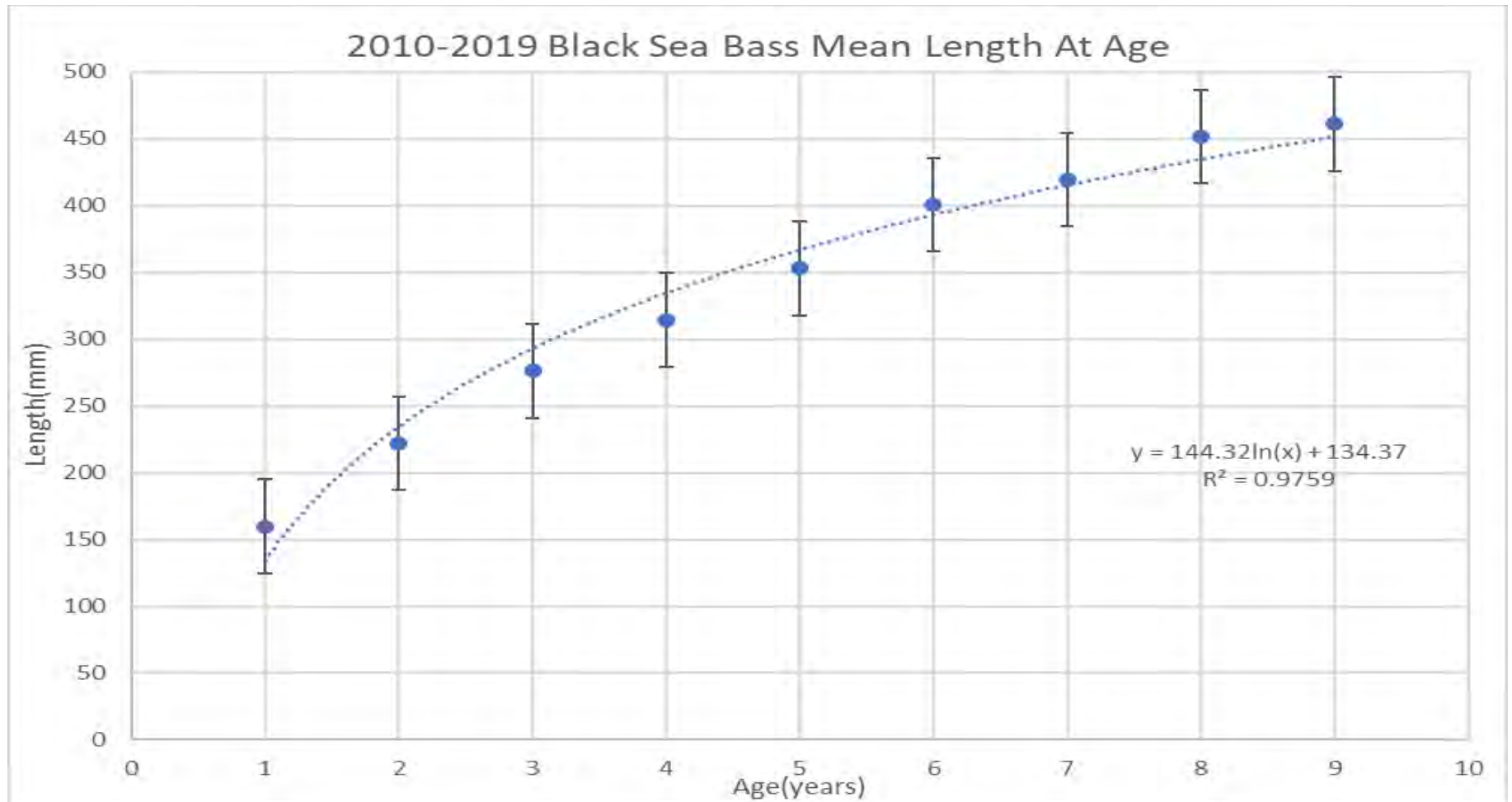
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Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries

Figure 3. Average length at age for black sea bass samples collected through the project (2010-2019).



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Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries

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

Marine Fisheries Biologist

**New Jersey Division of Fish and Wildlife
Bureau of Marine Fisheries**

- 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
 - o Lead on NJ's yellow eel survey
 - o Support crew on NJ's Ocean Trawl Stock Assessment Survey
 - o 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 former chair of ACCSP's Biological Review Panel
- Oversee operations and maintenance of New Jersey's Commercial Harvester Trip Reporting Program

October 2013- April 2017

NJ ACCSP Fisheries Specialist

Atlantic Coastal Cooperative Statistics Program

- 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

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NJ Bureau of Marine Fisheries

Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries

- 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 2013- October 2013

**New Jersey Division of Fish and Wildlife
Bureau of Freshwater Fisheries**

Freshwater Fisheries Technician

- Identification and classification of New Jersey native and invasive freshwater species
- Usage of field sampling equipment to collect fishes and other field sampling data
 - o Electrofishing boats, backpack electrofishers, seine nets, YSI instrumentation, hand held GPS,
- Mounting and preparation of Largemouth Bass and Northern Snakehead scales, and assist in the determining of their age
- Experience in Microsoft Office to develop Largemouth and Smallmouth Bass regulation and Lake inventory databases

June 2012- June 2013

New Jersey Division of Fish and Wildlife

Marine Fisheries Technician

- Exportation and evaluation of collection data, using both software and online applications
 - o Microsoft Office
 - o SAFIS
 - o 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
 - o haul seines, dredges, fyke nets, benthic grabs, trawls, gill nets

June 2012- October 2013

Stockton University

Field Station Technician

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
 - o Remote operated vehicle, side scan sonar towfish, depth finders, YSI water quality sondes, Boat Motors
 - o Maintenance shop, storage units, office buildings
 - o Upkeep and Husbandry on lab's multiple aquaculture systems

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Matthew Heyl

New Jersey Fish and Wildlife
Bureau of Marine Fisheries
Nacote Creek Research Center
360 N. New York Rd. (Rt. 9)
P.O. Box 418
Port Republic, NJ 08241
(609) 748-2020
Matthew.Heyl@dep.nj.gov

Education

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

- Major: Marine Biology

BROOKDALE COMMUNITY COLLEGE

- Major: Environmental Science

Experience

FISHERIES MARINE BIOLOGIST | NEW JERSEY DIVISION OF FISH AND WILDIFE | 11/18 TO CURRENT

- Oversee New Jersey's commercial fisherman and dealer reporting
 - Supervising the entry in the state's compliance file, entry of report in SAFIS eTRIPS, QA/QC of entry, and uploading of data to ACCSP
 - Reviewing commercial dealer reports in SAFIS eDR for accuracy
 - Reaching out to commercial fisherman via by phone, email, letter or in person to discuss reporting requirements
- Oversee New Jersey's commercial biological sampling
 - At sea observer trips for American lobster and tautog
 - Communicating with commercial fisherman for dockside sampling
 - Supervise and participate in the processing of commercially important species
- Active member on the ACCSP Commercial Technical, Information Systems, and Standard Codes committees
- New Jersey's contact for confidential data access for ACCSP's data warehouse
- Processing of data request from ACCSP and state biologist
- Participating in NJDFW field sampling
- Supervising hourly and summer employees
- Writing technical reports for ASMFC managed species
- Grant writing for proposals of funding

FISHERIES SPECIALIST | ATLANTIC COASTAL COOPERATIVE STATISTICS PROGRAM | 01/18 TO 11/18

- 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

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NJ Bureau of Marine Fisheries

Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries

- 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

HOURLY 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 timeline 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

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

Skills & Abilities

WORK RELATED CERTIFICATES

- ASMFC Introduction to Stock Assessment
- Rutgers Introduction Fisheries Science for Stakeholders
- US Fish and Wildlife Electro- Fishing
- PADI – Advanced Scuba Diver
- New Jersey Safety Boating Certificate (with driver license endorsement)

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NJ Bureau of Marine Fisheries

Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries

PUBLICATIONS AND PRESENTATIONS

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

Presentations:

- Heyl, M. "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, Jacques Cousteau National Estuarine Research Reserve, Tuckerton, NJ.

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NJ Bureau of Marine Fisheries

Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries

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EDUCATION

Stockton University

B.S. in Marine Science: Marine Biology Concentration
GPA: 3.10

Galloway, NJ
Graduated: May 2017

Rowan College at Gloucester County (RCGC)

A.S. in Marine Science
GPA: 3.59

Sewell, NJ
Graduated: December 2014

PROFESSIONAL EXPERIENCE

Fisheries Specialist

Atlantic States Marine Fisheries Commission

February 2019 – present
Port Republic, NJ

- Contracted with *Atlantic Coastal Cooperative Statistics Program (ACCSP)* to work with *New Jersey Division of Fish & Wildlife (NJDFW)*
- Manage New Jersey commercial fisheries data and ensure accuracy of fishery dependent data being submitted in *Standard Atlantic Fisheries Information System (SAFIS)*
- Work within the SAFIS Management System to manage data such as participants, permits, and SAFIS accounts
- Work with fishermen to provide accurate reporting on their NJ Harvester Trip Reports
- Dockside sampling and data collection for New Jersey commercial fisheries
- Extract hard parts (otoliths, scales, and opercula) from commercially important NJ marine species
- Prepare and submit proposals, semi-annual reports, and final reports for each grant period.
- Prepare and submit New Jersey participant and dealer information for data uploads to Data Warehouse
- Complete data requests for NJDFW staff involving confidential and non-confidential fisheries data

Hourly Fisheries Technician

New Jersey Division of Fish & Wildlife

May 2018 – February 2019
Port Republic, NJ

- Assist in field activities, including inshore and at-sea sampling surveys of important NJ species
- Dockside sampling and data collection of commercial and recreational fisheries
- Work with *Atlantic Coastal Cooperative Statistics Program (ACCSP)* staff to enter and ensure accuracy of fishery dependent data using *Standard Atlantic Fisheries Information System (SAFIS)*
- Work with fishermen to provide accurate data on their NJ Harvester Trip Reports
- Extract hard parts (otoliths, scales, and opercula) from commercially important NJ marine species

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NJ Bureau of Marine Fisheries

Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries

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LAURA E. VERSAGGI

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(856)-562-7903

- Follow laboratory procedures to mount scales and clean opercula to prepare them for aging
- Review proposals and reports for errors and suggest edits
- Transcribe audio from lobster vessel observer trips into database
- Conduct public outreach events
- Maintenance of field and laboratory equipment

Assessment Coordinator

November 2015 – February 2019

Conserve Wildlife Foundation of New Jersey

Manahawkin, NJ

- Sub-contracted by *Marine Academy of Technology and Environmental Science*.
- Assist in removal of derelict fishing gear from Barnegat Bay
- Assess the condition, by-catch, and organism growth of derelict fishing gear
- Database management and analysis

Program Coordinator

May 2015 – February 2019

Marine Academy of Technology and Environmental Science

Manahawkin, NJ

- Assist in activities, programs and projects for Project Terrapin
- Assist in raising diamondback terrapin hatchlings
- Assist in creating nesting habitats
- Create educational materials and conduct outreach events
- Database management and analysis

PRESENTATIONS

NJ Diamondback Terrapin Meeting, The Wetlands Institute

October 13, 2017

- Poster: Removal and Assessments of Derelict Fishing Gear from Barnegat Bay

Stockton University NAMS Research Symposium

April 28, 2017

- Poster: Removal and Assessments of Derelict Fishing Gear from Barnegat Bay
- Poster: Determination of Important Chemical and Nutrient Trends Along an Estuarine Salinity Gradient

Ocean Planet: Where the River Meets the Sea, Stockton University

October 29, 2015

- Guest Lecture on diamondback terrapins with hatchling measurement activity

CERTIFICATIONS AND SKILLS

- Microsoft Office Suite
- Standard Atlantic Fisheries Information System (SAFIS)
- NJ Boating Safety Certificate

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NJ Bureau of Marine Fisheries

Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries

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LAURA E. VERSAGGI

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COURSEWORK

Barnegat Crab Pot Project

- Independent study student research project
- Collected and analyzed data for poster presentation at student research symposium

Spring 2017

Stockton University

Analysis of Sediments and Seawater

- Independent laboratory analysis of dissolved micronutrients.
- Analyzed results for poster presentation at student research symposium

Spring 2017

Stockton University

Biostatistics I & II

- Statistical analysis of biological data
- Statistical analysis in Excel and WinSTAT

Fall 2016-Spring 2017

Stockton University

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NJ Bureau of Marine Fisheries

Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries

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FY 2021
Atlantic Coastal Cooperative Statistics Program (ACCSP)
Funding Request Proposal – June 12, 2020
Revised Proposal – August 11, 2020

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

Principal Investigator: Amy Dukes, SCDNR Fisheries 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: \$56,923 (Excludes 5% NOAA Administrative Fee)

Requested Award Period: One-year, September 1, 2021 thru August 31, 2022, 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 would 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 manage fisheries effectively and efficiently. 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 sale/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 the 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 landed 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 that are currently using the provided data platforms have successfully transitioned to this reporting method. Staff are still actively engaged in outreach and education for several new/returning dealers. 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 as well. There are very few state-only dealers that have shown interest 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 in regards (??) to data requests/corrections. Additionally, work has begun with ACCSP staff to revise the existing Standard Atlantic Fisheries Information System (SAFIS) platform, which was developed in 2010, to ensure that all of the data parameters are updated. This process is very slow to progress, given 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 Agency's 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. Data quality 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 integrity? 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 and help 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 SAFIS or the 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 additional biological samples for species of interest to SCDNR.
 - Port agents help to ensure that wholesale seafood dealers are completing the mandatory trip tickets 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 to 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 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 licensed 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 their 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 end of each quarter.
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.	Count 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, 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 - FY2021

	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	\$41,404
Database Manager (Catch & Effort - EH)	1	\$4,609	6	\$27,660
Biologist I (Commercial Outreach - JD)	2	\$6,564	4	\$13,128
Data Administrator (Catch & Effort - VG)	2	\$6,862	5	\$17,155
Biologist I (Biological - DP)	2	\$6,436	8	\$25,744
Biologist I (Biological - EM)	2	\$6,436	8	\$25,744
Total Salary Costs		\$30,907		\$150,835
Fringe Costs (40%)		\$12,363		\$60,334
Indirect Costs (30.47%)		\$9,417		\$45,959
Total Personnel Expenses		\$52,687		\$257,128
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.		\$1,000		\$2,500
Postage (incoming, business reply mail) The yearly fee to hold a USPS Business Reply account is \$965.00 Providing free return mail is an incentive for accurate and timely reporting from dealers and has proven to be very successful.		\$412		\$1,500
Postage (outgoing, forms, notices) This amount reflects the average amount spent to send mail to dealers. Monthly reminder letters are sent to delinquent dealers, and upon request, user manuals, logbooks, and additional forms are sent 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 organization materials, clipboards, fin-clip vials, filet knives.		\$912		\$3,000
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.		\$1,412		7,000
Total Miscellaneous Expenses		\$4,236		\$15,500
Total Costs		\$56,923		\$272,628
Total Project Cost				\$329,551
Percentage Contribution		17%		83%

2. BUDGET – FY20 – 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	\$41,404
Database Manager (Catch & Effort - EH)	2.5	\$11,188	4	\$17,900
Biologist I (Commercial Outreach - JD)	3	\$9,558	3	\$9,558
Data Administrator (Catch & Effort - VG)	3	\$9,993	4	\$9,994
Biologist I (Biological - DP)	6	\$18,744	4	\$12,498
Biologist I (Biological - EM)	6	\$18,744	4	\$12,498
Total Salary Costs		\$68,227		\$103,852
Fringe Costs (38%)		\$25,926		\$39,464
Indirect Costs (16.47%)		\$11,237		\$17,104
Total Personnel Expenses		\$105,389		\$160,420
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.		\$2,550		\$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.		\$500		\$1,500
Postage (outgoing, forms, notices) This amount reflects the average amount spent to send mail to dealers. Monthly reminder letters are sent to delinquent dealers, and upon request, user manuals, logbooks, and additional forms are sent 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 organization materials, clipboards, fin-clip vials, file knives.		\$2,700		\$1,000
Travel Port Agents will travel to dealers to intercept commercial fishing vessels and collect biological samples. Current rates for SCDNR vehicles are 50.5 cents per mile. Daily round-trips can average as high 200 miles.		\$2,207		\$6,000
Total Miscellaneous Expenses		\$8,457		\$11,000
Total Costs		\$113,846		\$171,420
Total Project Cost				\$285,266
Percentage Contribution		40%		60%

BUDGET NARATIVE
(Requested Funding Period, FY21)

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-2020- TBD
Project Period: 1 September 2021 – 31 August 2022
1 Year Funding: \$56,923
Prepared by Amy Dukes (PI)

Personnel (Salaries) \$30,907: Five SCDNR employees' salary time will be utilized with these funds. The five current employees are: Database Manager for 1month (\$4,609); Commercial Outreach Coordinator for 2 months (\$6,564); Wildlife Biologist I (Port Agent) for 2 months (\$6,436); Wildlife Biologist I (Port Agent) for 2 months (\$6,436); and a Data Compliance Administrator for 2 months (\$6,862).

Fringe Benefits \$12,363: The current SCDNR fringe benefit cost is set at 40% for salary employees. These rates are within the maximum range set forth by NOAA.

Contractual: \$1,912: 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.

Supplies and Materials \$912: General office supplies including envelopes (letter and large mailers), pens, printing paper, three-ring binders (for user manuals), and file organization 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 \$1,412: 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 \$9,417: The current SCDNR indirect cost is set at 30.47% which is only applied toward salaries and wages.

Totals: \$56,923

BUDGET NARRATIVE
(Approved Funding Period, FY20)

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-2020- TBD
Project Period: 1 September 2020 – 31 August 2021
1 Year Funding: \$113,846
Prepared by Amy Dukes (PI)

Personnel (Salaries) \$68,227: Five SCDNR employees' salary time will be utilized with these funds. The five current employees are: Database Manager for 2.5 months (\$11,188); Commercial Outreach Coordinator for 3 months (\$9,558); Wildlife Biologist I (Port Agent) for 6 months (\$18,744); Wildlife Biologist I (Port Agent) for 6 months (\$18,744); and a Data Compliance Administrator for 3 months (\$9,993).

Fringe Benefits \$25,926: 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: \$3,550: 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 \$2,700: General office supplies including envelopes (letter and large mailers), pens, printing paper, three-ring binders (for user manuals), and file organization 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 \$2,207: 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 \$11,237: The current SCDNR indirect cost is set at 16.47% which is only applied toward salaries and wages.

Totals: \$113,846

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.
2018	\$168,870	1 July 2018 – 30 June 2019	Catch and Effort data collection from the Commercial Module and Biological Sampling efforts.
2019	\$113,846	1 July 2019 – 30 June 2020	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 electronic 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 Fishery Management Council makes recommendations to NMFS-SERO based in part by SCDNR fisheries independent and dependent data collections.** 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 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 83% 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 downloads(?) 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 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 halting? 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 at minimum quarterly, ensuring that all SC trip-level catch and effort data has been converted to ACCSP codes and follows all established standards. Any data refresh, based upon continuous QA/QC efforts by SCDNR staff, will be provided, as necessary.

Level Funding – This proposal reduced in value accordingly, 33% reduction from previous year.

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 halting 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	UNLOADING DATE:	07 / 01 / 15
NUMBER OF TRAPS PULLED:	50	SOAK TIME (HOURS):	24

CIRCLE WATERBODY WHERE MOST OF CATCH WAS MADE

020	Ashley River	300	ICWW: Pices 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) 953-0362

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.

631	# CP LINES	# CP HOOKS PER LINE	TOTAL LBS FISHED	675 (7%) SURFACE LONGLINE BOTTOM LONGLINE	# TRAPS USED	# HAULS	TOTAL SOAK TIME (HRS)	# CP DIVES	# CP SPEARS	# CP DIVES
631 BOB & REEL (small)				# CP SETS						
633 BANDIT REEL	4	3	52	# CP HOOKS PER SET						
636 ELECTRAMATE				LENGTH (MILES)						
660 TRELL	1	1	4	TOTAL SOAK TIME (HRS)						
665 MACKEREL-TRELL				DAYS FISHED						
800 GILL NET	LENGTH (TRIP)	TOTAL SOAK TIME (HRS)		HOURS FISHED	GIRDSN STOCK					
					LINE LENGTH (FT)	# CP HOOKS	HRS FISHED			

CIRCLE AREA WHERE MOST OF CATCH WAS MADE

3377	<- 60 MILES OFF TOWN TO CAPE FEAR (50000')	3377	> 60 MILES OFF-TOWN (50000' - 90000')	3477	<- 60 MILES OFF-SOUTHPORT - MORRISHEAD CITY	3796	<- 60 MILES OFF CHARLESTON (50000' - 60000')	3278	> 60 MILES OFF CHARLESTON-CHAR. HUMP	3208	BLAKE PLATAAU

Code	KIND	SIZE	HP	GEAR	LBS	BOAT PRICE	TOTAL	Code	KIND	SIZE	HP	GEAR	LBS	BOAT PRICE	TOTAL	
1423	Gag Grouper	U	GP	613	975	2.90	2827.50	4473	Golden Tilefish	S	S	CP				
1424	Scamp	U	GP	613	295	2.90	855.50	4475		M	M	CP				
1416	Red Grouper	U	GP	613	26	2.35	61.10	4471		L	L	CP				
1412	Rock Hind (Stoneberry)	U	GP	613	34	2.85	96.90	4670	Ungraded	U	CP					
1414	Snowy Grouper	S	S	GP	613	150	2.55	382.50	0570	Cobia	U	CP				
1414		M	M	CP	613	321	2.65	850.65	1050	Dolphin	U	CP	660	80	2.30	184
1414		L	L	CP				4710	Wahoo	U	CP					
1414	Ungraded	U	GP					1940	King Mackerel	U	CP					
1415	Yellowedge Grouper	U	GP					0180	Barracuda	U	CP					
1422	Black Grouper	U	GP					1807	African Pompano	U	CP					
1425	Yellowmouth	U	GP					3420	Roachfish	U	RP					
1426	Yellowfin Grouper	U	GP					1142	Eel	U	RP					
	Other Grouper	U	GP					1550	Hake	U	RP					
3777	B-line	3/4 - 1	S	CP				4321	Sweetfish	100+	J	CP				
3776		1 - 2	M	CP				4322		50-99	L	CP				
3775		2 - 4	L	CP				4323		26-49	M	CP				
3765	Ungraded	U	CP					4327	Chunks	U	CP					
3302	Red Porgy (Flake)	U	CP					4320	Ungraded	U	CP					
3764	Red Snapper	U	GP	613	38	2.90	110.20	5131	Woodfish	U						
3763	Mutton Snapper	U	GP					0193	Barracuda	U						
3767	Yellowtail Snapper	U	GP					4655	Yellowfin Tuna	U	HC	660	42	2.90	121.80	
	Other Snapper	U	GP					4658	Blackfin Tuna	S	HC					
3790	Hogfish	U	GP	613	7	2.55	17.85	4656	Tuna, unclassified	M	HC					
3355	Black Seabass	S	S	RP				3505	Shortfin Mako Shark	L						
3353		M	M	RP				3495	Blacktip Shark	U						
3351		L	L	RP				3503	Spiny Dogfish	U						
3351		XL	XL	RP				3518	A. Sharpnose	U						
3360	Ungraded	U	RP					3511	Smooth Dogfish	U						
3308	Knobbed Porgy (Goli)	U	RP					3485	Blacknose	U						
1441	White Croaker	U	RP					3481	Finetooth	U						
4560	Triggarfish	U	RP					3475	Shark fin	U						
5260	Mixed Fish	U	RP						Other Shark	U						
3610	Almaco Jack	U	CP						Albacore			660	220	40	88.00	
3812	Greater Amberjack	U	CP												TOTAL	
3817	Banded Rudderfish	U	CP													
4474	Grey Tilefish	U	CP													

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 #	
				03FTL79240	
NO. OF CREW (INCLUDE CAPT)	2	VESSEL NUMBER:	999999	VESSEL NAME:	Sea Robin
TRIP START DATE:	06 / 04 / 16	UNLOAD DATE:	06 / 04 / 16		

CIRCLE GEAR USED AND FILL IN INFORMATION

810	HANDLINES (ROD & REEL)	345	TRAPS	830	HAUL SEINE
# OF LINES		# TRAPS USED	30	LENGTH OF NET (FT)	
# OF HOOKS PER LINE		# HAULS	1	TOTAL SOAK TIME (HRS)	
TOTAL HOURS FISHED		TOTAL SOAK TIME (HRS)	48		

	TOTAL LENGTH OF NET(S)	TOTAL SOAK TIME (HRS)	855	BY HAND	878	BOTTOM LONGLINE
			780	GIG	883	FISH TROTLINE
882	HAND CAPTURE		733	CAST NET	880	CRAB TROTLINE
703	DIP NET	FEET		HOURS ACTIVELY FISHING		# OF SETS
825	SET SHAD NET	FEET				# OF HOOKS PER SET
885	DRIFT SHAD NET	FEET				TOTAL SOAK TIME (HRS)
801	HERRING GILL NET	FEET				LENGTH (FEET) - FISH GEAR ONLY
800	GILL NET	FEET				

CIRCLE WATERBODY WHERE MOST OF CATCH WAS MADE

241	Atlantic Ocean	299	Folly River	470	Savannah River
020	Ashley River	300	IC/W - Prides Inlet - Sullivan	420	South Edisto
010	Black River	310	Little River	430	St. Helena Sound
030	Broad River	350	May River	480	Stono River
050	Bulls Bay	370	Murrell's Inlet	310	Waccamaw River
070	Calhoun Sound	130	North Edisto	330	Wando River
110	Charleston Harbor	390	Pea Dee River	350	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	Pintfish		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			
3340	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 12578, Charleston, SC 29412-2578 (843) 953-9313 FAX (843) 953-9342
 11-1070

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 1996

Coastal 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 an 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 the
Coordinating Council and the Operations Committee
Atlantic Coastal Cooperative Statistics Program
1050 N. Highland St., Ste. 200 A-N
Arlington, VA 22201

FY21: SAFIS Expansion of Customizable Fisheries Citizen Science Data Collection Application

Submitted By:

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SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

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Jessica McCawley, Chair | Mel Bell, Vice Chair
John T. Carmichael, Executive Director

August 17, 2020

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

We are pleased to submit the proposal titled, “FY21: SAFIS Expansion of Customizable Fisheries Citizen Science Data Collection Application”. This application is being submitted as year 2 of the FY20: SAFIS Expansion of “SAFMC Release” and “NC DMF Catch U Later” Discard Reporting Applications” funded project. This proposal has been revised from the original proposal submitted on June 11, 2020. Reviewers did not provide specific questions for this proposal, but Project PI’s made sure the guidance provided to all proposals was addressed in this revised version.

The FY21 proposal builds on the work that will be completed through the FY20 project but also incorporates some new objectives. A summary of the FY21 proposal objectives are below, highlighting the changes in scope of work.

- The FY21 proposal will continue data collection for the SAFMC Release project using the ACCSP release reporting tool developed via the FY20 project.
- The FY21 proposal will continue the development of the integrated, customizable fisheries data application. As part of the FY20 project, scoping meetings will be held with ACCSP, Harbor Light Software, and ACCSP partners and technical committee representatives to begin planning for the development of this app. These meetings will identify the project scope and approach, as well as, identify data fields to include in the future app. Using the information gained from the FY20 scoping meetings, the FY21 project proposes to expand the data collection fields available in the customizable app both within and beyond discard reporting to support development of citizen science and other non-traditional data collection projects among partners.
- The FY21 proposal includes a survey of SAFMC Release project participants to help inform the expansion of the customizable app and improve volunteer engagement.
- The FY21 proposal will work to develop a socio-economic project based on input from the FY20 scoping meetings to push the flexibility of the app beyond biological data collection.

- The FY21 proposal's primary program priority remains biological sampling (90%). However, the secondary module has changed from catch and effort (10%) to socio-economic (10%).
- The FY20 proposal was submitted by SAFMC and NCDMF. The FY21 proposal is being submitted by SAFMC. Although NCDMF is not a partner on the FY21 proposal, they have provided a letter of support (see Appendix 1).

Before submission of the initial proposal in June, project PI's consulted with ACCSP staff and decided to submit this as a maintenance proposal since it built on the FY20 project. During their July 2020 review, the Operations Committee and Advisors did not note concern about this proposal being submitted as a maintenance proposal with the changes in scope identified above.

Best,

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Applicant Name: South Atlantic Fishery Management Council (SAFMC)

Project Title: **FY21: SAFIS Expansion of Customizable Fisheries Citizen Science Data Collection Application**

Project Type: Maintenance

Requested Award Amount: \$114,792

Requested Award Period: One year upon receipt of funds

Submission Date: August 17, 2020

FY21 Atlantic Coastal Cooperative Statistics Program (ACCSP) Proposal for the SAFMC

OBJECTIVES:

- Continue development and construction of an integrated, customizable fisheries data application to provide more efficient data collection and reduce future needs for individual applications.
- Continue data collection under the ACCSP release reporting tool via the SAFMC Release project.
- Expand the data collection fields available in the customizable app both within and beyond discard reporting to support development of citizen science and other non-traditional data collection projects among partners.

NEED:

Fishery managers often consider the biology and sustainability of a fish stock alongside socio-economic values of the resource and fishery when developing fishery management plans. Unfortunately, there are long-standing data gaps which, if researched, could be useful in developing an improved management strategy. Due to limited funding, some organizations have started to collect data using non-traditional methods, such as citizen science, to help address those needs. Examples of this can be seen in recent efforts by the South Atlantic Fishery Management Council's (SAFMC) *Scamp Release* project and North Carolina Division of Marine Fisheries' (NCDMF) *Catch U Later* project that work with fishermen to collect information to better characterize Scamp Grouper and flounder discards, respectively, via the use of mobile applications.

Catch and release mortality has been an increasing component of the total mortality experienced by many stocks. Because released fish are not available for sampling by typical dockside monitoring programs, and observer coverage ranges from limited in commercial and for-hire fisheries to non-existent in private recreational fisheries in the South Atlantic region, there is often no information available to characterize these losses for stock assessment modeling. As a result, improving information on released fish is a common stock assessment research need and is often a top priority in agency research plans. In the ACCSP request for 2021 proposals, information on releases and discards as well as APAIS/MRIP independent biological sampling for recreational fisheries are the #2 and #4 priorities, respectively. Discard characterization and information on discard reduction practices are priorities in the South Atlantic Fishery Management Council's (SAFMC) Research and Monitoring Plan for 2020-2025 and for the SAFMC's Citizen Science Program.

The SAFMC developed the reporting application *SAFMC Release* through its Citizen Science Program to provide information on released Scamp Grouper to be considered for use in an upcoming stock assessment and for future management. *SAFMC Release* provides a streamlined approach for fishermen to provide a picture of discarded fish along with additional details such as length, release location and depth, condition, and use of barotrauma mitigation techniques. Because there is a severe lack of details on discarded fish across all fishery sectors, this app was developed for and is being promoted to all sectors - commercial, for-hire, and private recreational fisheries. The NCDMF has developed *Catch U Later*, a reporting app for recreational discards to enable the separation of flounder

Yellow highlighted comments indicate sections that help with the ranking process.

Green highlighted comments indicate changes made to the initial proposal.

releases into individual species, to collect information on the size of released fish, and information on capture location. Data collected from the *Catch U Later* application will be used to determine the ratio of constituent flounder species within generic flounder discards.

ACCSP and Harbor Light Software have been key partners in the development of both projects with ACCSP providing a portal for data submission and warehousing and Harbor Light Software programming both applications. While both the SAFMC and NCDMF projects are quite different, there is a strong similarity in the tools – the apps – used by each. The SAFMC and NCDMF’s FY20 ACCSP project, “SAFIS Expansion of SAFMC Release and NCDMF Catch U Later Discard Reporting Applications”, will combine these two apps under the ACCSP umbrella into a single discard reporting tool that can be adapted by other partners in the future. It will expand the species that can be reported through the application to all shallow-water grouper (Red, Gag, Black, Scamp, Yellowfin and Yellowmouth Groupers; Red Hind; Rock Hind; Coney and Graysby) for *SAFMC Release* and to flounder, Red Drum, kingfish (*Menticirrhus* spp.), and trout (e.g. Spotted Seatrout and Weakfish) for NCDMF’s *Catch U Later*.

Collecting information on released fish is just one of the challenges faced by ACCSP partners that can be addressed through innovative electronic tools. Given the astounding proliferation of electronic tools in the form of smartphone apps impact nearly all aspects of people’s lives today, and the willingness of the public to openly share information and experiences, it is not surprising that apps are increasingly viewed as a promising approach for collecting fisheries data. Electronic applications offer obvious benefits to the challenge of collecting fisheries data not available to traditional sampling efforts. They can be developed to address nearly any fisheries data collection need, reduce data entry errors, improve timeliness, and lower labor demands as has been shown in the transition of MRIP APAIS from paper to electronic data collection. The relative ease with which applications can now be developed may be good for finding innovative solutions to gather data, but it carries the risk of excessive “stovepiping” that results in unique data streams that are difficult to coordinate with other data streams. There is also the risk that a multitude of highly specific applications will impose excessive maintenance costs and lead to confusion amongst the fishing and scientific communities. Therefore, oversight and intentional design are required to ensure that applications collect valid information and that the data collected can be used in management, both of which are core elements in the SAFMC’s Citizen Science Program. The SAFMC Citizen Science Program is uniquely situated to address design and data quality concerns through its existing structure to review and support citizen science project development, and to provide coordination through its regional partnerships and infrastructure.

The SAFMC’s Citizen Science program was developed over the course of several years with the guidance of a wide array of stakeholders and partners. The program’s overall approach is to support projects that fill data gaps and address research needs; to complement existing programs and partnerships; to foster fishermen and scientist collaboration; and to have intentional project design so there is a direct application of the data for use in management or stock assessments. As part of this intentional design, projects supported by the program are encouraged to form a design team of diverse stakeholders (e.g. fishermen, scientists, managers, etc.) to provide guidance throughout the development and implementation of a project. Scientist input is critical to ensure projects are designed so that data collected can meet its intended use and fishermen or other stakeholders input helps ground projects in reality to ensure data collection methods are feasible. Through the development of its

Yellow highlighted comments indicate sections that help with the ranking process.

Green highlighted comments indicate changes made to the initial proposal.

infrastructure, the program has also developed project support resources available through the SAFMC's website.

Funding for citizen science is often limited and developing a comprehensive and flexible app that can be used to collect information from a variety of sources would be extremely helpful in reducing costs for different projects, reducing time needed to create an app from the ground up, and increasing consistency in data fields and structure. The SAFMC and NCDMF's FY20 ACCSP project will begin planning for the development of a comprehensive and flexible reporting tool that could be applied to a variety of fisheries data issues. This is a complex undertaking that would build off the release reporting tool to allow reporting of more data types (e.g. other biological, socio-economic, etc.) collected through non-traditional methods, such as citizen science. The long-term goal is to develop a menu-driven tool that partners could use to easily create a customized app by selecting specific data fields, without the need to develop stand-alone apps for each new project or data challenge. Through FY20 project funding, scoping meetings will be held in 2020-2021 with ACCSP, Harbor Light Software, and ACCSP partners and technical committee representatives to develop a list of data needs and objectives for the integrated, flexible app. These meetings will identify the project scope and approach, as well as, identify data fields to include in the future app. Meetings will focus on data fields necessary to expand the discard reporting tool to better meet partner needs and then identify other data collection needs partners would like to pursue via citizen science and/or other non-traditional methods. For example, the SAFMC Citizen Science Program's research priorities include developing projects to collect additional biological samples (age, maturity, and/or genetic samples) from recreational fisheries, as well as, collecting information on fishing infrastructure throughout the South Atlantic region – both of which could potentially benefit from the development of the customizable application proposed in this project. ACCSP's Recreational Technical Committee is planning to begin discussions on citizen science **or voluntary** data collection standards for recreational fisheries which will also help inform these scoping meetings.

This proposal will continue data collection on released fish using the ACCSP customized release reporting tool via the *SAFMC Release* project. Using the information gained from the FY20 scoping meetings, the proposal will also expand this tool into an integrated, customizable fisheries data collection application to support citizen science and other non-traditional data collection projects for partners moving forward. The SAFMC's Citizen Science Program is in position to lead and coordinate efforts with other partners in the development of this flexible fisheries citizen science application.

RESULTS AND BENEFITS:

The result of this project will be to provide a customizable fisheries data collection tool set designed for citizen science that is flexible and scalable to meet different partner and management needs and is able to support multiple projects that can be configured to address specific questions across fisheries sectors and jurisdictions. This will reduce costs to develop a new app to collect important data, reduce time for creating a new app which could take over 6 months to create (half of the grant award time period), and improve consistency across apps from multiple agencies for data fields.

This proposal will build on the work done in the FY20 proposal, which aims to create a basic framework for a customizable fisheries app, prototyping support for projects which implement the

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existing data collection needs of *SAFMC Release* and *NCDMF Catch U Later* applications. The intent of this proposal is to create a “Project Builder” application that works with an expanded list of data collection fields to build project-specific data collection interfaces. The list of new data fields to be supported will address the needs of newly identified data collection projects in addition to the output of the FY20 scoping process that also addresses the needs of the SAFMC’s Citizen Science Program.

Project partners anticipate that this framework will be further improved and expanded through future projects. Developing the Project Builder within the SAFIS system will ensure it meets ACCSP data quality and accessibility standards, and it is compatible with existing data collection programs, available to all partners, and kept up to date.

The release reporting application developed through the FY20 project was envisioned as the first step in the development of the customized data collection tool. This project will build an innovative released fish information platform, consisting of a core application used by anglers with iOS and Android functionality for both phones and tablets, and specific profiles, created by the Project Builder interface, tailored to unique projects.

Observer funding across most fisheries along the Atlantic Coast has never been adequate, likely never will be, and many fisheries, such as the private recreational or the commercial snapper grouper hook and line, are challenging to sample through conventional observer techniques due to their sheer volume of participants and small vessels. Although a few specific fisheries are highlighted in this project, the proportion of catch attributed to releases is increasing in many popular fisheries along the Atlantic Coast, indicating that other ACCSP partners likely share the needs addressed by this project. The FY20 scoping meetings will help us understand how the ACCSP discard reporting tool could be further adapted to meet partner discard needs. Additionally, it will identify other citizen science and non-traditional data collection needs shared by ACCSP partners that could be built into this tool.

Partners would benefit by being able to create and use an electronic tool without incurring extensive development costs which could be extremely helpful for citizen science or other voluntary data collection programs where resources are often limited. More funds would be available for volunteer engagement which is critical for project success and is labor intensive. It would also give partners more flexibility in responding to timely research and management needs by allowing them to build and deploy project specific apps quickly. ACCSP would benefit by reducing the need for continual API and report development. A generic tool of this type could prove particularly useful as ACCSP moves from the traditional catch and effort data sources and into warehousing the next tier of fisheries data - biological and socio-economic. ACCSP staff were involved in the development of this proposal. If funded, database structures will be built or modified in SAFIS and the Data Warehouse and adequate storage is available to support this project.

Primary Program Priority Addressed by this Project

The customizable reporting application and the supporting project builder tool developed through this project will continue and further expand a tool to collect biological information on the component of catch that is released, addressing the 2021 Request for Proposal priority 1b and Recreational Technical Committee priority 2. The applications will collect biological and fishery data that is independent of APAIS/MRIP, addressing Recreational Technical Committee priority 4.

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The specific benefits to each data type and the rank of the target species within priority matrices included in the app, are addressed for the continuation of the SAFMC project component. The FY20 project scoping meetings will identify additional biological data collection needs for released fish, as well as needs for different types of fisheries data (e.g. other biological and/or socio-economic data) to be incorporated into the app to support future partner projects.

Primary Program Priority: Biological Sampling: 90%

For the SAFMC module, biological information will continue to be collected on released shallow-water groupers (Red, Gag, Black, Scamp, Yellowfin and Yellowmouth Groupers; Red Hind; Rock Hind; Coney and Graysby). in both commercial and recreational fisheries. Scamp, Gag, and Red Grouper are in the top 25% of the biological sampling priority matrix. The commercial snapper-grouper hook and line fleet is #5 in the bycatch priority matrix. The *SAFMC Release* module includes:

- Data Collected for each trip: trip type (commercial, recreational, headboat, charter), date, user (ACCSP ID)
- Data Collected for each fish released: species (user's determination), length (based on ACCSP standards), location, depth, time, fate (dead or alive release), hook type, use of barotrauma mitigation (descending device, venting, line cut), and photograph (to validate and evaluate user IDs and lengths)
- Users may also file a 'no fish released' report

Secondary Module as a by-product: Socio-economic: 10%

This project will work to develop a socio-economic project based on input from the FY20 project scoping meetings to push the flexibility of the app beyond biological data. The specific project idea will be identified during the scoping meetings, developed through the SAFMC's Citizen Science Program, and use ACCSP's socio-economic standards as guidance. The Project Builder will be used to develop the data collection tool for the project.

Stock Assessment and Management Benefits and Impact:

By continuing data collection on discarded fish through the *SAFMC Release* project, as well as expanding the opportunity for other partners to collect data on released fish, the positive impact of this project to stock assessments could be substantial and realized by several ACCSP partners. Stock assessments rely upon accurate information on total catch and removals from the stock and accurately allocating those removals to year classes. For fish that are landed, these requirements can be addressed through straightforward methods such as catch reporting or creel surveying to estimate removals and dockside sampling to collect length measurements and age samples (used by methods such as age-length keys to assign fish to age classes). Surveying and dockside sampling approaches cannot work when the fish are released on the water. Using the South Atlantic as an example that is in no way unique, no information is available to classify the size composition of released fish in the commercial snapper grouper hook and line fleet, the private recreational fleet, or the charter fleet. In some areas, fisheries observers are used to collect information on released fish. Observer coverage is limited due to high cost. Moreover, even if funding were available, logistics and liabilities remain a concern for some

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fisheries such as the commercial hook and line snapper grouper fishery which is prosecuted mostly by small vessels, and private recreational fisheries. Extremely limited observer coverage is available for the headboat fleet (primarily funded through ACCSP), but changes in fleet size and behavior raise concerns about the validity of such data to characterize removals from other fishery sectors. This lack of information is a major source of assessment uncertainty, as assumptions must be made to assign released and discard fish into length and thus age classes for the stock assessment.

In years past the lack of accurate information on discarded fish was not a major assessment concern or source of uncertainty, as landed fish generally accounted for the majority of stock removals. However, this is changing as regulations and fishing behavior are leading to increased discarding. For example, in the recent assessment of Red Drum (SEDAR 44¹), the Review Panel noted catch and release fishing was increasing and as a result estimated total removals from the stock was increasingly sensitive to discard mortality rates and discard losses. The Panel also questioned the validity of an assumption that the length frequency of discarded fish was similar to tagged fish. The assumption was necessary due to the lack of any data on the size of released fish that could be used to assign mortalities from release to appropriate length classes. There are several reasons why such an assumption may be invalid and a source of bias in the assessment results, but the total lack of data precludes even an effort to determine the direction of bias or magnitude of uncertainty. The Review Panel considered this data lack significant and an important issue in the Red Drum assessment.

Consider another example of the target fish of this study. The most recent assessment (SEDAR 53²) indicated that over fifty percent of the fishing mortality experienced by Red Grouper is due to discard losses. Given that this stock was found to be overfished and overfishing was occurring, these discard removals are significant, and therefore the assumptions made regarding their size composition are critical. In this instance, the length composition and selectivity for the discard losses was based on observer records from the headboat fishery and it was assumed that these data were representative of all fishery sectors. As noted above, there are no data to test this assumption so its impact on assessment uncertainty and bias is unknown.

A similar lack of information exists to classify the depth where fish are captured and released and the use of barotrauma reducing actions such as venting or descending. Depth and barotrauma reduction are significantly correlated with release mortality rates, but it is difficult to refine the overall release mortality rate applied for a stock assessment without finer scale information on released fish.

Small improvements in estimates of discard mortality, based on data rather than assumption, can result in large changes in the estimated removals from a fish stock. Based on the results of ACCSP-funded headboat observer studies, as cited in the 2019 Recreational Technical Committee proposal, the Red Snapper release mortality was reduced from 37% to 28.5% due to the use of circle hooks. Applying this percentage change to the estimated 2018 MRIP discards reduces the discard losses to the population by 274,000 fish. This is quite a difference when considered in light of the allowable 2018

¹ SEDAR. 2015. SEDAR 44 – Atlantic Red Drum Stock Assessment Report. SEDAR, North Charleston SC. 890 pp. available online at: <http://sedarweb.org/sedar-44>.

² SEDAR. 2017. SEDAR 53 – South Atlantic Red Grouper Assessment Report. SEDAR, North Charleston SC. 159 pp. available online at: <http://sedarweb.org/sedar-53>.

recreational harvest of 29,656 fish. This is also relevant for flounder given the current method applies a ratio of observed catch, which is not an accurate representation of released fish. The ability to accurately characterize discards could substantially improve stock assessments and management decisions.

The **SAFMC's Snapper Grouper** Regulatory Amendment 29, which requires descending devices on-board vessels fishing for or possessing snapper grouper species, **was recently implemented in July 2020**. Federal law requires comparing the No Action alternative (not requiring) with proposed management actions. Having information on usage of descending devices would have benefited the analysis for impacts of requiring a descending device both in the cost to anglers and for estimating changes in the estimate of discard mortality. Luckily, most stakeholders regarded this as a positive management action but quantitative information on fishing practices that can be collected through a flexible data collection app could be used to make more informed decisions on the impact of management actions.

Data Delivery Plan:

Data collection projects will be defined by the Project Builder application and will be stored in SAFIS, where they can be downloaded and interpreted by the angler application on a phone or tablet. The angler application will collect data and deliver that data directly to ACCSP through an API, building on the existing API that currently accepts data from *SAFMC Release* and *Catch U Later*. Data can be entered by anglers when no internet connection is available and later uploaded to SAFIS when a connection exists.

APPROACH:

Task A: SAFMC Release Survey (SAFMC)

Work with contractor/graduate student to conduct a survey of *SAFMC Release* participants to get feedback on the *SAFMC Release* app itself and the transition to the customizable ACCSP release app developed during the FY20 project. Survey results will help inform the expansion of the customizable app in this proposal and be used to better design the app and improve volunteer engagement.

Task B: Further build and add enhancements to the existing ACCSP release customizable reporting application to allow partners to develop separate project profiles using menu driven options identified through FY20 scoping meetings.

Harbor Light Software

- Create a Project Builder application which allows partners to create new data collection projects. Set up separate profiles for specific projects identified in the FY20 scoping meetings to be addressed in the app. The project profiles will ensure users are asked questions relevant to the project that matches their trip.
- Architect the angler application to be more flexible in supporting the additional data fields and project definition needs that other partners may have.
- Add additional species and data fields per FY20 scoping meetings.

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- Investigate and incorporate into the application, new technologies which assist the accurate determination of length from photographs taken by the mobile devices hosting the application
- Modification of communication with the ACCSP-provided API to ensure proper communication of data between the client application and ACCSP databases. ACCSP databases will store transaction records as well as photographs.
- Incorporate analytics data to gain insights into usage patterns of the application such as geographic usage of the application or ease of use of particular features. Similarly, incorporate error reporting features to proactively be alerted to reliability issues with the application after it has been deployed.
- QA/QC the application before releases
- Manage the deployment of the application directly to beta users, and ultimately maintaining a presence in the Google Play Store and Apple App Store
- Provide second-tier technical support for issues found with the application, including correcting errors found in the implementation of the required feature
- Investigate features and or modifications which increase the continued use of the application by the citizen science community.

SAFMC

- QA/QC and test application

ACCSP

- Build appropriate API or modify existing API as needed
- Update and/or build reports as needed and allow easy access to photos that are linked to the trip records.

Task C: Public Outreach (SAFMC)

- Recruit new participants to further participation in the existing project, *SAFMC Release*, and apply engagement strategies to retain current participants.
- Recruit participants for new citizen science project identified during FY20 scoping meetings.
- Notify ACCSP partners of the new SAFIS application.

Task D: SAFIS Application Deployment (ACCSP)

- SAFIS application deployed.
- Reports available in Data Warehouse to view/download data.

Task E: Data collection, QA/QC, and analysis (SAFMC)

- Data successfully submitted via app to SAFIS/Data Warehouse.
- SAFMC provide QA/QC for data collected through their projects; edit/correct as necessary.
- Data made available for assessment and management, as necessary.
- Continue to explore long term solutions for addressing QA/QC and validation needs of the data (e.g. photographic and species identification), considering volunteers and citizen science approaches.

Metadata

Additional information will be recorded during the project to ensure data collected on released fish through the *SAFMC Release* project is properly addressed in management and stock assessment analyses. This includes regulations, such as seasons and bag limits that directly affect release rates; location and trip type; depth; use of descending devices.

GEOGRAPHIC LOCATION:

The SAFIS application will collect data in coastal South Atlantic waters from North Carolina through the East Coast of FL to the FL Keys via the *SAFMC Release* component. The geographic scope of the project includes all ACCSP partners in all regions, as they will be able to use or modify the application to meet specific project needs. NCDMF and the Rhode Island Division of Marine Fisheries have provided letters of support for the project (see Appendix 1).

FUNDING TRANSITION PLAN:

Project contains a defined end point. This is a one-year project.

MILESTONE SCHEDULE:

Table 1. Milestone Schedule

Task	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
SAFMC Release participant survey/evaluation	x	x	x									
Create app enhancements to existing base code and develop project builder	x	x	x	x	x	x						
Update API and reports	x	x	x	x	x	x						
Feedback from users & incorporating changes/fixes in application				x	x	x	x	x				
Public/Partner Outreach					x	x	x	x	x	x		
SAFIS Application Deployment							x					
Data Collection, QA/QC & Analysis	x	x	x	x	x	x	x	x	x	x		
Semi and Annual Report Writing						x				x	x	x

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PROJECT ACCOMPLISHMENTS MEASUREMENTS:

Table 2. Project Accomplishments Measurements

Project Component	Goal	Measurement
<i>SAFMC Release</i> participant survey	Collect feedback on <i>SAFMC Release</i> app and on the transition to the customizable ACCSP release app	Survey complete and feedback collected from user group
Create and add enhancements to <i>SAFMC</i> Application	Modify existing applications to general framework; develop and build Project Builder; gather general feedback	<i>SAFIS</i> application modified based on FY20 scoping meetings and Project Builder complete; updated application tested and ready for deployment
Public Outreach	Continue to promote <i>SAFMC Release</i> project and recruit users for new project identified through FY20 scoping meetings	New users recruited and current users retained for <i>SAFMC Release</i> project; new users recruited for new project identified through FY20 scoping meetings
<i>SAFIS</i> Application Deployment	Have application easily accessible and available	Application accessible through app stores
Data Collection, QA/QC, and Analysis	Users continue to submit data through the app for <i>SAFMC Release</i> project and for the new project identified during FY20 scoping meetings	QA/QC completed; data available for management and stock assessment, as needed

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FY21 COST SUMMARY (BUDGET):

Item	ACCSP Share	Partner Share	Total
PERSONNEL COSTS			
SAFMC Personnel Julia Byrd, Citizen Science Program (10%) Chip Collier, Deputy Director (5%)		\$8,156 \$5,656	\$8,156 \$5,656
SAFMC Project Coordinator	\$45,760		\$45,760
Graduate student to conduct survey work	\$2,400		\$2,400
Indirect Costs (20%)	\$9,632		
CONTRACT			
Contractor Software Development	\$55,000		\$55,000
SUPPLIES			
Recruitment/Retention Promotional Items	\$2,000		\$2,000
TOTAL	\$114,792	\$13,812	\$128,604
Percentage	89.3%	10.7%	100%

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FY21 BUDGET NARRATIVE:

Personnel (\$57,792): Personnel funds of \$45,760 will be used by SAFMC to hire a Project Coordinator to help oversee the *SAFMC Release* project and help develop and implement the new project identified during the FY20 scoping meetings. Personnel cost is estimated at \$22/hour for a year (2080 hours).

Additionally, \$2,400 will be used to contract with a graduate student to conduct a survey of *SAFMC Release* participants to get their feedback on the overall app and the transition to the customizable ACCSP release app. Survey results will help inform the expansion of the customizable app in this proposal and be used to better design the app and improve volunteer engagement. Costs are estimated for 120 hours of work at \$20/hour.

Indirect charges of 20% are applied to personnel charges for a total of \$9,632.

Contractual (\$55,000): Harbor Light Software will provide software development services to enhance the *Release + Catch U Later* application developed in FY20, and to build a “Project Builder” application, which allows project owners to create customizable data collection applications. Harbor Light Software will test the software prior to release and manage the applications in the app stores. Costs are based on estimates of 270 hours of software development at \$170/hour and 180 hours of QA/QC at \$50/hour.

Supplies (\$2,000): SAFMC will utilize supply funds to print promotional materials (e.g. wallet cards, postcards) to recruit users for the *SAFMC Release* project and the new project identified during the FY20 scoping meetings. Funds will also be used to purchase small promotional items (e.g. fishing towels, measuring tapes) to help increase recruitment and retention of participants.

FY20 COST SUMMARY (BUDGET):

Item	ACCSP Share	Partner Share	Total
PERSONNEL COSTS			
SAFMC Personnel Julia Byrd, Citizen Science Program (10%) John Carmichael, Deputy Director (5%)		\$7,800.00 \$6,961.20	\$14,761.20
SAFMC QA/QC process part time position	\$24,000		\$24,000.00
NC DMF Personnel Drew Cathey, Biologist II (10%) Chris Wilson, Biologist Supervisor (5%)		\$4,710.10 \$3,277.80	\$7,987.90
NC DMF QA/QC process part time position	\$24,000		
CONTRACT			
Contractor Software Development	\$45,000		\$45,000
SUPPLIES			
Recruitment/Retention Promotional Items	\$500	\$1000	\$1500
TRAVEL			
In-person meeting	\$25,000		\$25,000
TOTAL	\$118,500.00	\$23,749.10	\$142,249.10
Percentage	83%	17%	100%

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FY20 BUDGET NARRATIVE:

Personnel (\$48,000): Personnel funds will be used by SAFMC and NC DMF to each hire QA/QC process part time position. Personnel cost is estimated at \$20/hour for a total of 1200 hours for each position. The positions will assist with Task D: Data Collection, QA/QC, and Data Analysis. Job duties will include assisting with QA/QC and exploring long term solutions for addressing QA/QC and validation needs of the photographic and species identification data, considering volunteers and citizen science approaches.

Supplies (\$500): SAFMC will utilize supply funds to print promotional materials (e.g. wallet cards, postcards) to inform users of transition to new SAFIS application and recruit new users. Funds will also be used to purchase small promotion items (e.g. fishing towels, measuring tapes, etc.) to help increase recruitment and retention rates of participants.

Contractual (\$45,000): Harbor Light Software will develop the application software, using the software written for the existing *SAFMC Release* and *NC DMF Catch U Later* applications as core reference with enhancements for branding, additional species, modifications to the ACCSP API and flexibility for supporting different data collection profiles. Harbor Light will also provide second-tier technical support, management of the deployment of the application through respective app stores, perform technical feasibility analysis of image-based length determination technologies and identify architectural enhancements to support a wider range of data collection applications.

Travel (\$25,000): Travel funds will be used for the in-person workshop associated with Task E to develop needs and objectives for an integrated, flexible application. Workshop will be two days with approximately 20 participants. Estimated costs include meeting space (\$5000), participant travel (\$10,000) and lodging, per diem, and miscellaneous participant costs (\$10,000).

Table 3. Maintenance Project History

Fiscal Year	Title	Cost	Results
2020	SAFIS Expansion of “SAFMC Release” and “NC DMF Catch U Later” Discard Reporting Applications	\$118,500	<p>This project will: combine two similar released fish reporting applications (SAFMC Release and NC DMF Catch U Later) into ACCSP SAFIS as a single, flexible and customizable release and discard reporting tool that is available to other partners; expand the SAFIS application to increase the species that can be reported; begin planning for development of an integrated, customizable data collection application</p> <p>Funds have recently been received for this project - so work is just starting to get underway. Project partners have met to discuss the overall timeline and impacts COVID-19 may have on the project. Work combining the SAFMC Release and Catch U Later apps will begin in the upcoming months. The SAFMC has begun to revise volunteer training materials for the species expansion to all shallow water grouper. An organizing committee has been formed to begin planning for the FY20 scoping workshop. Due to COVID-19, this in-person workshop will likely transition to a series of virtual meetings.</p>
2021 - proposed	SAFIS Expansion of Customizable Fisheries Citizen Science Data Collection Application	\$114,792 - proposed	<p>This application proposes to: continue development and construction of an integrated, customizable fisheries data application; continue data collection under the ACCSP release reporting tool via SAFMC Release project; and expand the data collection fields available in the customizable app both within and beyond discard reporting to support development of citizen science and other non-traditional data collection projects among partners.</p>

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Summary of Proposal for Ranking

Proposal Type: Maintenance

Primary Program Priority: Biological Sampling - 90%

- The released fish reporting application incorporated in SAFIS will provide a tool for collecting biological information on the component of catch that is released, addressing 2020 Request for Proposals priority 1b and Recreational Technical Committee priority 2. The applications will collect biological and fishery data that is independent of APAIS/MRIP, addressing Recreational Technical Committee priority 4.
- For the SAFMC module, biological information will be collected on released shallow water groupers, in both commercial and recreational fisheries. Scamp, Gag, and Red Grouper are in the top 25% of the biological sampling priority matrix. The commercial snapper-grouper hook and line fleet is #5 in the bycatch priority matrix.

Data Delivery Plan:

- Data collection projects will be defined by the Project Builder application and will be stored in SAFIS, where they can be downloaded and interpreted by the angler application on a phone or tablet. The angler application will collect data and deliver that data directly to ACCSP through an API, building on the existing API that currently accepts data from *SAFMC Release* and *Catch U Later*. Data can be entered by anglers when no internet connection is available and later uploaded to SAFIS when a connection exists.

Project Quality Factors:

- **Multi-partner/Regional impact including broad applications:** This project will continue the development and construction of an integrated, customizable fisheries data collection application. It will expand the data collection fields available in the app both within and beyond discard reporting to support development of citizen science and other non-traditional data collection projects among partners. The geographic scope of the project includes all ACCSP partners in all regions, as they will be able to modify the application to meet specific project needs. The *SAFMC Release* component collects data through the South Atlantic and across all sectors for species with significant release mortality concerns. NCDMF and the Rhode Island Division of Marine Fisheries have provided letters of support for this project (see Appendix 1).
- **Contains funding transition plan:** Project contains a defined end point. This is a one-year project.
- **In-kind contribution:** 10.7%
- **Improvement in data quality/quantity/timeliness**
 - Provides improvement in data quality and quantity.
 - There is currently no data available to assign released shallow water groupers to length classes other than limited commercial and headboat observer effort. *SAFMC Release* collects data on the length of released shallow-water grouper for commercial, for-hire, and recreational fishermen.

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- There is limited information available to classify the depth where fish are captured and released and the use of barotrauma reducing actions such as venting or descending. Depth and barotrauma reduction are significantly correlated with release mortality rates. The data collected through *SAFMC Release* provides finer scale information on released fish which can help refine the overall release mortality rate applied for a stock assessment.
- The development of the customizable application and Project Builder would allow partners to create and use an electronic tool without extensive development costs which would be helpful for citizen science or other voluntary data collection programs where resources are often limited. It would allow more funds to be available for volunteer engagement which can improve data quality and is critical for project success.

- **Potential secondary module as a by-product: Socio-economic - 10%.** This project will work to develop a socio-economic project based on input from the FY20 project scoping meetings to push the flexibility of the app beyond biological data. The specific project idea will be identified during the scoping meetings, developed through the SAFMC's Citizen Science Program, and use ACCSP's socio-economic standards as guidance. The Project Builder will be used to develop the data collection tool for the project.

- **Impact on stock assessment**

Stock assessment impacts are significant. Assessments rely upon accurate catch data for individual species, accurate assignment of catches to length and thus age classes, and accurate accounting of total population removals including release mortality. This project may help provide such information for fisheries for which it is now lacking.

Other Factors:

- **Properly prepared**

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

- **Merit**

The project is innovative, applying rapidly developing electronic reporting technology to the problem of obtaining critical biological information for released fish. It continues the development and construction of a customizable application that will support citizen science and other non-traditional data collection projects for partners moving forward. Partners would benefit by being able to create and use an electronic tool without incurring extensive development costs, and it would give partners more flexibility in responding to timely research and management needs by allowing them to build and deploy project specific apps quickly.

Summary of Proposal for Ranking – Abridged Version

- **Achieved Goals:** The FY20 project will: combine two similar released fish reporting applications (*SAFMC Release* and *NC DMF Catch U Later*) into ACCSP SAFIS as a single, flexible and customizable release and discard reporting tool that is available to other partners; expand the SAFIS application to increase the species that can be reported; begin planning for development of an integrated, customizable data collection application. Funds for the FY20 project have recently been received, so work is just starting to get underway. Project partners have met to discuss the overall timeline and impacts COVID-19 may have on the project. Work combining the SAFMC Release and Catch U Later apps will begin in the upcoming months. The SAFMC has begun to revise volunteer training materials for the species expansion to all shallow water grouper. An organizing committee has been formed to begin planning for the FY20 scoping workshop. Due to COVID-19, this in-person workshop will likely transition to a series of virtual meetings.

The FY 21 proposal will: continue development and construction of an integrated, customizable fisheries data application; continue data collection under the ACCSP release reporting tool via SAFMC Release project; and expand the data collection fields available in the customizable app both within and beyond discard reporting to support development of citizen science and other non-traditional data collection projects among partners.

- **Data Delivery Plan:** Data collection projects will be defined by the Project Builder application and will be stored in SAFIS, where they can be downloaded and interpreted by the angler application on a phone or tablet. The angler application will collect data and deliver that data directly to ACCSP through an API, building on the existing API that currently accepts data from *SAFMC Release* and *Catch U Later*. Data can be entered by anglers when no internet connection is available and later uploaded to SAFIS when a connection exists.
- **Level of Funding:** This proposal is year 2 of the “FY20: SAFIS Expansion of “SAFMC Release” and “NC DMF Catch U Later” Discard Reporting Applications” project. Funding for the FY21 proposal decreased from the FY20 project by approximately 3%.
- **Properly Prepared:** This proposal follows the guidelines under the ACCSP Funding Decision Process Document.
- **Merit:** The project is innovative, applying rapidly developing electronic reporting technology to the problem of obtaining critical biological information for released fish. It continues the development and construction of a customizable application that will support citizen science and other non-traditional data collection projects for partners moving forward. Partners would benefit by being able to create and use an electronic tool without incurring extensive development costs, and it would give partners more flexibility in responding to timely research and management needs by allowing them to build and deploy project specific apps quickly.

Appendix 1.



ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

STEPHEN W. MURPHEY
Director

To Whom it may concern,

The utility of collaboration with recreational stakeholders for sector specific data collection is gaining attention as a method to address limitations in recreational fisheries data collection. The development of emerging technologies, specifically electronic data capture using phone and tablet applications, is at the forefront of these efforts. The North Carolina Division of Marine Fisheries (NCDMF) is currently collaborating with the South Atlantic Fishery Management Council (SAFMC), Atlantic Coast Cooperative Statistics Program (ACCSP), and Harbor Light Software to develop a phone application for the collection of discard data to address acute data limitations that are vital for management.

North Carolina Division of Marine Fisheries routinely works with stakeholders within our tagging program to address data limitations for multiple species and recognizes the potential to expand these efforts through additional data collection streams. The establishment of a statistically valid methodology that incorporates data collected by stakeholders could prove invaluable for the continued assessment of multiple stocks. As these pilot investigations are evaluated it is likely that fishery managers outside of North Carolina will seek to apply these techniques to address data limitations for both state and federally managed species. The ability to establish standardized data elements that can be mixed and matched within a mobile reporting application will serve to greatly reduce the cost and time required on the front end of project development. Additionally, the centralization of citizen science data warehousing within the ACCSP will facilitate access among partners.

North Carolina Division of Marine Fisheries fully supports the continued evaluation of enhancing data collection through partnerships with recreational stakeholders and feel that the current investigation could potentially provide an invaluable asset for the management of recreational fisheries.

Sincerely,

A handwritten signature in black ink, appearing to read "Barbara Y. Lupton", is written over a horizontal line.

Barbara Y. Lupton, Deputy Director
NC Division of Marine Fisheries



RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
DIVISION OF MARINE FISHERIES
Three Fort Wetherill Road
Jamestown, Rhode Island 02835

To Whom it May Concern,

The Rhode Island Division of Marine Fisheries is writing this letter in support of the project proposal “FY21 SAFIS Expansion of Customizable of Fisheries Citizen Science Data Collection Application” submitted to the Atlantic Coast Cooperative Statistics Program (ACCSP) by the South Atlantic Marine Fishery Council (SAMFC) for consideration for funding in FY2021. Citizen science projects like this one have coastwide utility and has interest in Rhode Island. Additionally, project fits into the NOAA Fisheries recreational strategic plan as well as being a great way to engage stakeholders and encourage by in to Recreational Fisheries management. If implemented it would a great tool to roll out for use by Rhode Island anglers.

Sincerely,

John Lake
Supervising Biologist, RIDMF

Cc: Michael Bucko, APAIS Coordinator RIDMF
Scott Olszewski, Deputy Chief, RIDMF
Conor McManus, Deputy Chief, RIDMF

JULIA ISOBEL BYRD

Professional Address
4055 Faber Place Drive, Suite 201
North Charleston, SC 29405

Work: (843)302-8439
Cell: (828)215-1414
Email: julia.byrd@safmc.net

EDUCATION: UNIVERSITY OF CHARLESTON, SC, Charleston, SC
-**Masters of Environmental Studies**, focus on environmental and marine biology,
December 2004

WAKE FOREST UNIVERSITY, Winston-Salem, NC
-**Bachelor of Science in Biology**, Minor in **Environmental Studies**, May 2000

WORK EXPERIENCE:

Citizen Science Program Manager, South Atlantic Fishery Management Council (SAFMC; March 2019 – present)

- Provide programmatic leadership and support for the SAFMC's Citizen Science Program
- Develop and deliver training programs to work with participants to design and implement citizen science projects
- Foster collaboration between researchers, scientists, and fishermen to support projects
- Develop grant proposals for citizen science projects and assist program partners in developing grants
- Serve as PI or co-PI on grant supported citizen science projects addressing SAFMC research priorities
- Assist in developing and delivering outreach materials and training related to the Citizen Science Program and projects
- Communicate scientific, technical issues to a variety of audiences
- Build relationships with fishery professionals and stakeholders throughout the Southeast U.S. to develop Program partnerships and help engage more people in the SAFMC's Citizen Science Program
- Staff lead for Citizen Science Projects Advisory Committee and Operations Committee
- Supervise Citizen Science personnel (staff and students) working on citizen science projects

Southeast Data Assessment and Review (SEDAR), South Atlantic Fishery Management Council (SAFMC) SEDAR Coordinator (August 2012 – February 2019)

- Plan, coordinate and manage SEDAR stock assessment projects and procedural workshops. Duties include project management, work planning, timeline development, brainstorming strategies, problem solving, event planning, and facilitation.
- Chair and/or facilitate SEDAR stock identification, data, assessment, and procedural workshops. Experience includes facilitating variety of group discussions engaging scientists, managers, fishermen, and other stakeholders in order to lead groups through productive discussions and explore different points of view.
- Build relationships with fishery professionals and stakeholders throughout the Southeast U.S. to help engage more people in the SEDAR Stock Assessment Program.
- Communicate scientific, technical issues to a variety of audiences
- Lead re-design of the SEDAR website and serve as SEDAR webmaster.
- Assist with coordination and facilitation of SAFMC's Snapper Grouper Visioning Project
- Assist with the development of the SAFMC's Citizen Science Program. Duties included helping coordinate and facilitate SAFMC's Citizen Science Workshop, helping develop SAFMC's Citizen Science Blueprint, and assisting the Citizen Science Program Manager in developing infrastructure for the Program.
- SAFMC's representative on the Atlantic Coastal Cooperative Statistics Program Operations Committee
- Instructor for Marine Recreational Education Program, Southeast – Science Workshop 2017
- Participate in SCDNR's in-water sea turtle regional abundance and health assessment survey as Chief Scientist or Scientific Crew

South Carolina Department of Natural Resources, Office of Fisheries Management (OFM) Wildlife Biologist III (August 2005 – August 2012)

- Supervise and coordinate OFM's recreational fisheries dependent data collection and biological sampling, including survey design, field activities, data analysis, report writing, and grants administration
- Provide technical assistance including periodic summaries of fishery and habitat data, and reports requested through routine monitoring of marine resources landings and survey data
- Serve as PI or co-PI on grant supported projects that focus on monitoring, research, or assessment activities designed to provide data necessary to marine fisheries resource managers and decision makers

- Conduct presentations for advisory committees, the general public, and other scientists on a variety of fisheries management and conservation issues
- Analyze commercial and recreational fisheries data from a variety of internal and external data sources
- Work on developing state legislation and public outreach for SCDNR initiatives
- Serve on the SCDNR's Rules and Regulations and Accountability Report Committees providing key outreach materials for the general public and the SC legislature
- Participate and serve as a Chief Scientist for SCDNR's in-water sea turtle regional abundance and health assessment survey
- Develop and manage databases for a variety of fisheries information
- Liaison between SCDNR's State Finfish Survey and the National Marine Fisheries Service Marine Recreational Information Program
- Protected Species liaison for OFM
- Coordinate and respond to NOAA Fisheries proposed rules published in the Federal Register
- SCDNR liaison for the National Saltwater Angler Registry
- SCDNR liaison for the Marine Recreational Information Program
- Help organize and participate in outreach and educational events
- Supervise, develop, and coordinate saltwater commercial and for-hire licensing data QA/QC
- Supervise biologists and hourly employees
- Participate in SEDAR data workshops

TRAINING:

- Smithsonian's Communication & Facilitation Skills for Conservation Managers Course, April 2019
- Management Assistance Team (MAT) Facilitation Skills and More: A Course for Achieving Optimal Results
- Technology of Participation (TOP) Facilitation Methods
- NOAA Coastal Service Center Planning and Facilitating Collaborative Meetings
- Well's National Estuarine Research Reserve Coastal Training Program Collaborative Learning Workshop
- NOAA Coastal Service Center Project Design and Evaluation Workshop
- NOAA Coastal Service Center Public Issues and Conflict Management Workshop
- University of Maryland's Communicating Science Effectively Workshop
- NOAA Coastal Service Center Community Based Social Marketing Workshop
- Basic and Advanced Microsoft Access Training Workshop
- Atlantic States Marine Fisheries Commission Basic Stock Assessment Workshop
- Atlantic States Marine Fisheries Commission Maximum Likelihood Modeling Workshop
- Atlantic States Marine Fisheries Commission Mock Data & Assessment Workshops

PROFESSIONAL MEMBERSHIPS:

- SC Chapter of the American Fisheries Society
- ACCSP Recreational Technical Committee (2010-2012; Vice Chair 2011-2012)
- MRIP Angler Registry Database Work Group (2008-2012)
- ACCSP Operations Committee (2015-present)

SELECTED TECHNICAL PUBLICATIONS AND PRESENTATIONS:

- Byrd, J., J. Carmichael, and J. Neer. 2017. The Importance of Peer Review in SEDAR Stock Assessments. American Fisheries Society Annual Meeting, Tampa, FL. (Oral presentation)
- VonHarten, A. and J. Byrd. 2016. Building a Fishery Citizen Science Program in the U.S. South Atlantic to Improve Management and Policy. 4th International Marine Conservation Congress. (Oral presentation and helped facilitate focus group.)
- Carmichael, J., A. VonHarten, and J. Byrd. 2016. Efforts to Develop a South Atlantic Fishery Management Council Citizen Science Program. NOAA Fisheries Quantitative Ecology and Socioeconomics Training Program Webinar Series. (webinar presentation)
- SEDAR. 2015. SEDAR Procedural Workshop 7: Data Best Practices. SEDAR, North Charleston, SC. 151pp. (editor)
- Byrd, J., B. Floyd, E. Hiltz, M. Reichert, and M. Collins. 2009. Characterization of the mudminnow fishery in South Carolina. South Carolina Department of Natural Resources, Final Report to US Fish and Wildlife Service. 29p.

William R. Collier, II (Chip)

2336 Furman Dr.
Charleston, SC 29414
(843) 302-8444 (W)
(910) 297-8448 (C)
Chipcollier1@gmail.com

Current Positions:

Deputy Director for Science and Statistics, South Atlantic Fishery Management Council
Adjunct Graduate Faculty, College of Charleston, Marine Biology Graduate Program

Education:

PhD, Marine Biology, 2017, University of North Carolina Wilmington
B.S., Fisheries Science, 1998, North Carolina State University

Current Research Interests:

Assessing marine protected areas, age and growth of coastal fishes, release mortality, marine fisheries management, stock structure of marine fishes, fishery-dependent data collection, deep-sea coral ecosystems

Professional Experience:

Deputy Director for Science, 2019-Current South Atlantic Fishery Management Council
Fishery Biologist, 2014-2019, South Atlantic Fishery Management Council
Adjunct Faculty, 2018-Current, College of Charleston
Acting Deputy Director for Management, 2017 (two-month assignment),
District Manager, 2012-2014, North Carolina Division of Marine Fisheries
Biologist Supervisor, 2010-2012, North Carolina Division of Marine Fisheries
Fisheries Biologist, 2005-2010, North Carolina Division of Marine Fisheries
Research Assistant, 2008-2010, University of North Carolina Wilmington

Principal Publications:

Spencer, E., C. Collier, K. Dick, B. Fitzgerald. *In Prep.* Snapper Grouper Fisher Perceptions of Electronic Reporting in South Atlantic.

Collier, C., B. Fitzgerald, K. Dick. 2019. MyFishCount Completion Report: A pilot project on electronic reporting for private recreational fishermen in the South Atlantic region. South Atlantic Fishery Management Council, Charleston, SC 109p.

Odell, J., D.H. Adams, B. Boutin, W. Collier II, A. Deary, L.N. Havel, J.A. Johnson, Jr., S.R. Midway, J. Murray, K. Smith, K.M. Wilke, M.W. Yuen. Atlantic Sciaenid Habitats: A review of utilization, threats, and recommendations for conservation, management, and research. Atlantic States Marine Fisheries Commission Habitat Management Series #14. Arlington, VA. 144p.

Collier, C., J. Perry, G. Wright, and J. Facendola. 2013. Testing the utility of otolith morphometrics to detect stock structure for snapper grouper species. Completion Report for Grant Award NA10NMF4740143, NC Division of Marine Fisheries, Morehead City, NC. 37p.

Collier, C., and C.B. Stewart. 2010. Age sampling of the commercial snapper grouper fishery and age description of the black sea bass fishery in North Carolina. Completion Report for Grant # NA06NMF4330057. NC Division of Marine Fisheries, Morehead City, NC. 70 p.

Collier II, W.R., F.C. Rohde, J.H. Schoolfield, and C.B. Stewart. 2008. Assessment of fish populations in the lower Cape Fear River, 2002-2007. Completion Report for Grant # NA16FW1543. NC Division of Marine Fisheries, Morehead City, NC.

NCDMF. 2008. North Carolina Kingfish (*Menticirrhus* spp.) Fishery Management Plan. Collier, W.R. and J.H. Schoolfield (editors). NC Division of Marine Fisheries, Morehead City, NC



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

June 12, 2020

Julie Defilippi Simpson
Deputy Director
Atlantic Coastal Cooperative Statistics Program
1050 N. Highland St
Suite 200A-N
Arlington, VA 22201

Dear Ms.Simpson,

I respectfully submit my Maintenance Project proposal to be considered for funding by the ACCSP for FY2021: “Continued processing and aging of biological samples collected from U.S. South Atlantic commercial and recreational fisheries.” There have been no changes to the scope of work from previous years.

I am grateful for the support of your organization over the years. NOAA Beaufort Laboratory Life History Group have produce 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 my proposal.

Sincerely,

Jennifer Potts

Attachment:
FY2021 Maintenance Project Proposal



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

June 12, 2020

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Arlington, VA 22201

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Sincerely,

Jennifer Potts

Attachment:
FY2021 Maintenance Project Proposal

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: \$88,930.67

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

Original Date Submitted: June 15, 2020

Objectives:

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.

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 through **item 1b, improvement in biological data, of the Program Goals as stated in the 2020 RFP, specifically by providing age data for 10 of the upper 25% of species in the Biological Sampling Priority matrix.** The goal of this project is to process prioritized age samples as they are received annually. 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. 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 and Southeast Region Headboat Survey databases, 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 more than 60 SEDARs, the most cited research recommendation has been the need for more comprehensive, validated, and consistent age composition data. 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 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 was formed by NMFS to explore the question of how many age structures are sampled and how many are needed for a reliable stock assessments. 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.

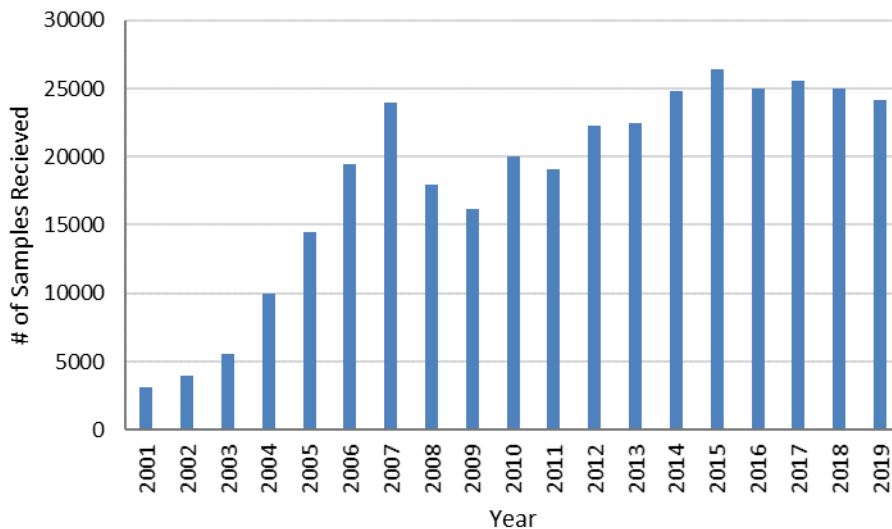
Another strong research recommendation from several SEDARs pertained to age and growth studies of the same species performed by more than one laboratory. Researchers have been asked to standardize processing techniques, be consistent in age determination analysis, and resolve ageing discrepancies between 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 is finalizing age validation studies on red porgy and gray triggerfish through chemical marking and rearing experiment and engaged in 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 - 2020, which is the primary source of funding for production ageing work at the Beaufort Laboratory. Through ACCSP funds for contracted support staff and NMFS FTE staff, the lab was able to show an increase in production processing on average from 5,000 to currently 13,000 age samples per year and from 4,300 to currently 21,500 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. In addition, the Beaufort Laboratory has cleared the back-log of lane snapper age samples, which dated back to the early 1980s. 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 – 2019. (Note: Due to COVID-19 pandemic, not all of 2019 age samples have been received at Beaufort. The count of samples is an estimate based on contributor counts.)



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 for the 2021 - 2022 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 2021, following the completion of the data input requirements for scamp (operational assessment) and black sea bass. Also, ongoing efforts to stay up to date on tilefish, vermilion snapper, gag, red snapper, red grouper, red porgy and greater amberjack will be continued. All age data provided from the Beaufort Laboratory have been included in stock assessments. The age data are broken down by year, fishery and gear, and state. For several of the species, the number of age samples has been inadequate for fully characterizing all years, fisheries and gears, and the request at the end of each SEDAR assessment has been for more comprehensive biological samples. 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. An operational stock assessment for Scamp is slated to begin in 2021 as a follow up to the research track assessment. Data for red snapper has been requested for fall 2020. Black sea bass will be due to SEDAR in early 2021. Gray triggerfish , red grouper, vermilion snapper and blueline tilefish data will be due late 2021.

Regarding the other species in the upper portion of the matrix, which include snowy grouper, tilefish, lane snapper and gag, the staff at the Beaufort Laboratory have been processing the annual age samples with a maximum lag time of one year. Past funding from ACCSP has allowed the lab to meet all of the needs of SEDAR without delays.

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, though white grunt is on the schedule in 2023. The Beaufort Laboratory has inventoried over 25,000 white grunt samples dating back to the early 1980s. Over 600 days will be needed to process and read the backlog of white grunt. 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. A 2-year MARFIN grant has been obtained to research white grunt by trying new methodology for estimating ages of fish with the use of near infra-red spectroscopy (NIRS) , testing otolith weight – age relationship and otolith shape analysis as a means to stock delineation. The MARFIN grant has supplied funding for one contract staff position.

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 have 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. The past funding from ACCSP has allowed the staff to process those samples previously excluded 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 2013 - 2019. The average 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.**

Table 1. 2013-2019 Fishery-dependent age samples of the top priority species received at the NOAA Beaufort Laboratory. (Note: Due to COVID-19 pandemic, not all samples have been received at the Beaufort Laboratory. Thus, 2019 sample count is a minimum estimate and cost is based on 2013 – 2018 averages.) Average 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	2013	2014	2015	2016	2017	2018	*2019	Cost
Black Sea Bass	2289	2196	2423	1448	1685	1248	480	\$28,221
Blueline Tilefish	811	494	262	328	458	299	186	\$13,254
Gag	734	890	650	585	516	691	353	\$20,321
Gray Snapper	607	1336	1238	1325	713	596	692	\$29,063
Gray Triggerfish	1008	1112	1125	1594	1527	1759	1066	\$30,460
Lane Snapper	544	830	562	950	1309	809	459	\$18,759
Red Grouper	448	521	230	349	318	307	130	\$10,860
Red Porgy	868	939	673	740	693	759	508	\$23,350
Red Snapper	700	912	64	0	856	1255	366	\$14,197
Scamp	647	825	452	752	547	621	304	\$14,411
Snowy Grouper	644	818	861	787	726	955	550	\$23,945
Tilefish	1035	911	558	895	836	742	193	\$18,658
Vermilion Snapper	4219	4121	3751	5187	4545	5508	3735	\$102,460
White Grunt	1635	2374	2415	2649	1767	1604	1280	\$46,651
TOTAL	16189	18279	15264	19605	16496	19171	10302	\$394,611

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 one staff hired through ACCSP funds along with two FTEs will be able to process and read ~12,000 age samples in one year, which is a reduction from past years.

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. They 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. Existing sectioning equipment will be provided by NMFS. 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 30 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. NMFS is updating image analysis systems and computers in FY19 to keep abreast of technological changes. This equipment is required to perform the work and is being provided at no cost to ACCSP funds. 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

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.

[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 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.

Consequences of Reduced Funding and Transition Plan :

With the requirement to cut maintenance projects entering year-5 of funding, a transition plan is being considered by the Southeast Fisheries Science Center (SEFSC). Managers at the Beaufort Laboratory and the P.I. have been consulting with leadership of the SEFSC. Within the SEFSC priority-based resource (PBR) process, an activity plan has been submitted requesting base funds to cover permanent federal employee positions and/or contract positions for fish ageing work at the Beaufort Laboratory. The activity plan is under review.

The allowed (reduced from previous years) request for funds for this proposal will result in the loss of some of the past accomplished work, if the SEFSC cannot provide support. The largest impact will be the loss of two contract staff. Not only will we lose those people’s expertise, but we will not be able to process and age all annual samples for the priority species. One option may be to select to provide age data for every other year or every third year. This decision will be made with the input from stock assessment biologists. A consequence to that strategy will be the loss of tracking strong year classes. The funds will not allow for travel for the contract staff, which will limit their ability to participate in age workshops or other offsite training opportunities. The funds will not cover the supplies needed for the contract staff, which may have an additional effect of limiting the number of samples that can be processed. All of these concerns and impacts have been raised with SEFSC leadership and stock assessment staff.

We have turned to other opportunities to process and age fish coordinated with other research. The white grunt study funded by MARFIN is one example, which will allow us to prepare age data for the schedule research track stock assessment in 2023. The Beaufort Lab is also part of the 5 year NOAA Initiative to test the applicability of Fourier-Transformed Near Infra-Red Spectroscopy (FT_NIRS) technology to estimate the ages of fish. The funding includes the purchase of the spectrometer and one contract labor position for three years to conduct the research. Though those other grants are for specific purposes other than preparing data for

SEDAR and keeping up with ageing of primary species, they will help us achieve some of the mandated work.

LITERATURE CITED:

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Milestone Schedule:

TASKS	J	J	A	S	O	N	D	J	F	M	A	M
Receiving and storing hard parts	X	X	X	X	X	X	X	X	X	X	X	X
Processing hard parts	X	X	X	X	X	X	X	X	X	X	X	X
Ageing hard parts			X	X	X	X	X	X	X	X	X	X
Provide hard parts to cooperative institutions		X	X	X	X	X	X	X	X	X	X	X
Provide samples for reference collections	X	X	X	X	X	X	X					
Quarterly progress reports			X			X			X			
Final Report												X

Project Accomplishments Measurement:

The ultimate accomplishment measurement of this project will be the successful completion of all age data for SEDAR scheduled species in FY2021-2022. Six species are currently on the schedule for 2021– 2022, which include scamp and black sea bass, red grouper, gray triggerfish, blueline tilefish, and vermilion snapper. Some of 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 vermilion snapper, black sea bass, and gray triggerfish 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 2019 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		\$116,000	\$116,000
FTE Biologist salary		\$67,000	\$67,000
Contract staff (1)	\$87,187		\$87,187
Subtotal	\$87,187	\$183,000	\$270,187
Fringe Benefits			
\$183000 *36%		\$69,540	\$69,540
Equipment			
		\$29,900	\$29,900
AGO Fee	\$1,743.67		\$1,744
TOTAL	\$88,930.67	\$282,440	\$371,371

BUDGET NARRATIVE for REQUESTED FUNDING
July 1, 2021 – June 30, 2022

Category	Cost	Justification
Personnel	\$87,187	Contract staff position rates are negotiated pricing between vendors and the federal government.
AGO fee	\$1,743.67	NOAA's Acquisitions and Grants Office charges a 2% fee to process contract services. The SEFSC has required all proposals that include contract services to include this fee.
Total Request	\$88,930.67	

BUDGET NARRATIVE for NMFS IN-KIND FUNDING
July 1, 2020 – June 30, 2021

Category	Cost	Justification
Personnel	\$183,000	Includes salary for PI and FTE biologist. The personnel are directly involved with the day to day processing and ageing of samples, laboratory management and data analyses.
Fringe Benefits	\$69,540	Fringe benefits of the two FTE positions listed. The rate for calculating benefits is 36% per OPM website.
Equipment	\$29,900	This proposal is not requesting any equipment to be purchased to accomplish the work. The equipment has been provided by NOAA and includes computers, saws and image analysis systems needed for staff to perform the work as laid out in this proposal. Cost basis is computed from current market value and depreciation. Image analysis systems required complete upgrades in FY19 due to technological advances that rendered older systems to become obsolete.
Total	\$282,440	

Maintenance Project:

Table 2. History of related projects funded by ACCSP.

Funding Year	Project Title	ACCSP Funds	In-Kind Funds
2020	Continued processing and ageing of biological samples collected from U.S. South Atlantic commercial and recreational fisheries	\$177,861	\$264,560 (NMFS had to cover cost not covered by award amount)
2019	Continued processing and ageing of biological samples collected from U.S. South Atlantic commercial and recreational fisheries	\$300,550	\$426,872
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 2020 (A), FY 2019 (B), FY 2018 (C), FY 2017 (D), FY2016 (E), FY 2015 (F), FY 2013 (G), and 2012 (H) funding.

A. 2020

Category	Cost	Justification
Personnel	\$174,374	Contract staff positions are negotiated pricing through the federal government. (1920 hrs x \$45.41/hr x 2 staff).
AGO fee	\$3,487	NOAA's Acquisitions and Grants Office charges a 2% fee to process contract services. The SEFSC has required all proposals that include contract services to include this fee.
Total Request	\$177,861	

B. 2019

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	Received \$203,028

C. 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	

D. 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	

E. 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	

F. 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	

G. 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		

H. 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), 2017 (E), 2018 (F), and 2019 (G) funding year cycles. Number of samples that have been sectioned and number of samples aged by species.

A. 2012

Species	# of Samples Sectioned	# of Samples Aged	Sampling Years
Black Sea Bass	1,000	3,300	2011 - 2012
Blueline Tilefish	800	3,117	2003 - 2012
Gray Triggerfish	700	6,240	1990 - 2012
Snowy Grouper	2,400		2010 - 2012
Red Porgy	1,300		2012
Red Snapper	300		2012
Gag	6,000		2005 - 2012
Vermilion Snapper	3,120		2012

B. 2013

Species	# of Samples Sectioned	# of Samples Aged	Sampling Years
Gag Grouper		6,551	2007 - 2012
Red Snapper		1,210	2010 - 2013
Gray Triggerfish		2,457	2012 - 2013
Gray Triggerfish from SCDNR collection		8,471	1991 - 2013
Blueline Tilefish		1,851	2012 - 2013
Black Sea Bass		1,935	2012 - 2013
Red Porgy	3,600		2012 - 2013
Tilefish	2,340		2011 - 2013
Vermilion Snapper	3,000		2012 - 2013
Scamp	1,200	300	1983 - 2013

C. 2015

Species	# of Samples Sectioned	# of Samples Aged	Sampling Years
Tilefish		4,297	2011 - 2014
Blueline Tilefish	1,566	1,566	2014 - 2015
Red Grouper	742	742	2014 - 2015
Black Sea Bass		2,395	2012 - 2013
Vermilion Snapper	5,670	11,759	2012 - 2015
Gag Grouper		1,182	2014 - 2015
Scamp	5,913		1983 - 2015
Gray Snapper	4,448		2006 - 2014
Greater Amberjack	428		2006 - 2014

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	

F. 2018

Species	# of Samples Sectioned	# of Samples Aged	SEDAR Assessment Schedule (Est. start date)
Black Sea Bass	2	319	
Gag	286	614	Operational Assessment (June 2020)
Gray Snapper	991	219	
Graysby	173	173	Ecosystem species
Lane Snapper	212	500	
Red Grouper	1788		
Red Hind	932		Ecosystem species
Red Porgy	1232	8945	SEDAR 60
Scamp	1319		Research Track Assessment (Jan 2020)
Snowy Grouper	1988		Operational Assessment (Jan 2020)
Tilefish	1263	1219	Operational Assessment (June 2020)
Vermilion Snapper	4729	3199	

G. 2019

Species	# of Samples Sectioned	# of Samples Aged	SEDAR/Management need
Black Sea Bass		91	
Cobia	23	22	SEDAR 28 Update (Gulf stock)
Gag	133	878	SEDAR 71
Gray Snapper	278	823	
Lane Snapper	8	403	
Red Grouper	256	2037	
Red Porgy	1168	36	SEDAR 60
Red Snapper	2371		
Scamp	396	1372	SEDAR 68
Snowy Grouper	16	4140	SEDAR 36 Update
Tilefish	1003	987	SEDAR66
Vermilion Snapper	2886	3490	
Coney	0	135	Ecosystem Species
Graysby	2	201	Ecosystem Species
Margate	422	130	Ecosystem Species
Black Margate	136	45	Ecosystem Species

Summary of Proposal for Ranking Purposes

Proposal Type: *Maintenance*

Primary Program Priority:

Biological Sampling: 100% of age samples collected from the ten 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, 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. The SEFSC has established a Priority Based Resource (PBR) process, and leadership is reviewing activity plans for all work done with in the center. The Beaufort Laboratory has requested base funding for fish age and growth work for the past three years.

In-kind Contributions:

NMFS is providing 76% 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)

Burton, M. L., J. C. Potts, A. Poholek, A. Ostrowski, and J. Page. 2019 Age, growth, natural mortality and reproductive seasonality of knobbed porgy from southeastern United States waters. *Marine and Coastal Fisheries: Dynamics, Management, and Ecosystem Science*, 11:231 – 245.

Eddy, C., Pitt, J., Oliveira, K., Morris, J. A., Jr., Potts, J., and Bernal, D. 2019. The life history characteristics of invasive lionfish (*Pterois volitans* and *P. miles*) in Bermuda. *Environmental Biology of Fishes*, <https://doi.org/10.1007/s10641-019-00877-4>.

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.
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**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**

**FY21: Economic Efficiency Assessment of the Rhode Island Fluke and Black Sea Bass
Aggregate Management Programs**

Submitted By:
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Applicant Name: Rhode Island Department of Environmental Management,
Division of Marine Fisheries (RIDEM)

Project Title: **FY21: Economic Efficiency Assessment of the Rhode Island
Fluke and Black Sea Bass Aggregate Management Programs**

Project Type: New Project

Requested Award Amount: \$61,383.77

Requested Award Period: FY 2021 (one year from the receipt of funds)

Primary Program Priority: Economic and Sociological Data

Date Submitted: August 13, 2020

Project Supervisor: Dr. Conor McManus, Deputy Chief, conor.mcmanus@dem.ri.gov

Principal Investigator: Julia Livermore, Supervising Biologist, julia.livermore@dem.ri.gov

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

Dr. Tracey Dalton, URI Professor of Marine Affairs, dalton@uri.edu

Atlantic Coastal Cooperative Statistics Program (ACCSP) Proposal
for the State of Rhode Island 2021

Objectives:

- Collect socioeconomic data directly from commercial Rhode Island (RI) fluke and black sea bass fishers that is not currently recorded or available.
- Evaluate the economic efficiency, safety improvements, overall efficacy, and perceptions and attitudes associated with the RI Research Pilot Aggregate Program.
- Create a model for socioeconomic data collection in the context of fishery management program evaluation and develop a platform for soliciting and storing of fisheries management information of this type, **consistent with the SE standards.**
- Address research and management needs that leverage electronic catch and effort reporting through supporting the RI Research Pilot Aggregate Program. Depending on the findings, the resulting economic analysis may be used in support for continuing the program.

Need:

For years, discussions on an aggregate program have garnered interest from the summer flounder, or fluke (*Paralichthys dentatus*), and black sea bass (*Centropristis striata*) commercial fisheries in Rhode Island. The commercial quotas for fluke and black sea bass have traditionally been managed through specific season quotas, changes in possession limits throughout the year, and in some cases closures during certain days of the week. Due to the high demand of the species and level of participation (especially in the summer), and the suboptimal state quota allocation, the daily possession limit of both species is generally low. Given the variability of fish stocks, low quotas, and subsequently low possession limits, combined with rising fuel and vessel maintenance costs, fisheries managers are being asked to provide more flexible fishing operation practices to the fishing industry.

Consequently, the Rhode Island Department of Environmental Management Division of Marine Fisheries (DMF) implemented a pilot fluke aggregate program starting in 2019 after the Rhode Island Marine Fisheries Council (RIMFC) voted in fall of 2018 to adopt a fluke Pilot Aggregate Program. The goal of the 2019 pilot program was to collect data to assess the efficacy of an aggregate program, where participants would be held to a weekly aggregate limit (daily limit, x days open) in lieu of a daily limit. Based on the support of the 2019 fishing participants, the pilot program was extended through the 2021 fishing year in hopes of better understanding interannual variability associated with the program that is imperative to understand before any form of the program can be formally adopted.

It is hypothesized that an aggregate program would allow fishermen more flexibility in fishing practices through the utilization of a weekly possession limit instead of a daily limit. Such a program could potentially decrease costs to the fishermen by decreasing days at sea (fuel and vessel maintenance costs decrease) while also increasing safety as fishermen could pick which days are the best in terms of weather. Aggregate programs could also decrease discards, and thus, discard mortality in some fisheries, especially at times when possession limits are low.

However, there have been stated concerns from the commercial industry in RI that aggregate programs may: 1) favor a given sector or individual businesses depending on how they operate; 2) increase catch rates, which can lead to quicker quota consumption and result in shorter fishing seasons due to early closures; 3) cause an increase in fish landed that will oversaturate the market and drive prices down; and 4) lead to an increase in illegal fishing activity due to the potential difficulties in accountability and enforceability. While ideas on how such an aggregate program would impact the prosecution of these fisheries and what the potential mechanisms should be to manage and enforce the program, they are largely untested.

Data collection on harvest and effort have occurred, yet there has been no data collection on the economic and safety components of the program and therefore no ability to assess program performance in terms of socioeconomic impact. Collection of these data is necessary to determine whether the aggregate programs result in improved economic efficiency and safety, as hypothesized. **This proposal aims to address this data gap by offering a strategy to collect business information (fuel, bait, ice, grocery, and labor costs, number of days fished, etc.) directly from fishermen participating in the program. This data collection will not only provide the raw data that does not currently exist, but also allow for assessment of social components of the aggregate programs.**

Results and Benefits:

- **Data improvement: This proposal will provide a substantial improvement to data quality because data of this form are not currently being collected.** Specific data types will be targeted (e.g., trip-level business information), but the open-ended nature of the data collection process may also reveal other pieces of information that may be useful in management program evaluation and in leveraging existing datasets collected by ACCSP. The fishery-dependent data collected through this program will inform fishery managers, the fishing industry, and stakeholders on the economic and social benefits of an aggregate program. This information is vital to the fishing industry when commenting on intentions of management practices and it also assists fishery managers in ensuring proper management.
- **Improvements to reporting:** This work may help to improve the catch and effort data reporting that aggregate program participants are required to report accurately to remain in the program. If this study demonstrates the effectiveness of the aggregate program and it is continued or expanded, SAFIS data reporting quality and frequency are expected to improve. For instance, participants of the aggregate program are required to report within 48 hours of their trips via eTrips Mobile, which improves quality by limiting “recall bias”.
- **Stock assessment impact: The project further encourages the use of eTrips mobile, which results in enhanced catch and effort data. Improved data quality may result in more accurate stock assessments.** This is especially important for high priority species like fluke and black sea bass. The program being evaluated through this data collection may also decrease discards by reducing the number of days of fishing. If this occurs, stock health may improve. If unaccounted discards are reduced and the program

prevents overages on quota, this improves data quality and sustainable stocks, respectively.

- **Partnerships and/or regional impact: While this initial effort is specific to the RI fishing industry, other states could adopt similar flexible management opportunities, depending on our findings.** Data collection will be designed to collect information that will allow for comparison or application to other states' or federal fisheries (e.g., questions will address different gear types and areas fished). **Understanding how fishing businesses respond to aggregate programs may provide justification for other states or regional fisheries to take aggregate program approaches to management for species with small quotas.** Fluke and black sea bass are both highly sought-after species, with complicated management structures; aggregate program evaluation may help to improve fishing flexibility, while maintaining healthy fish populations.
- **Innovative: This work will introduce a new methodology of data collection for future entry into ACCSP channels (following the ACCSP social and economic standards) and may serve as a model for future efforts or a launchpad for further development of methods. This is an entirely unique form of fishery-dependent data.** No past projects have involved direct qualitative data collection for socioeconomic information. The data collection involved will serve to evaluate an innovative management program for RI that could lead to improved efficiencies in commercial fishing and business practices (reduced trip costs, reduced bycatch, improved safety, etc.). The proposed mixed methods approach (qualitative and quantitative components) allows for richer insights into the social and economic impacts of the aggregate program. Fishery managers often talk about changes in harvest or stock status that result from management programs, but efforts rarely quantify how such programs change how fisheries operate. This project presents an innovative step towards understanding how fishing practices may change in response new management measures.

Data Delivery Plan:

All data collected from fishermen collected by RI will be transcribed into NVivo software and digitally entered into a Microsoft Access database. There is no existing data feed for entry directly into ACCSP channels. **As such, if ACCSP has time and interest, RI will work with ACCSP staff early on in the project to determine preferred data format and method of entry or sharing. Whether or not ACCSP has capabilities at the time to develop a data storage system, all applicable data will be named and formatted according to the Social and Economic (SE) standard data elements so that future entry is possible and streamlined. Experience with additional forms of data collection may also result in recommendations regarding formatting of data elements not currently addressed by the SE standards. This data collection effort will complement the data collected through the voluntary annual fixed cost, trip cost, and owner/captain/crew surveys conducted as part of the SE standards.** Given that this is a new effort that requires substantial staff time to extract data from fishery participants, only one year of data collection is planned at present. If the process is successful, further data collection may be considered at a later date.

Approach:

To collect participant business information (90% social and economic module, 10% catch and effort), we propose to conduct semi-structured, in-person interviews (or virtual interviews if circumstances prevent in-person; Table 1). Sampling efforts will attempt to reach most aggregate program participants. This is an example of purposive sampling, which is a common practice for studying individuals of a particular demographic (Bernard and Ryan 2010). Data collection will be focused exclusively on participants of the aggregate programs to allow for assessment of changes to their businesses since joining the program. Starting in 2019, twelve participants were chosen by lottery to represent multiple gear types within the aggregate programs; 3 otter trawl fishermen, 1 lobster pot fisherman, 3 gillnet fishermen, 1 rod and reel fisherman, 3 multi-gear fishermen, and 1 fish pot fisherman. 3 participants per gear type were sought out in year one, but limited applications for lobster pot, fish pot, and rod and reel participants were received (1 apiece). This pool was expanded in 2020 to an additional 18 participants. Three new participants for each gear type were sought out in 2020, but not all types met this goal; participants were selected by lottery when more than three applications were received within a gear type. New participants brought the totals by gear type to:

- 6 otter trawl fishermen
- 6 gillnet fishermen
- 2 lobster pot fishermen
- 5 fish pot fishermen
- 5 rod and reel fishermen
- 6 multi-gear fishermen

This participant pool represents both state-only and federally permitted vessels. The program is currently underway, with all participants officially having started their 2020 fishing year. Given limited numbers of participants for certain gear types (e.g., lobster pot), data may not be able to be discussed for that specific gear due to confidentiality constraints (Rule of Three). However, that gear type may be aggregated with other gears to discuss overall program impacts or breakdowns by broader gear groupings (e.g., fixed vs. mobile gear). Moreover, when the Rule of Three is not met, the research team can reach out to harvesters to see if they are willing to sign a waiver that would allow release of confidential data. Program participants have already waived landings data confidentiality by entering the program (250-RICR-90-00-12 §12.7.2.F), so they may also be willing to share related socioeconomic information.

Initiation of sampling in 2021 would allow for any of the 30 current aggregate participants to be included. Even without complete participation of all current aggregate participants, a reasonable sample size for interview data collection will be achieved. It is important to understand that qualitative data is more useful for providing insights into how people think about a particular issue, rather than identifying the proportions of the population that feel a certain way; the latter is better approached through quantitative methods. The proposed sampling strategy is expected to result in a sample size of 12 or more participants, as

recommended by Guest et al. (2006). While this is a relatively small sample size, this is an acceptable number in qualitative data collection. In fact, Crouch and McKenzie (2006) recommend that studies not exceed 20 participants in order to build and maintain a close relationship built on trust, that allows for the open exchange of information. Guest et al. (2006) suggest that data “saturation” (when additional participants do not provide additional insights) occurs around 12 participants in homogeneous groups. Nevertheless, one goal of sampling in qualitative analysis is to ensure that sampling has included a broad set of interests. Given the use of purposive sampling of aggregate program participants only, it is reasonable to assume that this study will reach saturation if between 12 and 30 aggregate participants are interviewed; a 40% positive interview response rate will achieve an acceptable sample size to determine overall program efficiency for all gear types combined. For discussion on program effectiveness for individual gears, public data products will only be produced when three or more aggregate participants provide data. While larger numbers of interviewees within gear types would improve data quality, research is limited to the participants in the pilot aggregate program, which only includes a small number of individuals at this time.

If 15 (or 12 at minimum) interviews are not achieved, fewer generalizations can be made about the data and overall program performance. However, within specific gear groupings abstractions could yet be made and the data will still provide insight into how fishing businesses responded by participating in the aggregate program. Furthermore, recommendations about potential improvements to the SE standards may also still be made following limited data collection given this is the first effort to collect socioeconomic information in an interview format. Nevertheless, in order to avoid a small number of respondents, DMF will offer embroidered baseball caps to interviewees. Monetary incentives would be inappropriate, as non-aggregate program participants may feel that those in the program are being treated with favoritism by DMF staff. Baseball caps present a non-monetary incentive; DMF has used caps and t-shirts as incentives in the past for other programs administered by RIDEM.

Interview respondents will be contacted directly by phone or email. Interviews are expected to last between 30 and 60 minutes each and will be recorded. Participants will be asked to sign consent forms prior to initiating the interview and will be notified that participation is voluntary and that all data will remain confidential; the Rule of Three will be used to aggregate any information to ensure confidentiality.

Given the sensitive nature of the questions being asked, informal discussions/pilot interviews with a small group of participants will be used to collect information about how best to approach potentially sensitive or contentious topics. For instance, each question may have multiple forms to allow for some data collection in the event the interviewee is not comfortable providing full information. Furthermore, sensitive questions may be addressed approximately two thirds of the way through the interview to allow the researcher to draw the respondent into the interview process and build a base level of trust before sensitive topics are raised (Miller 2019). Project researchers may also utilize hard copy surveys at the end of the interview as a technique to collect more sensitive info like costs and expenditures. Different interview question structures and hard copy surveys soliciting sensitive information will be tested in pilot interviews to determine the most effective approach.

A draft interview protocol is not available at this time, as initial interview input will be used to develop the interview protocol that addresses these challenging topics in a variety of ways. Therefore, the first step of data collection will be comprised of pilot interviews with aggregate program participants. While focus groups are often used for this purpose, the sensitive nature of the data that the researchers are requesting to collect may make group discussions ineffective. Academic training and expertise in collecting empirical data in the field from Dr. Tracey Dalton at the University of Rhode Island's Department of Marine Affairs will guide the development of the initial interview instrument. This process will involve using the pilot interviews as an opportunity to pre-test the formal interview questions.

The interview protocol will also include a preface that explains the purpose of the data collection and the intent to evaluate whether the aggregate program should be expanded to include the full RI industry and will undergo University of Rhode Island Institutional Review Board (IRB) review to ensure that ethical standards are upheld: first, that subjects are not placed at undue risk; second, that they give uncoerced, informed consent to their participation. Due to the variety of gear types within the fluke and black sea bass fisheries, specific questions will be included to address differences in fishing approaches in order to derive a more comprehensive understanding of fleet activity and allow for comparisons and extrapolations to be made to other fisheries (e.g., other species or in other states/regions). **The interview protocol will likely include a mixture of open- and closed-ended questions that will address the following topics:**

- **Closed-ended questions will collect information consistent with ACCSP SE standard data elements to evaluate variable costs associated with commercial fishing trips. These questions will be asked for individual years prior to entering the aggregate program and for years while participating in the program to assess differences.**
 - **Trip level information for current and past fishing years (labor costs, fuel, bait, ice, grocery, and other miscellaneous costs)**
 - **Breakdown of labor costs by crew/captain/owner**
 - **Insurance costs**
 - **Days at sea by year or season**
 - **Gear/equipment or vessel maintenance costs**
 - **Fishing activity (primary species, gears used, years in fishery, use of permits, etc.)**
- **Open-ended questions will focus on attitudes and perceptions of stakeholders to assess satisfaction with the fishery and its operations (which the Committee on Economics and Social Sciences has identified as an area requiring additional research). Questions will address fishery performance prior to pilot program implementation, as well as after.**
 - **Perceptions and attitudes associated with the aggregate program in general**
 - **Perceived social impacts (e.g., safety, quality of life) of the aggregate program**

- **Perceived changes to the fishery (i.e., harvest rates) as a result of the program**
- **Perceived or documented changes in trip-level and annual costs due to the program**
- **Noted changes in value of fluke and black sea bass**
- **Changes in the number of bad weather fishing days**

Following completion of each interview, the audio will be transcribed and analyzed using NVivo, Microsoft Excel, and R (R Core Team 2020). **NVivo is a software program that is designed to organize and analyze mixed methods and qualitative data by coding transcribed information by theme; it enables users to make evidence-based conclusions through qualitative and quantitative analysis of the data.** Closed-ended questions may be analyzed using summary statistics, while open-ended questions will be structurally coded or descriptively coded by theme, or category, and then analyzed (see Saldaña 2015).

In addition to the data to be collected through the proposed work, the aggregate program also requires that participants have history participating in the fisheries in RI (confirmed through SAFIS dealer reports and catch and effort reports), so the impacts of the aggregate program could be compared to prior fishing practices. All participants are also required to have a Vessel Monitoring System (VMS) device on their vessel and allow RIDEM Office of Law Enforcement and DMF staff to have access to the data collected. Additionally, all participants must report their catch and effort information prior to offloading their catch into eTrips Mobile. This is to assist in the enforceability of the program (possession limit compliance) and to improve data quality by limiting recall bias. **If any participants fail to adhere to any of the reporting requirements, their permit will be revoked for the remainder of the pilot program (250-RICR-90-00-12).**

The socioeconomic data will complement the existing data collected and allow for paired analysis. For example, perceived economic changes with respect to ex-vessel value of target species can be compared directly to pricing data and volume of landings provided through dealer reports in SAFIS. Changes to the number of days at sea can be evaluated by comparing to state logbooks or Vessel Trip Reports (VTRs) and wind/buoy data could be incorporated to evaluate whether a reduction of fishing in bad weather occurred. Reduction in discards could also be assessed by comparing qualitative data with VTR and/or observer data. There may also be opportunities to analyze the fishery-dependent information collected through this effort in the context of different sectors (e.g., by gear types or port). This form of analysis may or may not be possible, as it would depend on achieving sample sizes that meet the Rule of Three within each sector (or for participants to agree to sharing of confidential data via legal data release forms).

Furthermore, this work will leverage another ACCSP-funded effort to model what potential impacts could be on commercial harvest if the program is expanded to the entirety of the RI fishery. Ongoing analyses include trip counts, catch rates, areas fished, and gear types used and observed changes in fishing behavior for aggregate program participants are being modeled for the full fleet. The data collected through this effort could be used in conjunction with the modeled outputs to determine potential socioeconomic impacts for fishery participants if the program were open to all RI fluke and black sea bass harvesters. This will complement

ongoing analytical efforts that simulate what expansion of the aggregate program would mean for the state’s fishery.

This program (socioeconomic data collection coupled with catch and effort analysis) could provide essential information on the efficacy of aggregate programs to manage high-value commercial species, or species with relatively small quotas. While this is of great importance to the RI fishery, this information is also useful to other states or federal fisheries when considering potential management options for other species or other regions. Discerning the human response in terms of changes to fishing activity and business operations is pivotal to understanding the changes in harvest. This information is necessary to make informed recommendations about management options that will achieve a desired effect on harvest rate.

Geographic Location:

The project will be administered out of the Rhode Island Department of Environmental Management’s Division of Marine Fisheries 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 (Table 1):

- Achieving successful stakeholder buy-in by finding program participants agreeable to socioeconomic interviews.
- Successful completion of in-person interviews of a reasonable sample size.
- Quality controlled data transcription and entry into data format consistent with the SE standards.
- Data formatting that allows for integration with existing data sources (e.g., linking by trip ID, Commercial Fishing license number, vessel ID).
- Evaluation of fluke and black sea bass aggregate program performance in the context of socioeconomic effects.

Goal	Metric
15 participants (50%) agreeing to be interviewed/share data	Number of participants
15 interviews conducted	Number of interviews
Data accurately transcribed into Microsoft Access database (or other format preferred by ACCSP)	Completion of database
Data integrated with existing data sources	Ability to link information across databases
Formal aggregate program evaluation	Presentation of findings to RIMFC for consideration of program expansion and a technical report or peer-reviewed paper

Table 1. Milestone Schedule

Activity	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
Initial phone interviews	X	X										
Survey development		X	X	X								
In-person participant interviews			X	X	X	X	X	X				
Data transcription					X	X	X	X	X			
Data analysis									X	X	X	X
Preparation of results (report writing and public workshop)											X	X
Annual reporting						X						X

References:

Bernard, R., and G. Ryan. 2010. *Analyzing qualitative data: systematic approaches*. SAGE Publications: Thousand Oaks, California.

Crouch, M., & McKenzie, H. (2006). The logic of small samples in interview-based qualitative research. *Social Science Information*, 45(4), 18. doi: 10.1177/0539018406069584

Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods*, 18(1), 24. doi: 10.1177/1525822X05279903

Miller, P.R. (2019). Sensitive Questions: Duke Initiative on Survey Methodology at the Social Science Research Institute. <https://dism.ssri.duke.edu/survey-help/tipsheets/tipsheet-sensitive-questions>

R Core Team (2020). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL <https://www.R-project.org/>.

Saldaña, J. (2015). *The coding manual for qualitative researchers*. SAGE Publications: Thousand Oaks, California.

REQUESTED BUDGET FY 2021

PERSONNEL COSTS:

Item (position and percent of staff time covered through this grant)	ACCSP Share (dollars and % of grant time covered by ACCSP)	Direct State Share (dollars and % of grant time covered by RIDEM)	Total
Deputy Chief (FTE 5%)	\$0.00 (0%)	\$7,664.65 (100%)	\$7,664.65
Supervising Biologist (FTE 40%)	\$36,553.80 (75%)	\$12,184.60 (25%)	\$48,738.40
Principal Biologist (FTE 10%)	\$9,088.43 (75%)	\$3,029.65 (25%)	\$12,117.90
Student Researchers (Intern 50%)	\$2,673.00 (50%)	\$2,673.00 (50%)	\$5,346.00
Professor of Marine Affairs (0%)	\$0.00 (% NA)	\$0.00 (% NA)	\$0.00
Indirect Charges (RIDEM FTE 19.25%)	\$9,300.68	\$4,918.71	\$14,219.39
Total Personnel	\$57,615.91	\$30,470.43	\$88,086.34

EQUIPMENT & SUPPLY:

Item	ACCSP Share (dollars and % of grant fees covered by ACCSP)	Direct State Share (dollars and % of grant fees covered by RIDEM)	Total
Fuel (travel)	\$750.00 (50%)	\$750.00 (50%)	\$1,500.00
NVivo software	\$2,672.86 (100%)	\$0.00 (0%)	\$2,672.86
Recorder	\$45.00 (100%)	\$0.00 (0%)	\$45.00
Baseball caps (interview incentive)	\$300.00 (100%)	\$0.00 (0%)	\$300.00
Total Supply	\$3,767.86	\$750	\$4,517.86

TOTAL:

Item	ACCSP Share	Direct State Share	Total
Total Direct Charges	\$61,383.77	\$31,220.43	\$92,604.20
Percentage	66%	34%	100%

COST DETAILS:

Description of budget categories and expenses for this project

Overall match: RIDEM is providing 34% of services as in-kind contribution (equivalent to a 51% match: $\$31,220.43/\$61,083.77=0.508$)

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:

- a. **Supervising Biologist:** 30% funded position to act as the principal investigator and conduct the interviews; 30% of salary (\$78,270) and fringe benefits (\$43,576) for one year = \$36,553.80.
- b. **Principal Biologist:** 7.5% funded position to act as support to the principal investigator and provide assistance in ensuring high data quality and proper entry; 7.5% of salary (\$69,394) and fringe benefits (\$51,785) for one year = \$9,088.43.
- c. **Seasonal Interns:** support for 1 seasonal intern to assist with data transcription (audio to digital files). Approximately 25% of annual salary (\$10,692) = \$2,673.00.

From RIDEM as match:

- a. **Supervising Biologist:** 10% funded position to act as the principal investigator and primary interviewer; 10% of salary (\$78,270) and fringe benefits (\$43,576) for one year = \$12,184.60.
- b. **Principal Biologist:** 2.5% funded position to act as support to the principal investigator and provide assistance in ensuring data quality and entry; 2.5% of salary (\$69,394) and fringe benefits (\$51,785) for one year = \$3,029.65.
- d. **Seasonal Interns:** support for 1 seasonal intern to assist with data transcription (audio to digital files). Approximately 25% of annual salary (\$10,692) = \$2,673.00.
- c. **Deputy Chief:** 5% funded to provide project oversight and staff management; 5% salary (\$91,301) and fringe benefits (\$61,992) for one year = \$7,664.65.
- d. **Professor of Marine Affairs:** The guidance provided by the URI professor (Dr. Tracey Dalton) will be provided as in-kind services. No formal monetary match will be provided; however, no associated costs will be incurred by ACCSP.

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 \$165/year
Assessed Fringe 4.25%
Retiree Health 6.75%

- Total annual fringe benefits for the Deputy Chief are \$61,992. Fringe benefits for 5% of his time are \$3,099.60.

- Total annual fringe benefits for Supervising Biologist are \$43,576. Fringe benefits for 40% of her time are \$17,430.40.
 - Total annual fringe benefits for Principal Biologist are \$51,785. Fringe benefits for 10% of her time are \$5,178.50.
- c. Travel**
 \$1,500 used for mileage and tolls for interviews with fishers and meetings with URI counterparts by RIDEM DMF staff. RIDEM will assume half of the costs; these costs are based on historical use under past RIDEM awards. This funding amount proposed will cover trips for pilot interviews (N=5), formal interviews (12<N≤30), and regular trips to URI by the principal investigator using RIDEM state vehicles.
From ACCSP: \$750
From RIDEM: \$750
- d. Equipment**
 No equipment will be purchased on this grant.
- e. Supplies**
From ACCSP:
- i. NVivo software (2 licenses at \$1,336.43 each) = \$2,672.86
 - ii. Audio recorder = \$45.00
 - iii. Embroidered hats (30 hats at ~\$10 each, including tax and shipping) = \$300.00
- f. Contractual**
 There are no contractual costs associated with this project.
- 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 2021 is 19.25%.

Summary of Proposal for Ranking

Proposal Type: New Project

Primary Program Priority: Economic and Sociological Data

Project Quality Factors:

Multi-Partner/Regional Impact - This project is specific to RI socioeconomic data collection of fluke and black sea bass fisheries. However, both species are jointly managed and socioeconomic data collected could be applied across the entire regional fishery for use in potential new management programs by interested partners. Data collection will be designed to collect information that will allow for comparison or application to other states' or federal fisheries. **Questions will address different gear types and areas fished which may allow for theoretical application to other fisheries utilizing the same gear types or operating in overlapping areas.** Interested partners could utilize the analysis to examine potential impacts on their commercial fisheries if considering or enacting a similar pilot program.

In-kind Contribution - Funding Transition Plan: One-year project. **In-kind contribution: 34%**

Data Improvement - **This proposal will provide a substantial improvement to data quality because data of this form are not currently being collected.** Specific data types will be targeted (e.g., trip-level business information; **90% social and economic, 10% catch and effort**), but the open-ended nature of the data collection process may also reveal other pieces of information that may be useful in management program evaluation and in leveraging existing datasets collected by ACCSP. **Data collected through this program will inform fishery managers, the fishing industry, and stakeholders on the economic and social benefits of an aggregate program.** This information is vital to the fishing industry when commenting on goals of management practices and assists fishery managers in ensuring effective management. **This work will also create a model for socioeconomic data collection in the context of fishery management program evaluation and develop an innovative platform for soliciting and storing of fisheries management information of this type.** Support garnered for the aggregate programs being evaluated will help to continue the trend towards electronic catch and effort reporting through supporting the RI Research Pilot Aggregate Program. **This work may help to improve catch and effort reporting, as aggregate program participants are required to report accurately via eTrips mobile to remain in the program and the resulting economic analysis may be used to support continuing the program.**

Stock Assessment Impact - **The project further encourages the use of eTrips mobile, which results in enhanced catch and effort data. Improved data quality may result in more accurate stock assessments.** This is especially important for high priority species like fluke and black sea bass. The program being evaluated through this data collection may also decrease discards by reducing the number of days of fishing. If this occurs, stock health may improve.

Secondary Module – As mentioned above, this research and data collection effort will serve to evaluate aggregate program efficiency. Depending on the results of this study, there may be additional support for flexible management programs like the pilot aggregate programs in RI, which require improved catch and effort data reporting. **Catch and effort data improvements may occur as a result of this program because aggregate program participants are required to report via eTrips mobile in a more timely manner to reduce recall bias. They are also required to use VMS aboard their fishing vessels to participate.**

Appendix B. Curriculum Vitae of Principal Investigator

JULIA C. LIVERMORE SHEEHAN, MEM

3 Fort Wetherill Road
Jamestown, RI 02835
Work Phone: 401.423.1937
julia.livermore@dem.ri.gov

EDUCATION

Sept. 2020 - Present **University of Rhode Island**, Kingston, RI
PhD Student: Marine Affairs

May 2015 **Duke University Nicholas School of the Environment**, Durham, NC
Master of Environmental Management (Coastal Resource Management)

May 2015 **Duke University Nicholas School of the Environment**, Durham, NC
Professional Certificate in Geospatial Analysis

May 2013 **Bowdoin College**, Brunswick, ME
Bachelor of Arts; Majors: Biology and Environmental Studies; Honors: Biology

RESEARCH EXPERIENCE

2018 – Present **Supervising Marine Biologist** - Rhode Island Department of Environmental Management, Division of Marine Fisheries (Jamestown, RI)

2016 – 2018 **Principal Marine Biologist** - Rhode Island Department of Environmental Management, Division of Fish and Wildlife, Marine Fisheries (Jamestown, RI)

2015 – 2016 **Marine Resource Impact Assessment Fisheries Specialist** - Rhode Island Department of Environmental Management, Division of Fish and Wildlife, Marine Fisheries Section (Jamestown, RI)

2015 **Anadromous Fisheries Technician** - Massachusetts Division of Marine Fisheries (New Bedford, MA)

2014 – 2015 **Graduate Teaching Assistant in Geospatial Analysis for Coastal and Marine Management** - Duke University (Durham, NC)

2014 **Climate-Fisheries Research Intern and Database Developer** - Gulf of Maine Research Institute (Portland, ME)

2013 – 2014 **Forage Fish Policy Analyst/Graduate Research Assistant** - Fisheries Leadership and Sustainability Forum (Beaufort and Durham, NC)

2013 **River Herring Fisheries Technician** - Maine Department of Marine Resources (Hallowell and Woolich, ME)

2012 **Doherty Coastal Studies Research Fellow** - Bowdoin College Coastal Studies Center (Brunswick and Orr's Island, ME)

HONORS / AWARDS

2019 **Rhode Island Department of Environmental Management Director's Award**

2014 **North Carolina Wildlife Federation Scholarship Grant**

2013 – 2015 **Duke Nicholas School Merit-Based Scholarship**

2013 – 2014 **Grua/O'Connell Research Award**

2012 **Doherty Coastal Studies Research Fellowship**

PUBLICATIONS

2020 ten Brink, T., Dalton, T., **Livermore, J.** In press. Integrating social and ecological research on the impacts of offshore wind farms in North America. In

- J. Phillipson (Ed.), *Researching people and the sea: methodologies and traditions*. London, UK: Palgrave Macmillan (Springer Nature Limited)
- 2018 **Livermore, J.,** T. Perreault, T. Rivers. 2018. Luminescent defensive behaviors of polynoid polychaete worms to natural predators. *Marine Biology*. 165:149
<https://doi.org/10.1007/s00227-018-3403-2>
- 2018 **Livermore, J.** 2018. Spatiotemporal and Economic Analysis of Vessel Monitoring System Data Within the New York Bight Call Areas. Rhode Island Department of Environmental Management, Division of Marine Fisheries Technical Report:
http://www.dem.ri.gov/programs/bnatres/fishwild/pdf/RIDEM_VMS_Report_2018.pdf
- 2017 **Livermore, J.,** M. Trainor, M.S. Bednarski. 2017. Response of anadromous *Petromyzon marinus* L. (sea lamprey) following dam removal and channel reconstruction in the Mill River, Massachusetts. *Northeastern Naturalist*. 24(3):380-390.
- 2017 **Livermore, J.** 2017. [Spatiotemporal and Economic Analysis of Vessel Monitoring System Data Within Wind Energy Area in the Greater North Atlantic](http://www.dem.ri.gov/programs/bnatres/fishwild/pdf/RIDEM_VMS_Report_2017.pdf). Rhode Island Department of Environmental Management, Division of Marine Fisheries Technical Report:
http://www.dem.ri.gov/programs/bnatres/fishwild/pdf/RIDEM_VMS_Report_2017.pdf

RESEARCH PROJECTS

- 2020 – 2022 **Fishing Status of Vessels Using the AIS: A Big Data and Machine Learning Approach**
MassCEC Offshore Wind Regional Pilot Fisheries Studies (Collaborator, July 2020 – December 2022 \$249,696)
- 2018 – 2020 **Assessing Impacts of the Block Island Wind Farm on Recreational Saltwater Fishing**
Rhode Island Sea Grant (co-Principal Investigator; February 2018 - January 2020; \$200,000)
- 2016 – 2018 **Understanding marine resource user response to ecological impacts of offshore wind energy: a case study of the Block Island Wind Farm**
Rhode Island Sea Grant (Principal Investigator; May 2016 – January 2018; \$56,437)
- An investigation of users’ preferences for and values of recreational boating activities associated with the Block Island Wind Farm**
Rhode Island Sea Grant (Investigator; May 2016 – January 2018; \$79,927)

RELEVANT SKILLS

- Software Aptitude** Proficient with R, Python, MATLAB, Microsoft Access, ArcGIS 10.x, ArcPy, NVivo
- Field Skills** AAUS Certified Research Diver and PADI Rescue Diver (over 150 logged dives), fish and invertebrate identification, field sampling (trawl, beach seine, fish pots, hydraulic dredge), otolith extraction, small vessel operation and trailering
- Safety/Medical** Wisconsin Certified Nursing Assistant (Lakeshore Technical College, Technical Diploma), RIDEM Certificate of Boating Safety Education, U.S Coastguard Auxiliary Boating Safety Course

**Continual Validation and Development of Conversion Factors for Priority Fish and Crustacean Species
US East Coast Cooperative Project**

**Revised Proposal submitted to the ACCSP from the
Commercial Technical Committee June 15, 2020**

Applicant: ACCSP Commercial Technical Committee (Chair: Michael Lewis, ACCSP Staff: Mike Rinaldi)

Project Title: Continual Validation and Development of Conversion Factors for Priority Fish and Crustacean Species

Project Type: New Project

Principal Investigators: Maine – Rob Watts
Rhode Island – Katherine Rodrigue
New Jersey - Matthey Heyl
Virginia - Ethan Simpson
North Carolina – Alan Bianchi
Florida - Steve Brown
NMFS SE – Lawrence Beerkircher

Requested Award Amount: \$142,056

Requested Award Period: One year upon receipt of funds

Date Submitted: June 15, 2020

Program Goals: Catch and Effort by improving data quality. Biological Data by providing whole weight/gutted weight, sex, length and possibly age data.

Primary Program Priority

- Catch and Effort
 - Weight-weight standardizations across reported quantities, landing conditions, geography, agencies, and time are essential components of the commercial data module.
 - More robust conversion factors by state or region increase confidence in commercial landings used in stock assessments for priority species.
- Biological Sampling
 - Advancing ASMFC, NMFS, State, Council, and ACCSP goals for biological sampling priorities based on project's list of species.

Objective: A primary objective of the ACCSP is to ensure that fisheries-dependent statistics used for fisheries management are accurate, consistent and compatible. This is a one-year, multi-partner project designed to validate, verify, update and document conversion factors used to determine whole (live) weight of commercial landings from reported units (ex. Gutted to whole, bushels to pounds, units to

pounds). Samples will be collected along the East Coast of the US (**Maine, Rhode Island, Virginia, North Carolina, and Florida**) throughout the year to assess spatial and temporal variability. **Data obtained in this study will be used to validate conversion factors currently in use by individual partners and propose modifications and standardization if necessary.** This will be a truly collaborative project involving multiple ACCSP partners and the commercial industry. **Standardization of conversion factors will result in more reliable data for stock assessments, quota monitoring and other regional projects such as the NOAA Fisheries of the US document.**

Need: Commercial landings data provide the platform upon which most research, assessments and management plans are based. Data collection authorities obtain information from commercial records; however, commercial records are often in native units that are of limited use for data analysis. Conversion factors are used to convert landed condition weight or landed units of commercial seafood products to whole weight. Although many fisheries land product in whole form which does not require conversion, others record product in gutted, headed, carcass, filet, tail, loins, fins or some other partial form of the fish. Conversion factors are also necessary for product landed in units other than weight in pounds, such as number, thousands, bushels or dozens. In addition, shellfish and crustacean fisheries generally land product as bushels, bags, baskets, numbers, shell on, shell off, or meat only. Conversion factors are then applied to these landed conditions or units with the resulting output of whole weight in pounds.

Standardizing reporting to whole weight in pounds has advantages for trend analysis and comparison between reporting agencies. Unfortunately, there is currently wide variation in conversion factors used among ACCSP partners, and many of those conversion factors have not been verified in recent history. Hesselman and Kemp (2006) analyzed conversion factors in use along the east coast and found that conversion factors for the same species differ from state to state (Table 1). In general, states north of Virginia use standard historical NMFS-NE conversion codes while states south of Virginia use different and unique conversions. **Inconsistencies result in uncertainty when comparing landings among partners and can cause significant problems for species managed under state-by-state or regional quotas.**

Table 1. State conversion factors for selected species and grades. Fish conversions are those employed to go from reported weight to whole weight, for specific market categories. Blue crab and American Eel conversions are those employed to go from reported quantity to whole weight. (Data table of conversions for all Atlantic Coastal States extracted from SAFIS May 2020) .

Partner	Snowy Grouper (Gutted)	Menhaden (Bushel)	Sharpnose Shark (Gutted)	Blue Crab (Bushel)	American Eel (Number)
ME	1.25	70	2	65	1.1
RI	-	-	1.39	65	-
NJ	-	65	1.39	40	0.9358
VA	-	-	1.39	65	1.24
NC	1.25	-	2 (all shark carcasses)	40	-
SC	1.11	-	1.33	40	-
FL	1.18	0.25 (numbers)	1.39	0.5 (numbers)	-

SEFSC	1.11		1.33	40	
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Available documentation of conversion factors currently in use is sparse. In fact, an online search resulted in no readily accessible documentation of NMFS or other partner standard conversions. What sparse information was online was found to be primarily from single species research studies. Historical documents on file with the North Carolina Division of Marine Fisheries (NCDMF) indicate that the NMFS appeared to be the primary source of conversion factors from 1980 to 1990 (NMFS, 1980 and 1990). There are also individual memoranda by NMFS Southeast Fisheries Center staff presenting conversion factors to be used for shrimp, king mackerel, shark fins, wreckfish, tuna and hard clams. These data were obtained from various Science Centers, most likely based on research studies undertaken at that time although there are no raw data presented for confirmation. However, NMFS 1990, contains a complete summary of conversion factor sources presented in the document, including internal NMFS memos and published papers. Most conversion factors in use today were based on these historical data although no validation of these conversions can be found since 1990.

Bennett and Kanwit (2010) coordinated a regional pilot project to sample for conversion factors for monkfish, sea scallops, sea herring and spiny dogfish. Their results showed spatial differences in conversion factors for monkfish and sea scallops, large variability in industry standard weights for sea herring and differences between accepted ACCSP standard conversions and their findings. Their report also presented some of the same difficulties they experienced in obtaining commercial samples, primarily due to reluctance on the part of the commercial industry to assist but also due to annual variations in effort toward any given species. Their established sampling protocols will be similar in this study.

Most of the historical conversion factor documentation grouped many of the individual species into larger taxonomic groupings due to either lack of data or the desire to group these species for presentation purposes. However, there can be considerable variation between species within some of these groups. For sharks, there have been a number of studies done on the conversion of fin weights to whole weight because of the popularity of and controversy over the practice of shark finning and proposed regulatory measures to curtail this practice. These results show large interspecies variability in the conversion of fin weight to whole weight ranging from 45 for porbeagle, 48 for blue and 59 for mako shark in New Zealand (fin weight X conv. = whole weight)(www.fish.govt.nz). Interspecies variability is also evident in the grouper family. In 2009, NCDMF conducted a study to collect samples of commercially caught fish and validate the conversion factors currently in use for grouper and snapper species. Preliminary results from this study showed interspecies variability, as well as variability within the sexes. Results from this study allowed for species-specific and gender-specific conversion factors to be calculated.

In 2010, a similar study was conducted by program partners in coordination with the ACCSP in order to validate or update existing conversion factors. Each partner's methods were cross-examined to determine which one was the most thorough approach to conducting conversion factor studies for each species or groups of species. A broad dataset compiled from landings data was also examined in that dealers and fishermen were selected throughout the state, all market grades of fish were targeted as well as vessels using all gear types pertinent to the target species. Landings data were used to assist samplers with coordinating sampling trips by showing when and where species were typically harvested.

Table 2. Conversions from gutted to whole weight for Snowy Grouper obtained from the State-ACCSP study in 2010 compared with existing factors from SAFIS in May 2020

	SC (n=67)	NC, SC, FL (n=83)
2010 Study	1.088	1.0836
2020 SAFIS CF	1.11	1.25 (NC) 1.18 (FL)

*Note: Grouper conversion factors currently in use in the southeast Atlantic Ocean are: NC-1.25, SC-1.11, GA-1.18, FL-1.18.

It is also probable that conversions can change over time as fish stocks are subjected to overfishing, strict regulatory protections, and/or changes in migration patterns caused by fluctuating ocean temperatures. Each of these impacts can affect diet, metabolism, and reproductive patterns thus changing physical condition and tissue allocation. It is unlikely that the majority of conversion factors currently in use along the US east coast have been updated since NMFS published the list of conversions in 1990 (NMFS 1990).

It is for many of the reasons stated above that it is important to update historical conversion factors and to sample under spatial and temporal differences. A regional cooperative project is thus preferred.

Results and Benefits: As a result of this study, partners will develop conversion factors that more accurately represent spatial realities of their state or region. The resulting validated conversion factors will make reporting of quota monitored species more accurate and consistent for management. These results will also be used to update historical conversion factors and provide previously unavailable documentation of source, variation within seasons, sexes, species and location. These benefits will aid the commercial fishing industry by providing consistency and accuracy among reporting agencies.

Previous Approach: In 2010, a cooperative ACCSP, state, and federal project consistent with the guidelines above was established. Between 2010 and 2013, several studies were conducted individually to verify the validity of conversion factors. Each partner’s methods were cross-examined to determine which one was the most thorough approach to conducting conversion factor studies for each species or group of species.

The project faced constant overarching concerns among all the participants in the study, including; inadequate funding to procure sufficient samples, differences in the methods for data collection among partners, inability to collect sufficient sample sizes, and difficulty in obtaining samples representative of both temporal and spatial distributions and representative of all grade categories (Dukes et al. 2016).

Due to the previously mentioned concerns, some partners did not feel comfortable recommending a single conversion factor for the region. The project was reviewed by the ACCSP Biological and Bycatch Committees, and initial feedback was provided. The Committees made several suggestions for ACCSP to consider changing how conversion factors are implemented in order to better reflect the biology of the species: to incorporate seasonality into the conversion factors for species that exhibit different

size/growth rates throughout the year; and to consider moving away from state (agency)-based factors in favor of biologically informed regional-based factors.

The Commercial Technical Committee decided to proceed by focusing on a smaller number of species, and design a sample method around it. This regional approach could facilitate future projects and avoid issues associated with the pilot study.

Approach: During the Commercial Technical Committee meetings in 2019 and 2020, members expressed dissatisfaction with conversion factors being used for weight-weight conversions. ACCSP staff requested a list of priority species be submitted by each partner. From the 8 responding partners, the number of votes were tallied per species. This list was reviewed by a conversion factor working group in April 2020, in conjunction with materials prepared by ACCSP staff including summaries of commonly-used conversion factors in the Data Warehouse and a summary of the most recent biological-bycatch matrices.

The working group determined that American Eel, Atlantic Menhaden, Atlantic Sharpnose Shark, Blue Crab, and Snowy Grouper were ideal candidates for the project. Multiple ComTech representatives had listed each species, and at least one working group member had expressed interest. The biological, geographic, and industry differences between the species were intended to help inform future projects. Additionally, the list represented a mix of ASMFC, state, NMFS, and Council biological sampling priorities.

Each partner participating in this study will conduct their own sampling, determine their specific sampling schedule and independently conduct their own analysis (Table 3). Analyses will rely on standard linear regression methods. Each partner will obtain samples from those species of interest to them and attempt to obtain samples from other species collected by other partners. These data will then be compiled, validated for standard methodology and summarized in a final report to be published in a scientific journal.

Table 3. List of project partners and species of interest.

Species of Interest	Primary States
Atlantic Menhaden	ME, NJ, VA, NC, FL
Blue Crab	NJ, RI, VA (historic), NC, FL
American Eel	ME, NJ, VA, NC, FL*
Atlantic Sharpnose Shark	NJ, NC, FL
Snowy Grouper	NC, FL

*Florida may not be able to collect an adequate number of American eel samples without participation of it's Division of Freshwater Fisheries which has dropped out of the study. Efforts will be made to collect more samples of the other target species.

Methodology to be used by all partners

Sampling methodology will be standardized among partners. Samples should be derived from the commercial fishery to the greatest extent possible. In cases where fisheries products from other sectors closely resemble those of the commercial fishery, samples may be used upon coordination with state leads. **Samples shall be obtained throughout the year, from different fishermen, fish houses, regions of the state, market grades and conditions, depending on availability.**

In summary, samplers will coordinate with commercial dealers and fishermen to have whole forms of product brought to the dock at a time when the sampler can meet the boat and conduct the sampling; except some HMS species where sampling can be conducted on board the vessels by fisheries observers. The purpose of the study will be explained to the fishermen and dealer.

Finfish samples shall be determined by statistical analysis of existing data using regression analysis with a set target by species by month. The minimum target of samples shall be determined by each partner, and will allow partners to achieve the appropriate sampling methodology. However, samples ought to exceed the 2010 Study for selected species.

Table 5. Number of samples collected for 2020 target species from 2010 Conversion Factor study.

Species	FL	GA	NC	SC	SEFSC	Total
Snowy Grouper	12	-	7	67	-	86
Blue Crab	1,278	200	385	-	-	1,863

Finfish

Samplers will obtain fish at the dealer when they are offloaded by the vessel or alternatively, on board the vessel, depending on the situation. The whole weight of each individual fish sample will be taken using digital scales to the nearest 0.1 kg if the fish is less than 10 kg and the fish house scale if larger than 10 kg. Total length to the nearest millimeter will be taken with a metric rule fish board or flexible tape measure. Each specimen will then be gutted, sexed and reweighed. If the fish is normally landed headed, finned, as a carcass or other form, then those actions will be undertaken using industry standards and weights obtained at each phase. If the fish is normally landed in counts or some volumetric unit then an appropriate subsample will be taken and the number of fish per unit counted. Once all measurements are completed the fish will be returned to the fisherman or dealer.

Although not required for this study, individual partners sampling finfish (NC to FL, NMFS-SE and NMFSNE) may **choose** to obtain samples of gonads for fecundity analysis or otoliths for age

determination. Obtaining otoliths may increase the cost of sampling since these fish will be unsellable and will need to be purchased from the fisherman or dealer.

Crustacean Shellfish

Crustacean shellfish can be obtained at the dealer when they are offloaded by the vessel, obtained from cold storage, or at a processing facility. Each unit (bushel, tote) shall be weighed then opened and each item counted. Shellfish width shall be measured to the nearest millimeter using digital calipers. Each specimen shall then be weighed to the nearest 0.1 gram on a digital scale. Once all measurements are completed the shellfish can be returned to the fisherman or dealer.

Geographic Location and Samples Species:

- Maine- Atlantic Menhaden, American Eel
 - a. Dealer and harvesters
- Rhode Island - Blue Crab
 - a. Winter dredge survey in Narragansett Bay and RI Sound
 - b. Dealers and harvesters
- New Jersey - Atlantic Menhaden, Atlantic Sharpnose Shark, American Eel, Blue Crab, Snowy Grouper
 - a. Dealers and harvesters
- Virginia - Atlantic Menhaden, American Eel
 - a. Dealers and harvesters
- North Carolina - Atlantic Menhaden, Atlantic Sharpnose Shark, American Eel, Blue Crab, Snowy Grouper
 - a. Morehead City headquarters with sampling conducted along coastal NC
- Florida - Atlantic Menhaden, Atlantic Sharpnose Shark, American Eel, Blue Crab, Snowy Grouper
 - a. St. Petersburg with sampling conducted east coast of Florida
- NMFS-SE - Atlantic Menhaden, Atlantic Sharpnose Shark, American Eel, Blue Crab, Snowy Grouper
 - a. Miami with sampling conducted in coastal NC and on the east coast of FL, as well as at sea in various offshore waters of the northwestern Atlantic and Gulf of Mexico.

Data Delivery Plan: Partner specific data forms will be used by all samplers. Each partner will determine the format of their database but must be able to output and share data in a standard format with other partners. **Variables collected must at a minimum include species, date, gear, area fished, whole weight, processed weight, and processed condition. Upon completion of the sampling phase of the project, partner files will be combined into a single csv file and shared with all partners during analysis. Because the analytical process often identifies errant data, the final data set will be submitted to ACCSP upon project completion.**

Milestone Schedule:

Task	Month
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	1	2	3	4	5	6	7	8	9	10	11	12
Hire samplers	X	X										
Purchase Equipment	X	X										
Coordinate between fishermen and dealers to obtain samples		X	X	X	X	X	X	X	X	X	X	X
Sample fish and shellfish			X	X	X	X	X	X	X	X	X	X
Analyze data					X	X					X	X
Semi Annual report						X						X

Cost Summary (Budget): See Attachment A for partner specific budgets.

Description	Total Cost	In-Kind
Personnel (a)		
RI	\$8,663	\$0
NJ	\$19,761	\$5,361
NC	\$49,369	\$24,869
FL	\$23,986	\$0
Subtotal(a)	\$101,779	
Fringe (b)		
RI	\$6,371	\$0
NJ	\$3,576	\$2,474
NC	\$8,100	\$1,902
FL	\$9,969	\$0
Subtotal(b)	\$28,016	
Travel (c)		
RI	\$0	\$0
NJ	\$2,125	\$0
NC	\$5,450	\$0
FL	\$1,130	\$0
Subtotal(c)	\$8,705	
Equipment (d)		
RI	\$0	\$0
NJ	\$0	\$0
NC	\$0	\$0
FL	\$0	\$0
Subtotal(d)	\$0	
Supplies (e)		
RI	\$950	\$0
NJ	\$13,500	\$1,000

NC	\$8,565	\$1,500
FL	\$800	\$0
Subtotal(e)	\$23,815	
Totals		
Total Direct Charges (i)	\$154,314	
Indirect Charges (j)	\$27,411	
Total (sum of Direct and Indirect) (k)	\$181,724	
Requested Total	\$142,056.31	

In-Kind Contribution: 21.83% of total project cost, \$39,667.69. All requested totals are bolded in partner-specific budgets.

Literature Cited:

A. Dukes et al., 2016. Cooperative Project on the Validation of Commercial Finfish and Shellfish Conversion Factors for the US East Coast. Atlantic Coastal Cooperative Statistics Program, Commercial Technical Committee, Arlington, Virginia. 22 pages.

Bennett, T. and K. Kanwit. 2010. Conversion Factor Update Sampling in Maine, NH and MA-Pilot Phase. Final Report submitted to the ACCSP.

Hesselman, D. and G. Kemp. 2006. ACCSP Conversion Factor Assessment Summary of Findings. North Carolina Division of Marine Fisheries, Morehead City, North Carolina. 19 pages.

NMFS, 1980. Conversion Factors for Fish and Shellfish used in the United States. Chief, Resource Statistics Division, National Marine Fisheries Service, Washington DC. 18 pages.

NMFS, 1990. NMFS Conversion Factors. Memorandum from Mark C. Holliday, Acting Chief, Fisheries Statistics Division, National Marine Fisheries Service, Silver Spring, MD to NMFS Regional and Science Directors.

Pilot Study of Conversion Factors Used by the North Carolina Trip Ticket Program (NA05NMF4741003). 2010; North Carolina Division of Marine Fisheries, Prepared by Alan Bianchi.

Principal Group Members:

Maine – Rob Watts

Rhode Island – Katherine Rodrigue

New Jersey - Matthey Heyl

Virginia - Ethan Simpson

North Carolina – Alan Bianchi

Florida - Steve Brown, Chris Bradshaw

NMFS SE – Lawrence Beerkircher

Attachment A

Specific Partner Budgets

New Jersey

Description	Calculation	Cost
Personnel (a)		
Biologist (FTE)	10% of salary	\$5,361.00
Technician (PTE)	900 hours @ \$16.00/hr	\$14,400.00
Subtotal(a)		\$19,761.00
Fringe (b)		
Biologist (FTE)	46.15%	\$2,474.00
Technician (PTE)	7.65%	\$1,102.00
Subtotal(b)		\$3,576.00
Travel (c)		
Mileage for sampling trips	Fuel / Mileage \$0.35 per mile Average 100 miles per trip 35 trips	\$1,125.00
Vehicle Maintenance		\$1,000.00
Subtotal(c)		\$2,125.00
Equipment (d)		
Subtotal(d)		\$0.00
Supplies (e)		
Office Supplies and Information Processing		\$1,000.00
Field Supplies		\$2,500.00
Finfish / Blue Crab Samples		\$10,000.00
Subtotal(e)		\$13,500.00
Contractual (f)		
Subtotal(f)		\$0.00
Other (h)		
Subtotal(h)		\$0.00
Totals		
Total Direct Charges (i)		\$39,061.70

Indirect Charges (j)	22.2% 1,739.39 NJ 3,441.36 ACCSP	\$5,181.00
Total (sum of Direct and Indirect) (k)		\$44,242.45
Requested Total		\$31,442.96

North Carolina

Description	Calculation	Cost
Personnel (a)		
Biologist (FTE)	10% of salary, includes SS and IND	\$24,869.00
Technician (PTE)	35 hours per week, 11 mo @ \$13.86/hr	\$24,500.00
Subtotal(a)		\$49,369.00
Fringe (b)		
Biologist (FTE)		\$0.00
Technician (PTE)	7.65% of salary	\$1,875.00
Technician (PTE)	Indirect 25.4% of salary	\$6,225.00
Subtotal(b)		\$8,100.00
Travel (c)		
Lodging In-State	30 Trips @ \$75 per trip	\$2,250.00
Per Diem In-State	30 trips @ \$40 per trip	\$1,200.00
Gas		\$500.00
Ferry Charges, Parking, Miscellaneous		\$1,500.00
Subtotal(c)		\$5,450.00
Equipment (d)		
Subtotal(d)		\$0.00
Supplies (e)		
Clerical Supplies	Paper, pens, clipboards, etc	\$500.00
General Office Supplies	Phone, fax, etc	\$1,500.00
Computer Supplies	Computer	\$3,000.00
Samples/Sampling Gear	Samples/Incentives	\$2,500.00

Samples/Sampling Gear	Rain Gear	\$75.00
Samples/Sampling Gear	Gloves	\$30.00
Samples/Sampling Gear	Shucking Knives/Filet Knives/Sharpening Stone	\$125.00
Samples/Sampling Gear	Digital Scales	\$460.00
Samples/Sampling Gear	Measuring Board	\$25.00
Samples/Sampling Gear	Boots	\$50.00
Samples/Sampling Gear	Aprons	\$200.00
Samples/Sampling Gear	Carry contained / Tote	\$50.00
Samples/Sampling Gear	Cleaning Supplies	\$50.00
Subtotal(e)		\$8,565.00
Contractual (f)		
Subtotal(f)		\$0.00
Other (h)		
Subtotal(h)		\$0.00
Totals		
Total Direct Charges (i)		\$63,384.00
Indirect Charges (j)		\$8,100.00
Total (sum of Direct and Indirect) (k)		\$71,484.00
Requested Total		\$44,615.00

Rhode Island

Description	Calculation	Cost
Personnel (a)		
Biologist (FTE)	30 days at \$288.77 per day	\$8,663.10
Subtotal(a)		\$8,663.10
Fringe (b)		
Biologist (FTE)	30 days at \$212.36 per day	\$6,370.80
Subtotal(b)		\$6,370.80
Travel (c)		
Subtotal(c)		\$0.00
Equipment (d)		
Subtotal(d)		\$0.00
Supplies (e)		
Digital scale	1 item	\$650.00
Digital calipers	2 items	\$300.00
Subtotal(e)		\$950.00
Contractual (f)		
Subtotal(f)		\$0.00
Other (h)		
Subtotal(h)		\$0.00
Totals		
Total Direct Charges (i)		\$15,983.00
Indirect Charges (j)		\$2,894.03
	19.25%	
Total (sum of Direct and Indirect) (k)		\$18,877.93
Requested Total		\$18,877.93

Florida

Description	Calculation	Cost
Personnel (a)		
Staff (FTE)	4.361 biweeks x \$1,374.84 pay	\$5,995.68
OPS 1 (PTE)	160 hours at \$15.00 per hour	\$2,400.00
OPS 2 (PTE)	507 hours at \$16.00 per hour	\$8,112.00
OPS 3 (PTE)	507 hours at \$14.75 per hour	\$7,478.00
Subtotal(a)		\$23,985.68
Fringe (b)		
Staff (FTE)	FICA + Insurance	\$2,516.30
OPS 1 (PTE)	FICA + Insurance	\$690.00
OPS 2 (PTE)	FICA + Insurance	\$4,592.25
OPS 3 (PTE)	FICA + Insurance	\$2,170.35
Subtotal(b)		\$9,968.90
Travel (c)		
Fuel for state trucks	45 trips (70 miles) \$3.00 per gallon @ 15mpg	\$630.00
Truck maintenance		\$500.00
Subtotal(c)		\$1,130.00
Equipment (d)		
Subtotal(d)		\$0.00
Supplies (e)		
Field gear	Scales, measuring board, bags, knives	\$800.00
Subtotal(e)		\$800.00
Contractual (f)		
Subtotal(f)		\$0.00
Other (h)		
Subtotal(h)		\$0.00
Totals		
Total Direct Charges (i)		\$35,884.87
Indirect Charges (j)	31.31%	\$11,235.55
Total (sum of Direct and Indirect) (k)		\$47,120.42
Requested Total		\$47,120.42

Summary of Proposal for Ranking Purposes

Proposal Type: New

Primary Program Priority:

- **Catch and Effort:** This project will result in more reliable data for stock assessments, quota monitoring, and other regional projects such as the NOAA FUS. The effect of more reliable weight-weight conversions would be reflected across the ACCSP Data Warehouse, SAFIS, and any data provided by the ACCSP.
- **Biological Sampling:** This project will allow for increase in sampling for priority species, and facilitate relationships between management agencies and industry.

Project Quality Factors:

- **Multi-Partner/Regional Impact:** The project has been discussed at multiple Commercial Technical Committee meetings, and on monthly calls with a working group composed of staff from North Atlantic, Mid-Atlantic, and South Atlantic agencies. It represents a collaborative effort in designating priority species and advancing the quality of commercial data
- **Funding Transition Plan or Defined End-Point:** This is a one year project for collecting commercial samples. Report progress is expected in July and December of the calendar year of funding.
- **In-Kind Contribution:** The in-kind contribution to the sampling portion of this project equate to 21.83% of the project's cost. When factoring in coordination/calls, additional analysis, data delivery, and data storage for state and ACCSP staff, this total may have a significantly higher value.
- **Improvement in data:** Reliable conversion factors will create greater confidence when transforming data into and from different quantities and conditions.
- **Impact on Stock Assessment:** An improvement in state-specific conversion factors will have an enormous impact on stock assessments. The method employed in many assessments is to employ the recalculation of landing condition, based on species, by state-specific conversion factors.

Attachment B

CV's of Principal Investigators

Robert B. Watts II

Maine Department of Marine Resources

(207) 633-9412

rob.watts@maine.gov

June 2020

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 Operations Committee, Commercial Technical Committee, Information Systems Technical Committee, Standard Codes 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.

Katherine E. Rodrigue

Principal Marine Biologist
RIDEM Div. of Marine Fisheries
3 Ft. Wetherill Rd, Jamestown, RI
401-423-1944
katherine.rodrigue@dem.ri.gov

Education:

2009-2013 Bachelor of Science, University of Rhode Island, Major in Marine Biology
Overall GPA: 3.77
Relevant Coursework in Major: Biology and Ecology of Fishes, Marine Biology, Ecology, Vertebrate Biology, Genetics, Animal Development, Animal Behavior

Fall 2011 Bermuda Institute of Ocean Sciences
GPA: 3.84
Course Work: Coral Reef Ecology, Marine Invertebrate Zoology, Research Diving Methods, independent research.

Work Experience:

May 2018 – present

Principal Marine Biologist, RI Department of Environmental Management – Division of Marine Fisheries, Jamestown, RI

Conduct fisheries independent surveys for assessment of recreationally and commercially important fisheries populations in Narragansett Bay, RI's coastal ponds, and RI and Block Island sounds. Lead the Coastal Pond Seine Survey and collect, analyze, and summarize beach seine survey data from Rhode Island's coastal ponds and estuaries for the purpose of forecasting recruitment in relation to the spawning stock biomass of winter flounder and other recreationally important species. Lead the Coastal Pond Shellfish Survey to assess the distributions and density of shellfish resources (particularly quahogs) in the coastal ponds. Develop a fishery-independent blue crab winter dredge survey to assess and characterize the population of this emerging fishery in RI. Respond to fish kills and assess loss of marine resources and damage to marine environment due to natural or pollution-driven mortality events. Compile and analyze fisheries data for use in stock assessments and technical reports.

October 2016 – May 2018

Marine Biologist, RI Department of Environmental Management – Office of Water Resources, Providence, RI

Conducted water quality monitoring of all shellfish growing area waters within the state of RI. Monitoring included sampling water for fecal coliform bacteria, harmful algal blooms, and occasionally male-specific bacteriophage. Sampling was conducted by boat (one 23-foot boat for sampling within Narragansett Bay and one 16-foot aluminum boat for sampling within the coastal ponds) and from shore. Collected and reviewed laboratory results provided by the RI Department of Health. Determined concentration of harmful algal species and monitored these

concentrations to ensure safe shellfish waters. Determined when additional action was required based on the Harmful Algal Bloom Management Plan in order to maintain a close watch on algal blooms and toxicity levels. Analyzed bacteriological data and compiled for technical report writing. Use of ArcMap GIS for creating maps illustrating shellfish water classifications and pollution sources for use in technical reports as well as planning of field work. Coordinated and conducted shoreline surveys throughout the state to identify potential and actual pollution sources and sample when necessary, as well as determine volumetric flow rates for analyzing their bacteriological impact. Ensured compliance with FDA and EPA standards.

January 2016 – September 2016

**Fisheries Specialist – APAIS Field Technician, Atlantic States Marine Fisheries Commission/RI
Department of Environmental Management, Wakefield, RI**

Conducted the Access Point Angler Intercept Survey in Rhode Island as part of the NOAA Marine Recreational Information Program. Visited coastal access sites throughout the state to interview recreational anglers on their catch, effort, and demographics. Conducted interviews at sea on board for-hire vessels while also measuring harvested catch and discards. Conducted outreach to the public and the recreational fishing community by attending and speaking at local fishing club meetings and larger organizations such as the Rhode Island Saltwater Anglers and the Rhode Island Party and Charter Boat Association. Assisted in overall implementation and logistics of the survey where needed.

May 2014 – January 2016 (seasonal)

Research Assistant, RI Department of Environmental Management– Marine Fisheries, Jamestown, RI

Assisted with all aspects of marine fisheries research of finfish and commercially important invertebrates in Narragansett Bay. Assisted in field surveying using commercial gear including seines, fish pots, trawls, clam dredge, SCUBA. Entered data into MS Access databases. Removed and prepped otoliths, opercula, and scales for aging various finfish.

Checked commercial fishermen logbook compliance in accordance with RI and Atlantic Coastal Cooperative Statistics Program standards. Required to work frequently on small boats and in occasional adverse weather conditions. Helped with general maintenance of equipment, survey and fishing gear (including knotting/splicing line), and boats. General office work.

Sep. 2014 – Sep. 2015 (two seasons)

Data Manager, Ocean Exploration Trust (OET), Caribbean

Participated in two one-month cruises on board the exploration vessel Nautilus using remotely operated vehicles to explore geological and biological features of the deep sea in the Caribbean and Pacific Northwest. Managed all data collected to the satisfaction of visiting scientists and while adhering to OET protocols. Managed the wet lab, processed samples, and enforced safety protocols. Ran multibeam sonar and subbottom profiler. Wrote summary reports for each ROV dive, entered data into spreadsheets, trained and supervised interns.

Feb. – May 2014

Educator, Save the Bay, Providence, RI

Taught classes on marine science to children of all ages in a variety of settings including afterschool programs, classrooms, field sites, and on board Save the Bay education vessels. Subject matter included local marine ecosystems and organisms and coastal conservation.

Sept. 2013 – Jan. 2014

Education and Aquarist Intern, Save the Bay, Newport, RI

Assisted in husbandry and general maintenance of all Narragansett Bay themed exhibits at the aquarium including feeding, water changes, exhibit design, and animal identification. Worked at admissions desk, taught both adult and child visitors about the animals in the exhibits, gave guided tours, helped children at the invertebrate and shark touch tanks. Assisted with extra educational programs (i.e. seal watching tours and beach combing activities).

October 2013

Ocean Science Intern, Ocean Exploration Trust, Caribbean

Spent one month on board the exploration vessel Nautilus using remotely operated vehicles to explore geological and biological features of the deep sea in the Caribbean region. Served as a data logger by recording observations, samples, and taking photos to document findings. Processed samples in the wet lab after each dive.

May 2012 – December 2013

Research Assistant, University of Rhode Island, Kingston, RI

Used SCUBA survey techniques and in situ as well as laboratory experiments to study the invasive macroalga *Heterosiphonia japonica*. Required to work independently to complete research including monitoring weather and marine conditions such as tides, winds, and wave action to determine appropriate times for diving.

Research Experience:

- Project PI for Assessment of Juvenile Finfish in RI Coastal Ponds and Embayments, RI DEM Division of Marine Fisheries.
- Project PI for Assessment of Shellfish Resources in RI Coastal Ponds, RI DEM Division of Marine Fisheries.
- Distribution and ecological impacts of the invasive macroalga *Heterosiphonia japonica* (mentor: Dr. Carol Thornber, URI) – May 2012 – December 2013.
- Relationship between wingspan and length of two species of skates in Narragansett Bay (mentor: Dr. Jeremy Collie, URI) – January 2013 – May 2013
- Size structure, otolith characteristics and reproduction of the Bermuda anchovy, *Anchoa choerostoma* (Mentor: Dr. Joanna Pitt, Bermuda Department of Environmental Protection) – November 2011-December 2011
- Symbiotic bacteria of Rhode Island tunicates (mentor: Dr. Steven Irvine, URI) – May 2011 – May 2012

Publications and Technical Writing:

- Rodrigue K, C McManus, P. August, A. Desbonnet & J. Sassi. 2019. The Fish of Little Narragansett Bay. In (Janice M. Sassi, Editor) The State of Napatree Report, The Watch Hill Conservancy.

- Rodrigue, K., Lake, J. 2020. Assessment of Recreationally Important Finfish Stocks in Rhode Island Waters, 2019 Annual Performance Report for USFWS Sportfish Restoration Grant, Job 3.
- Rodrigue, K., Lake, J. 2019. Assessment of Recreationally Important Finfish Stocks in Rhode Island Waters, 2018 Annual Performance Report for USFWS Sportfish Restoration Grant, Job 3. RI DEM Division of Marine Fisheries, Jamestown, RI.
- Schneider, E., Rodrigue, K. 2015. ASMFC Coastal Shark Compliance Report. RI DEM Div. of Fish and Wildlife, Jamestown, RI.
- Schneider, E., Rodrigue, K. 2015. ASMFC Spiny Dogfish Compliance Report. RI DEM Div. of Fish and Wildlife, Jamestown, RI
- Newton, C., M. Bracken, M. McConville, K. Rodrigue, and C.S. Thornber. 2013. Invasion of the red seaweed *Heterosiphonia japonica* spans biogeographic provinces in the western North Atlantic Ocean. PLoS ONE 8(4): e62261. doi:10.1371/journal.pone.0062261

Professional Affiliations and Certificates

- ASMFC Introduction to Stock Assessment (2020)
- FEMA courses: Incident Command System 100 and 200 and National Incident Management System 800 (2019)
- RI Boating Safety certification (2014)
- Advanced Open Water SCUBA (2011)
- American Academy of Underwater Sciences Research Diver (2011)
- Open Water SCUBA (2004)

Matthew Heyl

New Jersey Fish and Wildlife

Bureau of Marine Fisheries

Nacote Creek Research Center

360 N. New York Rd. (Rt. 9)

P.O. Box 418

Port Republic, NJ 08241

(609)748-2020

Matthew.Heyl@dep.nj.gov

Education

Bachelor of Science | 2008 | Richard Stockton College of New Jersey

- Major: Marine Biology

Brookdale Community College

- Major: Environmental Science

Experience

Fisheries Marine Biologist | New Jersey Division of Fish and Wildlife | 11/18 to current

- Oversee New Jersey's commercial fisherman and dealer reporting
 - Supervising the entry in the state's compliance file, entry of report in SAFIS eTRIPS, QA/QC of entry, and uploading of data to ACCSP
 - Reviewing commercial dealer reports in SAFIS eDR for accuracy
 - Reaching out to commercial fisherman via by phone, email, letter or in person to discuss reporting requirements
- Oversee New Jersey's commercial biological sampling
 - At sea observer trips for American lobster and tautog
 - Communicating with commercial fisherman for dockside sampling
 - Supervise and participate in the processing of commercially important species
- Active member on the ACCSP Commercial Technical, Information Systems, and Standard Codes committees
- New Jersey's contact for confidential data access for ACCSP's data warehouse

- Processing of data request from ACCSP and state biologist
- Participating in NJDFW field sampling
- Supervising hourly and summer employees
- Writing technical reports for ASMFC managed species
- Grant writing for proposals of funding

Fisheries Specialist | Atlantic Coastal Cooperative Statistics Program | 01/18 to 11/18

- 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

Hourly 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 timeline 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

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

Skills & Abilities

Work Related Certificates

- ASMFC Introduction to Stock Assessment
- Rutgers University Introduction Fisheries Science for Stakeholders
- US Fish and Wildlife Electro- Fishing
- PADI – Advanced Scuba Diver
- New Jersey Safety Boating Certificate (with driver license endorsement)

Publications and Presentations

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

Presentations:

- Heyl, M. “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, Jacques Cousteau National Estuarine Research Reserve, Tuckerton, NJ.

Ethan S. Simpson

Biological Sampling Supervisor
Virginia Marine Resources Commission
380 Fenwick Road, Hampton VA, 23651
757-247-2272
ethan.simpson@mrc.virginia.gov

Education:

M.S. Marine Biology concentrated in Fisheries Management, 2016 University of North Carolina
Wilmington, Wilmington, NC Research Advisor: Dr. Frederick Scharf
Thesis Title: “Identify Possible Bias in the North Carolina Red Drum Juvenile
Abundance Index: Historical Trends and the Potential for a Partial-Replacement Design”

B.S. Marine Biology with Chemistry minor, 2014
University of North Carolina Wilmington, Wilmington, NC Honors Thesis Title: “Habitat
Utilization and Size Analysis of *Trachinotus Carolinus* Surveyed on Wrightsville Beach,
NC from Nourished and Non-Nourished Beach Sites”

Relevant Work Experience:

May 2019 – present
Biological Sampling Supervisor, Virginia Marine Resources Commission, Hampton VA

January 2019 – May 2019
**Fisheries Management Specialist, Planner, Virginia Marine Resources Commission,
Hampton VA**

May 2015 – September 2018
Assistant Manager, Mott’s Channel Seafood, Wrightsville Beach, NC

Contributed Presentations

Ethan S. Simpson, Lee M. Paramore, Frederick S. Scharf, “Estimation of persistence within the North Carolina red drum juvenile abundance index: performance of fixed versus partial replacement survey design”; Oral presentation at American Fisheries Society Tidewater Chapter Annual Conference, Baltimore, Maryland, March - 2016.

Ethan S. Simpson, Lee M. Paramore, Frederick S. Scharf, “Evaluation of current Red Drum JAI survey design conducted in North Carolina: Fixed Station design vs. fixed with partial replacement”; Poster presentation at American Fisheries Society Tidewater Chapter Annual Conference, Emerald Isle, North Carolina, March – 2015.

Technical Skills

Field Techniques; Survey design including random, fixed, and partial replacement surveys. Multiple sampling techniques/commercial harvest methods of marine species, including seine net, gill net, and trawl operations. Acoustic tracking techniques of both a fixed station array and real-time tracking.

Lab Techniques; Removal, sectioning, and aging of otoliths from multiple marine species. Use of standard dissecting and light microscopes, as well as scanning electron microscopes. Proficient with multiple statistical analysis and database programs including excel, winbugs, access and R. Familiarity with GIS mapping and its use in survey execution. Well-versed in many fisheries-specific statistical methods. Adherent to and familiar with a wide array of lab safety protocols.

Other; Excellent communication skills and very comfortable working as a team. Supervisory skills, including scheduling and conflict mediation. Comfortable communicating with multiple fisheries user groups including recreational, commercial, governmental, and private sector groups. Proficient with the full suite of Microsoft office products. Mastery of fish cleaning/ butchering techniques.

Courses and Certifications

- ASMFC Introduction to Stock Assessment (2020)
- NOAA Shark Identification Workshop (2020)

- Communicate with the North Carolina commercial seafood industry and the general public

Marine Fisheries Biologist II, 9-03 to 12-07

North Carolina Division of Marine Fisheries Trip Ticket Data Analyst

- Responsible for analyzing the North Carolina Trip Ticket and commercial license data
- Compile reports and present data
- Serve on various committees representing North Carolina and the North Carolina Trip Ticket Program

Marine Fisheries Biologist I, 12-02 to 9-03

North Carolina Division of Marine Fisheries Hurricane Research Biologist

- Responsible for analyzing the North Carolina Trip Ticket and commercial license data and to determine the effects of hurricanes
- Compile reports and present data
- Serve on various committees representing North Carolina and the North Carolina Trip Ticket Program

Teaching Assistant, North Carolina State University, 12-01 to 5-01

Research Assistant, North Carolina State University, 8/00-12/01

Laboratory Technician, North Carolina State University, 5/00-8/00

Technical Reports, Presentations, Posters:

Technical Reports

Bianchi, A., Salmon, B., McInerney, S. and Taggart, M. (2019). *North Carolina Hurricane Florence Commercial Fishery Assistance Program*. North Carolina Division of Marine Fisheries, Morehead City, NC.

Bianchi, A. (2019). *Estimating Effort in the North Carolina Commercial Estuarine Gill-Net Fishery*. North Carolina Division of Marine Fisheries, Morehead City, NC.

Bianchi, A. (2019). *An Example of Cooperation to Correct Fisheries Data-The Pound Net Fishery*. North Carolina Division of Marine Fisheries, Morehead City, NC.

Gambill, M and Bianchi, A. (2019). *The North Carolina Striped Bass Commercial Fishery*. North Carolina Division of Marine Fisheries, Morehead City, NC.

Tong, A. and Bianchi, A. (2018). *An Economic Profile Analysis of the Commercial Fishing Industries of State Managed Species in North Carolina*. North Carolina Division of Marine Fisheries, Morehead City.

Bianchi, A. (2017). *The North Carolina Sandbar (Carcharhinus plumbeus) and Dusky (Carcharhinus obscurus) Commercial Fishery*. North Carolina Division of Marine Fisheries, Morehead City, NC.

Bianchi, A. (2013). *Validation of North Carolina Finfish and Shellfish Conversion Factors*. North Carolina Division of Marine Fisheries, Morehead City, NC.

Bianchi, A. (2012). *North Carolina/National Marine Fisheries Service Cooperative Regional Statistics Program*. North Carolina Division of Marine Fisheries, Morehead City, NC.

Bianchi, A. (2010). *Pilot Study of Conversion Factors Used by the North Carolina Trip Ticket Program*. North Carolina Division of Marine Fisheries, Morehead City, NC.

McInerney, S. and A. Bianchi. (2009). *An Economic Profile Analysis of the Commercial Fishing Industry in North Carolina Including Profiles for Interjurisdictionally-Managed Species*. North Carolina Division of Marine Fisheries, Morehead City, NC.

Burgess, C., A. Bianchi, J. Murauskas, and S. Crosson. (2007). *Impacts of Hurricanes on North Carolina Fisheries*. North Carolina Division of Marine Fisheries, Morehead City, NC.

Bianchi, A. (2006). *The North Carolina Gag Grouper (*Mycteroperca microlepis*) Commercial Fishery*. North Carolina Division of Marine Fisheries, Morehead City, NC.

Bianchi, A. (2005). *Changes in Landings, Ex-Vessel Value, Effort and Participation in North Carolina's Commercial Fisheries*. North Carolina Division of Marine Fisheries, Morehead City, NC.

Bianchi, A. (2004). *Interstate Fisheries Management Program Implementation for North Carolina: North Carolina Commercial Statistics System Enhancement, October 2001 – June 2004*. North Carolina Division of Marine Fisheries, Morehead City, NC.

Burgess, C. and A. Bianchi. (2004). *An Economic Profile Analysis of the Commercial Fishing Industry of North Carolina Including Profiles for State-Managed Species*. North Carolina Division of Marine Fisheries, Morehead City, NC.

Bianchi, A. (2003). *An Economic Profile Analysis of the Commercial Fishing Industry of North Carolina Including Profiles for the Coastal Fishing Counties*. North Carolina Division of Marine Fisheries, Morehead City, NC.

Presentations and Posters

2005 National AFS Meeting

Bianchi, A. 2005. Changes in Landings, Ex-Vessel Value, Effort and Participation in North Carolina's Commercial Fisheries. (Poster).

2005 Southern Division AFS Meeting

Bianchi, A. 2005. An Analysis of Using Sea Turtle Strandings to Develop Fisheries Management Strategies in Pamlico Sound, North Carolina. (Presentation).

Managing Our Nations Fisheries: Past, Present and Future

Bianchi, A. 2003. Short-term and Long-term Impacts of Hurricanes on North Carolina's Commercial Fisheries (Poster).

STEVEN T BROWN

Education

- 1982-Pres. Graduate course work at Scripps Institution of Oceanography, La Jolla, California and the University of South Florida, Marine Science, St. Petersburg, Florida in Fish Biology, Biological Statistics and Age and Growth of Fishes.
- 1978-1982 University of California, San Diego, La Jolla, California

Graduation: March 1982

Degree: Bachelors in Biology

Related courses: Marine Ecology, Sociobiology and Ethology (animal behavior), Invertebrate Zoology, Community Ecology, Field Ecology, Biology of fishes (graduate course), Computer Programming in Biology

Employment and Research Experience

- 1988-Pres. Associate Research Scientist, Florida Fish and Wildlife Conservation Commission, Florida Marine Research Institute, St. Petersburg, FL. Analyze fishery dependent information for temporal and spatial trends to advise management agencies; research impacts of fisheries on marine resources for publication in peer-reviewed journals; keep current on harvest patterns by assisting with editing of commercial landings data; supervise assigned personnel; design and conduct surveys (including field sampling) concerning recreational and commercial fishing activities and their impact on marine resources; assess the status of fishery stocks; coordinate work with other staff on creating and maintaining fisheries databases.

- 1986-1988 Fishery Reporting Specialist, National Marine Fisheries Service, Terminal Island, CA. Gather, compile, and analyze data; design and implement surveys; plan and implement computer programs, and prepare publications and reports concerning the Southwest Region fisheries and seafood trade.
- 1984-1986 Biological Technician, National Marine Fisheries Service, Tuna/Porpoise Program, San Diego, CA. Aboard U.S. commercial tuna purse-seine vessels, assess the effectiveness of present procedures required under the marine mammal regulations by (1) obtaining accurate mortality data under all conditions and establishing baseline life history parameters for all species involved, and (2) collect oceanographic, mechanical and biological data during sets, record observations pertaining to regulations, record conditions which may lead to improved porpoise rescue methods, keep an accurate record of fishing effort, and collect data on distribution and density of marine mammal species. Also, process and summarize data gathered and assist in preparation of materials for reports.
- 1982-1984 Marine Ecologist with the Vantuna Research Group, Occidental College, Los Angeles, CA. Designed and performed laboratory and field studies, with computer analysis, comparing behavioral observations of invertebrates. Participated in natural and artificial reef studies of invertebrates and bony fishes, assessing species variance and population densities near and around nuclear power plants and generating stations.
- 1979-1982 Research assistant with Scripps Institution of Oceanography, University of California, San Diego, La Jolla, CA. Participated in the collection and analysis of data on the schooling behavior of the scalloped hammerhead shark, *Sphyrna lewini*, in the Gulf of California. Collected stomach contents and reproductive samples; acquired behavioral data using an underwater video system; participated in day and night tracking of individuals with ultrasonic telemetric equipment and depth receiver; deployed identification tags for migrational observations; analyzed size and sex of individuals in the schools using stereophotography.

Selected Publications

Brown, S.T. 1999. Trends in the Commercial and Recreational Shark Fisheries in Florida, 1980-1992, with Implications for Management. North American Journal of Fisheries Management, 19:28-41.

Donley, P.J. and S.T. Brown. 1986, 1987. Fishery Market News Report. National Marine Fisheries Service, Southwest Region.

Klimley, A.P. and S.T. Brown. 1983. Stereophotography for the field biologist: Measurement of length and three-dimensional positions of free-swimming sharks. *Marine Biology*, 74(2):175-183.

Klimley, A.P. and S.T. Brown. 1982. A stereophotographic technique for the determination of lengths of free-swimming sharks. *CIBCASIO Transactions*, 6:110-137.

Patton, M.L., S.T. Brown, R.F. Harman and R.S. Grove. 1991. Effect of the anemone *Corynactis californica* on subtidal predation by sea stars in the southern California bight. *Bulletin of Marine Science*, 48(3): 623-634.

Lawrence Ronald Beerkircher

Education:

May 2000: M.S. Marine Biology/Coastal Zone Management, Nova Southeastern University, Davie Florida
December 1996: B.S. Fisheries and Aquaculture, University of Rhode Island, Kingston RI

Experience:

National Marine Fisheries Service, Miami, Florida (2010-Present). Supervisory Fisheries Biologist (ZP-IV) Chief, Fishery Sampling Branch. Responsible for the supervision of the Federal Port Agents in the southeast as well as supervising the staff of the Pelagic Observer program. As Trip Interview Program (TIP) Coordinator, responsible for database table updates and extractions.

National Marine Fisheries Service, Miami, Florida (1998-2010). Research Fisheries Biologist Various positions within the Pelagic Observer Program (ultimately Program Coordinator 2006-2010). Duties include coordination of observer deployments with commercial fishermen and observers, training of observers in pelagic fish species and sex identification, and sea safety training. Responsible for debriefing of observers and maintenance and quality control of observer database. Produce technical memoranda (program data summaries) for publication as required. Produce both white and grey literature as time permits.

South Florida Aquaculture, Florida City, Florida (Jan 1997- July 1998; July 1998 – Dec 2001 consultant) Commercial fish culture operation, duties include all aspects of fish systems maintenance, product harvest, and delivery. Develop/oversee water quality monitoring program, diagnose and treat disease, research new species and technology for future use at the facility. Identify and remove/control exotic vegetation on the property. Job site outdoors adjacent to the Everglades National Park.

Achievements, Memberships, and Training:

2020 NMFS Employee of the Year Award (Management Category), 2011 NMFS Employee of the Year Award (Supervisor Category), 2011 Department of Commerce Bronze Medal Award, 2004 Department of Commerce Bronze Medal Award, 2000 Nova Southeastern University Distinguished Student of the Year (Oceanography), 1996 URI L. Robert Crandall Scholarship, 1996 URI Durfee Scholarship. Member, Phi Kappa Phi Honor Society. CPR certification (American Red Cross), fishery observer certification (National Marine Fisheries Service), marine safety instructor certification (Alaska Marine Safety Education Association), associate fisheries scientist certification (American Fisheries Society). Attended sea turtle handling/gear removal trainings 7/26/01, 6/5/02, and 5/27/03.

Selected Publications:

Beerkircher, L., E. Cortes, and M. Shivji. 2003. A demographic analysis of the silky shark, (*Carcharhinus falciformis*): implications of gear selectivity. *Fishery Bulletin* 101:168-174.

Beerkircher, L., E. Cortes, and M. Shivji. 2008. Elasmobranch bycatch in the pelagic longline fishery off the southeastern U.S., 1992-1997. *in* Sharks of the Open Oceans. Ocean Wildlife Campaign.

Beerkircher, L.R. 2004. Characteristics of blue, *Prionace glauca*, and shortfin mako, *Isurus oxyrinchus*, shark bycatch observed on pelagic longlines in the northwest Atlantic, 1992-2003. *ICCAT SCRS/2004/106*.

Beerkircher, L. R. 2004. Length to weight conversions for wahoo, *Acanthocybium solandri*, in the northwest Atlantic. *ICCAT SCRS/167*.

Beerkircher, L.R., D.W. Lee, and G.F. Hinteregger. 2008. Roundscale spearfish *Tetrapturus georgii* (Lowe 1840); morphology, distribution, and relative abundance in the western North Atlantic. *Bull. Mar. Sci.* 82(1):155-170.

Beerkircher, L., C.A. Brown, and V. Restrepo. 2009. Pelagic observer program data summary, Gulf of Mexico bluefin tuna (*Thunnus thynnus*) spawning season 2007 and 2008; and analysis of observer coverage levels. *NOAA Technical Memorandum NMFS SEFSC-588*

Beerkircher, L, F. Arocha, A. Barse, E. Prince, V. Restrepo, J. Serafy, and M. Shivji. 2009. Effects of species misidentification on population assessment of overfished white marlin *Tetrapturus albidus* and roundscale spearfish *T. georgii*. *End. Sp. Res.* 9:81-90.

Beerkircher, L. R., and J.E. Serafy. 2011. Using head measurements to distinguish white marlin *Kajikia albida* from roundscale spearfish *Tetrapturus georgii* in the western North Atlantic. *Bull. Mar. Sci.* 87(1):147-153.

Burgess, G.H., L.R. Beerkircher, G.M. Cailliet, J.K. Carlson, E. Cortes, K.J. Goldman, R.D. Grubbs, J.A. Musick, M.K. Musyl, and C.A. Simpfendorfer. 2005. Is the collapse of shark populations in the Northwest Atlantic Ocean and Gulf of Mexico real? *Fisheries* 30(10):19-26.

Shivji, M, J. Magnussen, L. Beerkircher, G. Hinteregger, D. Lee, J. Serafy, and E. Prince. 2006. Validity of the roundscale spearfish: a morphological and molecular perspective. *Bull. Mar. Sci.* 79(3):483-491.

Cortes, E, C. A. Brown, and L.R. Beerkircher. 2007. Relative abundance of pelagic sharks in the western north Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea. *Gulf and Carib. Res.* 19(2):37-52.

Carlson, J. K., E. Cortes, J.A. Neer, C.T. McCandless, and L.R. Beerkircher. 2008. The status of the United States Population of Night Shark (*Carcharhinus signatus*). *Mar. Fish. Rev.* 70(1):1-13.

Cortes, E., F. Arocha, L. Beerkircher, F. Carvalho, A. Domingo, M. Huelgel, H. Holtzhausen, M. Santos, M. Ribera, and C. Simpfendorfer. 2009. Ecological risk assessment of pelagic sharks caught in Atlantic pelagic longline fisheries. *Aquat. Living Resour.* 22:1-10.

MacNeil, M.A., J.K. Carlson, and L.R. Beerkircher. 2009. Shark depredation rates in pelagic longline fisheries: a case study in the Northwest Atlantic. *ICES Jour. Mar. Sci.* 66:708-719.

Beerkircher, L.R. and D. Gloeckner. 2013. Fractions of Blueline Tilefish and Gray Triggerfish to Total Tilefishes and Triggerfishes from Sampling Data (TIP) 1983-2012. SEDAR 32 working paper.

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

**North Carolina biological database enhancements to prepare for
transmission of data to the ACCSP**

Submitted by:

Stephanie McInerny
North Carolina Division of Marine Fisheries
3441 Arendell Street; P.O. Box 769
Morehead City, NC 28557
stephanie.mcinerney@ncdenr.gov

Sections of the proposal identified to help with the ranking process are underlined with a summary on page 9. Page | 1
Revisions are highlighted in yellow.

Questions from Reviewers

- NC sends data to TIP yearly. Could the state include the TIP variables so that staff time could be refined and be able to pull data from ACCSP for TIP and ageing folks? Larry B. can be cited as a co- PI.

Added information about the availability of the data for TIP staff in future transmissions of biological data to ACCSP. The data transmission process will be outlined and completed through a maintenance proposal. The PI will work with ACCSP and SEFSC staff on this proposal and will ask for co-PIs during proposal development to ensure the data transmission process meets all of the needs of ACCSP and SEFSC.

- Budget is pretty detailed but wonder where costs come from if contractor is not chosen. Will you have gone through RFP process? Elaborate on how the budget is determined.

Added specific information on how the contractor will be hired and how the hourly rate was determined.

- Noted that data appear to be both fishery-dependent and independent – more for committee awareness – *Yes, single flat file.*

Added in more references to the fact that the data are both fishery-dependent and fishery-independent. Noted that the data are one large flat file. Data entry is the same for both data types. Fishery-independent data will benefit from the updates to the database and data processing enhancements. There is no way to only update the process for fishery-dependent data.

- Is there a flag for dependent or independent?

Added specific reference to the fact that the data can/will be flagged as dependent or independent based on the sampling program they came from to facilitate transmission of the fishery-dependent data in the future.

Applicant Name: North Carolina Division of Marine Fisheries

Project Title: North Carolina biological database enhancements to prepare for transmission of data to the ACCSP

Project Type: New

Principal Investigator: Stephanie McNerny
NCDMF Information Technology Section Chief

Requested Award Amount: \$153,600

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

Original Date Submitted: June 12, 2020

Objective

To enhance the biological database used by the North Carolina Division of Marine Fisheries (NCDMF) to ensure continued use and maintenance of the database on State authorized equipment and to prepare for future transmissions of fishery-dependent biological data to the Atlantic Coastal Cooperative Statistics Program (ACCSP) Data Warehouse.

Background/Need

The development of a comprehensive database to house field sampling collections for the NCDMF was initiated in May 1980 and incorporates data from the 1960s to present. Data are collected from both fishery-dependent and fishery-independent surveys and used in stock assessments and fishery management plans (FMPs) to manage species important to the state as well as those managed by regional and federal management commissions and councils.

Biological data collected are stored in the Biological Database (BDB) which consists of a hierarchical set of 128 byte ASCII records that detail various data collected by the sampling programs conducted by the division. The BDB currently consists of nine record types:

- Record Type 1 - Environmental Data
- Record Type 8 - Fishing Gear Data
- Record Type H - Free Format Header Data
- Record Type 2 - Replicate Data
- Record Type R - Free Format Replicate Data
- Record Type 3 - Species Data
- Record Type 4 - Individual Fish Data
- Record Type 5 - Individual Fish Age Data
- Record Type 9 - Individual Fish Tag Recapture Data

For each biological program, data are typically entered onto biological program data sheets according to set protocols contained in each program's written standard operating procedures (i.e., program documentation). While the data field names on the BDB record are rigorously controlled, the type of data collected in a biological program for a given field may vary dependent upon what information the respective biologist is capturing. Data elements that are required and standard across all programs include the following: collection id (sequence number), program id, date, location, gear, replicate id, species id, species status, and the number of individuals. Specific programs may also record in addition several other data elements such as station number, duration of sample, sediment type, depth, air temperature, dissolved oxygen, pH, weather, current speed, additional data on individuals collected (weight, age, tag number, annulus measurements), etc. The BDB structure allows each program to capture the data elements needed in a flexible and organized manner with like codes and other standards, but no single program captures all the data defined in the BDB record types. Consequently, biological program data elements vary from program to program. This leads to many variations in the biological data or "coding" sheet. At this moment, there are over 125 different coding sheets defined; but, this number could change at any time dependent on new or changing program documentation requirements.

Currently, there are data from over 120 programs within the BDB and 18 million records. This includes both fishery-dependent and fishery-independent data types. These data are important to the management of species in North Carolina as well as regional and federal species. The primary method for data entry into the BDB can only run on a Windows XP machine; therefore, it has been cumbersome to maintain the BDB as built since computer operating systems used by the state upgraded from Windows XP. The need to enhance the BDB and its data entry interfaces has been increasing over time but there is an immediate need to address database structure, data entry tools, and create a plan for improved user

extraction tools as North Carolina State security guidelines currently prohibit PCs not using Windows 10 or newer to be on the state network. This adds an additional level of difficulty in maintaining the BDB and a strong reason for upgrading the database and input/output (I/O) interfaces. In addition, data entry and regular maintenance on the BDB cannot be done via remote access. With the ongoing COVID-19 pandemic, teleworking has been required and is likely to be maintained in some form moving forward.

The NCDMF has been an active participant in transferring selected BDB program data to other regional databases. Two fishery-independent surveys are provided to the Southeast Assessment Monitoring Program (SEAMAP) which is a cooperative program to facilitate the management, and dissemination of fishery-independent data from the waters of the southeastern United States. North Carolina fishery-dependent biological data from the snapper-grouper fishery is provided to the NOAA Fisheries Southeast Fisheries Science Center's Trip Information Program (TIP) which is a major component of the ACCSP. With the upgrades outlined in this proposal, NCDMF will be prepared for future transmissions of data to the ACCSP Data Warehouse to meet the goals and standards of data sharing initiatives between North Carolina and ACCSP. Other than snapper-grouper data, biological data collected by North Carolina are not currently available in the Data Warehouse.

Approach

Before development begins, NCDMF staff will work with North Carolina Department of Information Technology (NCDIT) staff on a requirements document to detail specific needs and expectations of the corresponding I/O interfaces and updated database structure, if needed. **The current structure of the biological database is one large flat file containing both fishery-dependent and fishery-independent data. The data will be flagged as dependent or independent based on the biological sampling program they were collected from to differentiate between these data types.**

A new interface will be built to facilitate data entry as well as data corrections that can be used on Windows 10 PCs. With this new interface, continued maintenance of the BDB will be easier as standard upgrades to operating systems occur over time. NCDMF staff will work with NCDIT staff to complete this project. Several NCDIT staff are housed at the NCDMF Headquarters office in Morehead City, NC and will be overseeing, assisting, and facilitating this project. A contractor will be hired to complete the interface development and, if needed, database setup/migration.

Upgrades to the database and its I/O processes will prepare North Carolina for transfers of selected fishery-dependent program data from the division to the ACCSP in the future. **These future transfers could also replace the need for yearly transfers of biological data from North Carolina to the TIP program by providing necessary TIP variables within the ACCSP data transmission. Those data could be retrieved by the SEFSC from the ACCSP Data Warehouse, as needed. Once the ACCSP transfer process is built and refined, the data could be transmitted on a monthly basis which will significantly improve timeliness of NC data to TIP compared to the annual transfer that happens currently.**

Results and Benefits

Successful fulfillment of this project will provide:

- Enhanced data entry and verification functionality for North Carolina biological program data
- Remote access to the BDB by staff that maintain the database, as well as biologists
- The ability for the BDB to meet State security requirements
- Data that can be formatted to facilitate future transmissions of fishery-dependent biological data from North Carolina to the ACCSP Data Warehouse which will be accessible by regional partners including SEFSC TIP staff, as needed

Geographic Location

The NCDMF Headquarters are located in Morehead City, North Carolina. This project may be performed remotely and does not require the position to be located in Morehead City. Other NCDIT contractors working for the division are located in Raleigh, North Carolina.

Data Delivery Plan

Documentation of the enhanced data entry and editing process as well as any database schema changes will be provided to ACCSP as part of the annual report. Biological data will not be transmitted to ACCSP as part of this project but will be prepared for the future transmission of data. The details of the data transmission process will be fleshed out in a subsequent maintenance proposal submitted after successful completion of this project. The PI work with ACCSP and SEFSC staff to prepare the maintenance proposal.

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

Task	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
Hire Contractor	X	X	X									
Develop requirements document	X	X	X									
Database will be evaluated to determine if data should be migrated to another platform				X	X							
Interfaces for data entry and verification will be built and tested. Database migration will occur, if needed					X	X	X	X	X	X	X	X
Finalize documentation											X	X

The contractor is expected to work 40 hours a week on this project. Report writing will follow the requirements of two semi-annual status reports and a final report due at the end of the grant award.

Project Accomplishments Measurement

Projects	Accomplishments
Create requirements document	<ul style="list-style-type: none"> Document is completed and describes details needed for Contractor to start database build

Create interface for data entry	<ul style="list-style-type: none"> • Process completed and fully documented • Data are able to be entered into biological database
Create interface for data verification/editing	<ul style="list-style-type: none"> • Process completed and fully documented • QA/QC tests can be run on data • Data are able to be viewed and edited
Finalize documentation	<ul style="list-style-type: none"> • Documentation reflects new enhanced process and data structure (if needed)

Project Personnel

Stephanie McInerny—Section Chief, NCDMF IT Section (NCDIT)
 Katy West—Northern District Manager, Biological User Group (BUG) Chair, NCDMF
 Tina Moore—Southern District Manager, NCDMF
 Chris Capoccia—Applications Systems Analyst I, NCDMF IT Section (NCDIT)
 George Joyner—Biological Database Administrator, NCDMF IT Section (NCDIT)
 Phyllis Howard—Biological Database Clerk, NCDMF IT Section (NCDIT)
 Leslie Hester— Biological Database Clerk, NCDMF IT Section (NCDIT)

Funding Transition Plan

This project should be completed within the proposed 1-year grant period. NCDIT and NCDMF staff can maintain the systems developed from this grant; therefore, subsequent years of funding are not needed.

Budget Narrative

The cost summary table below shows an explanation for each budget item for a one-year period. NCDIT will not charge an indirect fee for the Contractor.

NCDIT has convenience contracts in place that can be used to fill the budgeted position in this proposal; therefore, if money is awarded, a job posting will be sent to the temporary agencies used by NCDIT to solicit for applicants. Qualified individuals will be interviewed to select the best candidate for the position. A formal RFP will not be needed to hire a contractor for this project.

The cost for the developer in the summary below is based on the standard rate for a developer that specializes in Microsoft Dynamics CRM which is a customer relationship management software package that NCDIT has been using to replace other legacy systems within the state. If CRM is not the chosen solution for this project, the cost for the developer may be less.

Cost Summary

Category	Expense	Units	Cost	ACCSP Request	State In-Kind	Explanation
Personnel	Contractor	1	\$150,000	\$150,000		One Analyst @ \$100.00/hr for 1,500 hrs (9 months)
	IT Section Chief	1			\$26,250	\$8,750/month for 3 months
	NCDIT Application Systems Analyst	1			\$22,800	\$5,700/month for 4 months
	NCDMF District Manager	2			\$24,000	Average salary of \$6,000/month for 4 months (2 months each)
	NCDMF BDB Administrator	1			\$20,772	\$5,193/month for 4 months
	NCDMF BDB clerk	2			\$11,364	\$2,841/month for 4 months (2 months each)
Subtotal				\$150,000	<u>\$105,186</u>	
Fringe	Retirement, Social Security, Health Insurance				\$41,125	Fringe=29.09% of salary (\$30,599) plus \$6,647/year for health insurance (1 month insurance = \$554*19 months combined work=\$10,526)
Indirect						No indirect needed
Subtotal				\$0	<u>\$41,125</u>	
Travel				\$1,000		Travel for contractor between work location and Morehead City HQ office for in-person meetings, as needed
Subtotal				\$1,000	\$0	
Supplies	Computer	1	\$2,500	\$2,500		
	External Hard Drive	1	\$100	\$100		
Subtotal				\$2,600	\$0	
Column Totals				\$153,600	<u>\$146,311</u>	Total project cost = \$299,911
Total Request						
Percent				51%	49%	Percentage calculated from total cost

Summary of Proposal for Ranking Purposes

Proposal Type: *New*

Program Priority

Catch and Effort: 0%

Biological Sampling: 100%

The North Carolina Biological Database (BDB) was developed in 1980 to house field sampling data from fishery-dependent and fishery-independent sampling programs. The database contains data from the 1960s to present. There are data from over 120 programs within the BDB and 18 million records. These data are used in stock assessments and fishery management plans to manage species important to the North Carolina as well as those managed by regional and federal management commissions and councils. (see page 4)

Bycatch/Species Interactions: 0%

Social and Economic: 0%

Metadata:

The NCDMF BDB has extensive documentation for each of the sampling programs that are stored in the database. New documentation on the enhanced database will include data mapping tables that provide a definition of each variable with respect to the old database to ensure data migration is successful and accurate. Any new stored procedures created during this project will include documentation on primary function, data tables being accessed, and corresponding variables within the procedure's SQL code. Documentation will be provided as part of the grant completion report. (see pages 4-6)

Project Quality Factors

Multi-Partner/Regional impact including broad applications:

Although this project only covers data for North Carolina, future transmissions of biological data to the ACCSP will benefit other partners as the data will be more readily available for data requests and stock assessments. Many species within North Carolina are managed regionally. Regional management agencies such as the Atlantic States Marine Fisheries Commission (ASMFC) and Mid-Atlantic Fishery Management Council (MAFMC) would benefit from having more access to these fishery-dependent data. (see pages 4-5)

Contains funding transition plan/Defined end-point:

The goals defined in this project should be completed within the grant cycle. (see page 7)

In-kind contribution:

49% (see cost table on page 8)

Improvement in data quality/quantity/timeliness:

The project identified in this proposal will greatly improve data quality and timeliness by providing a more modernized format for the data with enhanced data entry/verification screens and work flows that will prepare North Carolina for transmitting data to the Data Warehouse. (see page 5)

Potential secondary module as a by-product:

None

Impact on stock assessment:

Although this project only covers data for North Carolina, future transmissions of biological data to the ACCSP will benefit other partners as the data will be more readily available for data requests and stock assessments. Many species within North Carolina are managed regionally. Regional management agencies such as the Atlantic States Marine Fisheries Commission (ASMFC) and Mid-Atlantic Fishery Management Council (MAFMC) would benefit from having more access to these fishery-dependent data. (see page 4)

Stephanie McInerny

North Carolina Division of Marine Fisheries/North Carolina Department of Information Technology
3441 Arendell Street / P.O. Box 769
Morehead City, NC 28557
(252) 808-8099
stephanie.mcinerny@ncdenr.gov

EXPERIENCE

Information Technology Section Chief (Applications Systems Manager I) March 2020–Current **North Carolina Department of Information Technology (NCDIT), Morehead City, NC**

Supervisory and Management

- Manage 15 technical staff members of IT Section at NCDMF through the North Carolina Department of Information Technology.
- Directly supervise seven employees to include assigning and reviewing tasks, coaching, mentoring, performance reviews, encouraging enhancement of skills, time management, and hiring.
- Manage six different budgets including budgets that fund NCDMF biological staff
- Currently, overseeing several IT projects occurring simultaneously requiring daily multi-tasking, prioritization of staff and resources, planning, meetings, and organization.
- Oversee and manage applications development, biological database, and GIS staff and activities

License and Statistics Section Chief (Environmental Program Manager I) 2016–2020 **North Carolina Division of Marine Fisheries (NCDMF), Morehead City, NC**

Supervisory and Management

- Manage around 60 staff members of the License and Statistics Section including office and field staff located in five different offices throughout NC. Had roles in time management, coaching, mentoring, hiring, firing, disciplinary action, performance reviews, encouragement of skills, and training.
- Directly supervise seven employees to include assigning and reviewing tasks, coaching, mentoring, performance reviews, encouraging enhancement of skills, time management, and hiring.
- Manage 20 different budgets including budgets that fund Information Technology (IT) staff and projects. Monies consist of appropriations, receipts, and federal grants totaling over \$3 million.
- Responsible for presenting at quarterly Marine Fisheries Commission meetings on license, commercial, and recreational data issues requiring effective communication of complex statistics and data collection programs.
- Currently, overseeing several IT projects occurring simultaneously requiring daily multi-tasking, prioritization of staff and resources, planning, meetings, and organization. Current projects using either Waterfall or Agile application development are listed below:

Agile development projects:

- **NCDMF Fisheries Information Network (FIN) replacement project using Agile SCRUM**
- **NCDMF FIN-GIS for shellfish leases and pound nets** (2 similar projects)

Waterfall development projects:

- **NCDMF-ACCSP upload portal interface upgrade and improvement project**
- **NCDMF Coastal Angling Program Catch U Later project** (i.e., mobile discard reporting for recreational fishermen focused on flounder)
- **NCDMF Trip Ticket Program VESL project** (web software for seafood dealer reporting)

Data, Statistics, and Committees

- SQL Server Database Schema Design – actively review and comment on schema changes to the FIN Database proposed by developers to improve and simplify data capture and in particular, data analysis by analysts at DMF
- Perform daily data queries of FIN using SAS and SQL (through SQL Management Studio)
- Frequently querying FIN for data related to section programs, license sales, and commercial trip ticket data using SAS, SQL, R, and Crystal Reports
- Serve on the DMF Management Review Team (MRT)
- Serve on Atlantic Coastal Cooperative Statistics Program (ACCSP) Operations Committee
- Serve on ACCSP Commercial Technical committee and ACCSP Information Systems committee
- Serve as Chair of the FIN Software Change Control Board and member of IT Steering Committee.
- Serve on Coastal Recreational Fishing License (CRFL) Joint Review Team

- Serve on Rules Advisory Team (RAT) as well as several RAT subcommittees (Permit NOV subcommittee, Periodic Review Subcommittee, Shellfish Workgroup)

Trip Ticket Data Analyst (Marine Fisheries Biologist II)

2008–2016

North Carolina Division of Marine Fisheries (NCDMF), Morehead City, NC

IT Project Management and Documentation

- Created, led, and managed multiple IT software development projects using Waterfall. Was responsible for drafting scopes of work, database schema review, drafting data specification documents, requirements gathering, review of architectural solutions suggested by DMF IT, communication between IT and business users, prioritizing projects and budget, coordinating resources, and testing. Projects are listed below:
 - **Trip Ticket Data Upload Interface**
 - **ACCSP Automated Update**
 - **Simplification of E-Dealer data importing**
 - **Electronic Import of Quota Monitoring Data**
 - **ACCSP Upload Interface** - Principal Investigator
- Acted as Business Architect and Product Owner for NCDMF during Pega FIN replacement project
- Served as Chair of the FIN Software Change Control Board and member of IT Steering Committee.
- Wrote and/or compiled standard operating procedures and policies for the NCDMF eel monitoring program, NCDMF Biological Database extraction and analysis, and ACCSP data transmission process as well as FIN data entry procedures for Marine Patrol violation data and several Habitat and Enhancement section permits.

Data Analysis, Statistics, and Committees

- Was the primary data analyst for the NCDMF Trip Ticket Program. Performed daily commercial fishery data queries and statistical analyses using programming languages such as SAS, SQL, Microsoft Office Products (e.g., Excel and Access), and R (statistical analysis software) including weight-length regressions, nonlinear growth models, length and age compositions, CV, natural mortality, and landings trends.
- Analyzed data from the DMF Biological Database, when needed and trained staff on extraction and analysis.
- Participated as a member of plan development teams that facilitate fishery management plans for species important to North Carolina.
- Provided commercial data, analyzed life history data, wrote technical reports, and give presentations at data workshops for Southeast Data Assessment and Review (SEDAR) stock assessments for NOAA Fisheries and the Atlantic States Marine Fisheries Commission (ASMFC) as part of the life history and commercial workgroups.
- Accessed, verified, and performed quality control on ACCSP, NOAA, and NCDMF fisheries data for NC using SAS, SQL, Oracle SQL Developer, Microsoft SQL Management Studio, Crystal Reports, and R.
- Involved in training, coaching, and mentoring new and existing employees on procedures and policies of the Trip Ticket Program and SAS programming as well as counseling and mediating conflicts between staff to maintain a team environment.
- Served on the NCDMF Biological Review Team (BRT), BRT Technical Committee, BRT Biological User Group, BRT Life History Subcommittee, and BRT Editorial Subcommittee.
- Served on CRFL Joint Review Team
- Served on ACCSP Committees including Commercial Technical, Information Systems, Outreach, and Conversion Factor Subcommittee.
- Involved in interviewing over 30 applicants for a variety of NCDMF positions as well as evaluating, recruiting, selecting candidates, and hiring for positions within License and Statistics Section, Fisheries Management Section, and Protected Resources Section.

EDUCATION

July 2007	University of North Carolina Wilmington	Wilmington, NC
	M.S., Marine Biology with Applied Statistics Certificate	
Fall 2006	North Carolina State University	Raleigh, NC
	Post Baccalaureate Studies – Quantitative Fisheries Management	
December 2002	East Carolina University	Greenville, NC
	B.S., Biology/Marine Biology	



RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

3 Fort Wetherill Road, Jamestown, RI 02835

August 7, 2020

Julie Defilippi Simpson
Atlantic Coastal Cooperative Statistics Program
1050 N. Highland, Suite 200A-N
Arlington, VA 22201

Dear Mrs. Simpson,

The Commercial Fisheries Research Foundation (CFRF), the Rhode Island Department of Environmental Management (RI DEM), and the Martha's Vineyard Fishermen's Preservation Trust (MVFPT) have reviewed all questions and recommendations provided by the ACCSP Operations and Advisory Committees for our proposal titled "Implementing the Research Fleet approach to Improve Fishery-Dependent Data Collection for Channeled Whelk (*Busycotypus canaliculatus*) and Knobbed Whelk (*Busycon carica*) in Southern New England." The proposal has been revised accordingly and we have also briefly responded to each question and recommendation below:

1. Whelk C&E already collected in RI via logbook so emphasize the difference between proposal and what is already being collected.

We added an explanation of data collected through logbooks to pages 5 and 6 of the proposal. Currently both Rhode Island and Massachusetts only receive broad, trip level data from logbooks such as total pounds of whelk landed, number of traps hauled, number of traps in the water, and soak time. There is no biological data provided in those trip reports, such as size composition of catch, amount or size composition of discards, and no data collected on a per pot level.

2. Are fishermen on the steering committee? *Both fishermen and scientists. Concept of research fleet is to involved fishermen in the development. The Nature Conservancy is also committed to steering committee.*

Further explanation and description of steering committee members was added to pages 9 and 10 of the proposal. The CFRF board of directors is comprised of fishing industry members and at least one involved in or familiar with the whelk fishery will be offered a spot on the steering committee. Further, once the Research Fleet is established, Fleet Members will be given the opportunity to participate on the Steering Committee if desired.

3. Pg. 5 - I thought MADMF had 100% reporting for all harvester fisheries? Why would there be difficulties obtaining fishery dependent data?

Further explanation about the various fishery dependent data sources in Rhode Island and Massachusetts was added to pages 5 and 6 of the proposal. Both states collect fishery dependent data through trip reports, however this data alone does not allow for well-informed reference points for the stocks. Information on discards and size composition of the catch provide more informed data of which can be

used in more sophisticated assessments, as well as understanding the effectiveness of management actions through the appearance or disappearance of size classes in the data. Massachusetts does collect additional, pot-level size composition and discard, fishery dependent data through observed trips. The difficulties mentioned in the proposal were in reference to the logistical difficulty of sending out MA DMF staff to the outer cape and islands of Martha's Vineyard and Nantucket to observe trips. It is often cost prohibitive to send staff as it requires ferry rides and overnight lodging to visit these areas. The effort of the research fleet also addresses a geographical area where commercial effort is substantial with little data coverage by MADMF for the aforementioned reasons. Further, as mentioned in the proposal, no Rhode Island program currently addresses this data gap. The proposed project would greatly expand on the fine resolution, pot-level, data provided by the MA DMF fishery dependent observed trips by utilizing the time on the water of whelk fishermen to collect a similar suite of data in both Rhode Island and Massachusetts.

4. Pg. 7 - I thought these already exist from 100% harvester reporting in RI and MA? Are you trying to create a new data path to ACCSP? If so it seems like a stretch to do this for one or two species? I would prefer you find a way to transmit the data through already built channels. Cost effective? Do these states not require whelk reporting on either harvester or dealer level?

Please see responses to comments 1 and 3 for differences between trip reporting and finer scale fishery dependent data.

The proposed project would mirror existing data collection by the state of Massachusetts and expand it to Rhode Island to provide data directly into each state's assessment efforts. The data would be submitted directly through existing data collection channels to the states as well as to ACCSP. Further explanation added to page 6 and page 8 of the proposal to emphasize this.

5. Pg. 7 - Is ACCSP being asked to pay for a species-specific application?

No, ACCSP is not being asked to pay for a species-specific application. The data collection application, On Deck Data, has already been made and is currently being used to collect fishery dependent data from the black sea bass, Jonah crab, and American lobster fisheries and to collect oceanographic data. The application is also capable of collecting data from the quahog fishery. The work for the proposed project would involve minor edits to this existing application to allow for collection of specific fishery dependent whelk data. Further explanation of the On Deck Data application was added to pages 7, 8, and 11.

We appreciate your consideration of this proposal. Please do not hesitate to contact us if the Operations and Advisory Committee have any further questions.

Sincerely,



M. Conor McManus, PhD
Deputy Chief, RI DEM



N. David Bethoney, PhD
Executive Director, CFRF



Shelley Edmundson, PhD
Executive Director, MVFPT

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

**Implementing the Research Fleet approach to Improve Fishery-Dependent Data Collection for
Channeled Whelk (*Busycotypus canaliculatus*) and Knobbed Whelk (*Busycon carica*) in
Southern New England**

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Proposal components that address the ranking criteria are underlined
Changes from the original proposal are highlighted in yellow

Applicant Name: Rhode Island Department of Environmental Management Division of Marine Fisheries, the Commercial Fisheries Research Foundation, and the Martha's Vineyard Fishermen's Preservation Trust

Project Title: Implementing the Research Fleet approach to Improve Fishery-Dependent Data Collection for Channeled Whelk (*Busycotypus canaliculatus*) and Knobbed Whelk (*Busycon carica*) in Southern New England

Project Type: New

Requested Award Amount: \$115,149

Requested Award Period: August 1, 2021 – July 31, 2022

Principal Investigators: M. Conor McManus, PhD, Deputy Chief, Division of Marine Fisheries, Rhode Island Department of Environmental Management

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Date Originally Submitted: June 15, 2020

Date Resubmitted: August 17, 2020

Objective:

The southern New England whelk fishery includes landings of two species, the channeled whelk (*Busycotypus canaliculatus*) and knobbed whelk (*Busycon carica*), from nearshore state waters (Angell 2019, Nelson 2018). The increase in fishery value and decline in landings has increased need for state management to ensure the sustainability of the fishery; however, fishery-dependent data to characterize the whelk fishery is lacking in both states. The Rhode Island Department of Environmental Management (RI DEM), Commercial Fisheries Research Foundation (CFRF), and Martha's Vineyard Fishermen's Preservation Trust (MVFPT) with support from the Massachusetts Division of Marine Fisheries (MA DMF) are proposing to collect fishery-dependent data on both channeled and knobbed whelk in Rhode Island and Massachusetts through a fishing vessel research fleet approach.

The objective of the project is to develop and implement a cost-effective method to collect critically needed fishery-dependent, biological and catch and effort, data from the whelk fishery in southern New England. The proposed project will last one year with at-sea sampling conducted for a total of eight months. Fishery-dependent data will be collected from the nearshore state fisheries for whelk in Narragansett Bay, Rhode Island and the south coast of Massachusetts, specifically in and around Martha's Vineyard and Nantucket Sound (Figure 1). Proposal components that address the ranking criteria are underlined
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The proposed project will focus on providing fishery-dependent data directly for inclusion in each respective state's assessment and management process for the whelk fishery.

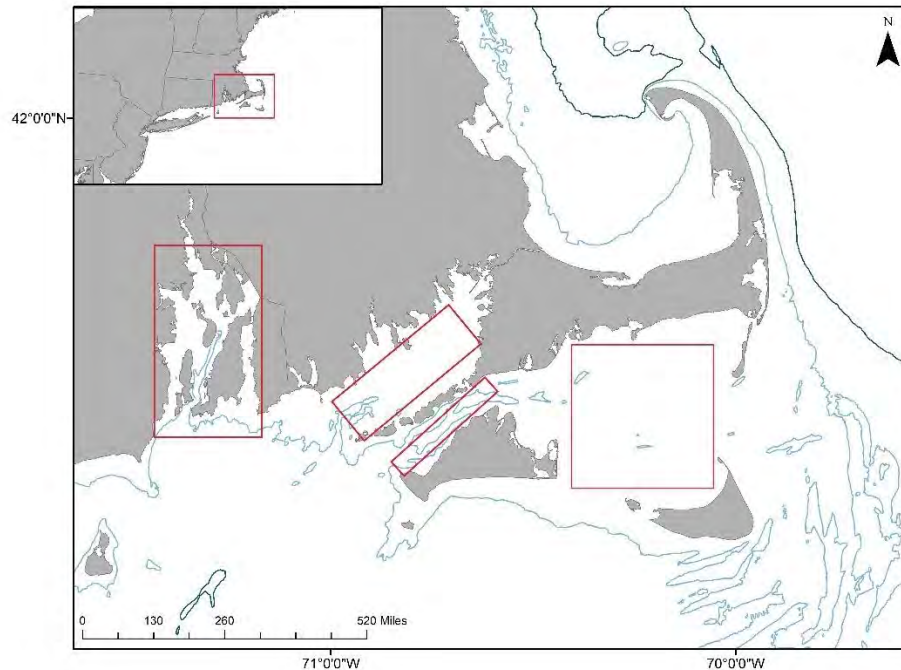


Figure 1. Map of the areas accounting for the majority of landings in the whelk fishery across Rhode Island (RI) and Massachusetts (MA). From East to West, the areas highlighted in red are Nantucket Sound (MA), Vineyard Sound (MA), Buzzards Bay (MA), and Narragansett Bay (RI). 20- and 50-meter bathymetry lines are displayed for reference.

Specifically, the proposed project will establish a fishing vessel-based Research Fleet in the southern New England whelk fishery. The Research Fleet will focus on fishermen collecting fishery-dependent biological, catch, and effort data from their commercial whelk trips. The goal of the Research Fleet will be to expand the fishery-dependent data coverage in respective state management areas in Rhode Island and Massachusetts, focused primarily in data poor areas, to inform the management of the fishery. The CFRF, and project collaborators, have proven the Research Fleet approach a success in collecting fishery-dependent data from a variety of other fisheries in southern New England such as; the American lobster, Jonah crab, black sea bass, and quahog fisheries (Gawarkiewicz and Mercer 2019). The principles of collaborative research and data collection, learned from previous Research Fleet projects, will be applied an expanded upon in the proposed project.

In summary the general goals of the proposed project are:

1. Collect and communicate critically needed whelk data (catch, effort, and biological) in a cost-effective way using modern electronic technology and fishermen's time on the water;

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2. Contribute to the improvement of whelk science and fisheries management in southern New England;
3. Develop a model approach for fishery-dependent data collection that involves the commercial whelk industry through collaborative research.

Specific objectives of the project include:

- Organize, train, and support a commercial fishing vessel research fleet for whelk and develop a tablet application (app) for at-sea data collection;
- Collect fishery-dependent data from commercial whelk vessels throughout Rhode Island and Massachusetts region to characterize the catch, effort, and spatial and temporal trends of the fishery;
- Distribute and apply fishermen collected data to the management and assessment of whelk in Rhode Island and Massachusetts;
- Demonstrate a model for fishery-dependent data collection, management, analysis, and utilization that can be duplicated in a cost-effective way in other regions and in other fisheries;
- Communicate to a broad audience the benefits and value inherent in this type of collaborative data collection program.

Need:

Substantial uncertainties in the assessment and management of whelk fisheries coastwide, in particular in the southern New England fisheries of Massachusetts and Rhode Island, have arisen as a result of large spatial gaps in fishery-dependent data. Lack of fishery-dependent data have hindered efforts to establish reference points and assess the status of stocks through stock assessments (Angell 2019, Nelson et al 2018, ACCSP 2019). As a result, there is growing concern from managers and industry members alike about the sustainability of the whelk fishery into the future.

The whelk fishery represents an opportunity to diversify landings for fishing businesses. Despite the fishery being open throughout the entirety of the year in Rhode Island and most of the year in Massachusetts (closed December 15 – April 14), there are very few vessels which only target whelk (TNC 2018). Most vessels targeting whelk only do so for a portion of the year when catch is high and will switch between a variety of other fisheries. However, due to the growth in the international market and substantial increase in ex-vessel price over the last decade, the income for vessels derived from whelk landings is significant (TNC 2018). It is suspected the increased reliance on, and importance of, the whelk fishery is directly correlated to declines in other fisheries such as the southern New England inshore lobster fishery and represent shifted fishing effort. Following peaks in landings between 2009 and 2012, declines in landings in Rhode Island and Massachusetts have occurred since 2013. Despite this, the value of the fishery peaked at over \$2 million in Rhode Island in 2018 and been maintained annually around \$5

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million in Massachusetts due to increasing ex-vessel prices (Angell 2019, Nelson et al 2018). After the most recent assessment, there were 106 fishing vessels reporting landings of whelk in the state of Rhode Island in 2018, although up from 2017, this represents over a 60% decrease in total vessels in the fishery compared to the peak in 2012 (Angell 2019). Active vessels in the Massachusetts fishery have remained relatively stable over this time period with about 140 permitted vessels, and about 80 vessels reporting landings annually during the same time frame (Nelson et al 2018). Even though the whelk fishery is dispersed on a broad scale between Rhode Island and Massachusetts, and whelk populations are likely segregated on a fine scale, the interstate markets for whelk are highly interconnected. Massachusetts dealers often purchase whelk from the Rhode Island fishery.

Despite the decline in landings, the whelk fishery still represents a large and viable opportunity for fishermen seeking to diversify their catch due to the high price. However, the combination of landings declines and anecdotal reports of localized depletion with increased or stable fishery value raises questions over the fishery's long-term sustainability.

Globally, whelk and conch fisheries are notoriously difficult to manage and are prone to overfishing and quick depletion due to their slow maturation, slow growth rate, and localized larval distribution. Coupled with the largely sedentary lifestyles, these life history parameters can often result in quick depletion of localized populations after years of high fishing pressure (Nelson et al 2018). Anecdotally, there have already been areas identified by fishermen in Massachusetts, specifically Buzzards Bay and Nantucket Sound, depleted of whelk (Nelson et al 2018). Although it has become evident from trends that the whelk fishery is overfished and overfishing is occurring in Massachusetts, and more recently in Rhode Island, there is still a question as to how widespread this may be occurring (Angell 2019, Nelson et al 2018). This is because of the difficulty of obtaining fishery-dependent data from the whelk fishery.

In both Rhode Island and Massachusetts, the primary index of abundance used in the stock assessment are the state trawl surveys. Further, both states also receive fishery-dependent data through mandatory trip reports submitted on a monthly basis from harvesters. Similar data is collected in each state through the trip reports which include total whelk landed per trip, traps hauled per trip, total traps in the water, and soak time of traps in the water. Although useful for tracking trends in the fishery, this broad level of fishery-dependent data has been inadequate to construct comprehensive stock assessments, particularly in Rhode Island. In addition, the mandatory trip reports do not provide any biological data from the whelk catch nor does it provide any data on the species composition of the catch or the sublegal discards within the fishery. Rhode Island conducted cooperative fishery-dependent sampling with observed trips opportunistically in the early 2010s, but currently does not have a dedicated fishery-dependent data collection program. In a similar fashion, Massachusetts opportunistically collects cooperative fishery-dependent data from commercial whelk vessels through observed trips. Observed MA DMF trips are the only source of fine scale, pot-level, data on the whelk fishery between the two states and provide specific data on species composition of the catch as well as the sizes of all landed and discarded sublegal whelk. Proposal components that address the ranking criteria are underlined
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Location of the string of traps is recorded as well as the shell-width of all whelks within specific traps. Not all traps within a string are sampled due to the high number of whelks within individual traps. However, this sampling occurs on a small fraction of commercial whelk trips; between 2003 and 2017, a total of 38 whelk trips were observed by the MA DMF survey with only 2 trips in 2013, 1 in 2015, and 3 in 2016 (Nelson et al 2018). Further, appropriate spatial representation of the fishery-dependent data collection program by MA DMF can prove to be challenging due to the distribution of the whelk fishery across the south coast of Massachusetts, Cape Cod, Martha's Vineyard, and Nantucket. As a result, there are areas of the whelk fishery in Massachusetts that are logistically too difficult to observe trips consistently from the outer Cape Cod, Martha's Vineyard, and Nantucket. In contrast, landings from Nantucket Sound make up the vast majority of statewide landings and are key fishing grounds to whelk vessels from the outer Cape Cod, Martha's Vineyard, and Nantucket, leaving a large portion of the fishing fleet and landings uncharacterized by the state survey. This problem is further exacerbated by the highly localized, and likely segregated, populations of whelk on scales potentially as fine as within Narragansett Bay. The proposed project would seek to greatly expand upon the fishery-dependent data available in Massachusetts and provide a new source of fishery-dependent data in Rhode Island. The project would utilize the time on the water of whelk fishermen, including those from Martha's Vineyard, to collect a similar suite of fishery dependent biological, catch, and discard data as the MA DMF survey but on a continuous, annual, time frame.

For these reasons, the channeled and knobbed whelk are listed by the ACCSP biological priority matrix as a top priority for expanded biological sampling (ACCSP 2019). In particular, the listing is a result of the large uncertainty if the whelk fisheries are overfished and if overfishing is occurring. Further, there have recently been significant changes in landings and management schemes in the whelk fishery coastwide, in particular in Rhode Island and Massachusetts, which when coupled with the low resilience of the fishery due to the life history parameters of the species, is a cause for concern (ACCSP 2019). Compared to other commercially important species supporting fisheries of a similar magnitude, little research has been conducted on even the basic biology and ecology for the two species (Edmundson 2016). Within the current literature available for both whelk species, there is discrepancy between basic biological parameters such as age at maturity, growth rates, and maximum age (Peemoeller 2013). It is currently unclear if these discrepancies are a result of fine scale population differences between various subpopulations or other factors.

The proposed project aims to address these uncertainties in the assessment and management. Through the implementation of a robust fishery-dependent data collection program, the proposed project will aim to reduce the fishery-dependent data gaps resulting in the data-poor listing in the channeled and knobbed whelk fishery. 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 across multiple state lines.

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Results and Benefits:

The ACCSP Biological Review Panel identified channeled and knobbed whelk as a top priority due to inadequate biological sampling (ACCSP 2019). Further, both managing agencies in Massachusetts and Rhode Island acknowledge the need for expanded fishery-dependent data collection in support of management and assessment efforts. The proposed project addresses the identified needs of both the ACCSP as well as multiple state management agencies. The results of the proposed project are expected to have broader regional impacts across the Atlantic coast, particularly other southern New England states with developing whelk fisheries such as Connecticut and New York. This project builds upon previous efforts between Rhode Island and Massachusetts of increased coordination and collaboration towards improving fisheries science and management (TNC 2018). The project will specifically have impacts in other states with whelk fisheries as the Research Fleet will serve as a model to further expand and adapt fishery-dependent surveys for whelk to improve data sources used in assessment and management efforts. Due to the unique life history traits of whelk, which result in challenging fishery management scenarios, cost-effective collaborative research efforts may prove to be the best suited for providing timely data used in assessments and management for the species.

The intended accomplishments of the proposed project include:

- Develop databases of whelk biological, catch, and effort data, that can be made accessible, within confidentiality guidelines, to many end users, including industry members, stock assessment scientists, and fishery managers;
- Develop a coordinated method of data transmission to the ACCSP and managing state agencies (Rhode Island and Massachusetts) building off existing data communication practices employed by the CFRF Black Sea Bass and Lobster and Jonah Crab Research Fleets;
- Demonstrate a cost-effective way to collect fishery-dependent data for a commercially important species which is currently listed as data poor;
- Provide a constructive way for members of commercial fisheries to contribute to the assessment and management of whelk;
- Improve the accuracy of the stock assessment and management plan for whelk by providing fishery-dependent data to inform and construct assessment reference points;
- Support diversification and increase economic opportunities for fishing communities by assisting in increasing the long-term sustainability of the whelk fishery;

Specific performance measurements will include:

- Development of a fishery-dependent whelk data collection fleet, consisting of commercial fishermen based out of Rhode Island and Massachusetts;
- **Updating of pre-existing data collection application, On Deck Data, to allow for entry of fishery dependent whelk data;**

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- Completion of eight months of field data collection (biological/catch/discard data) and assimilation of the data into a project database that will be shared regularly with ACCSP, MA DMF, and RI DEM throughout the first year;
- Completion of data analyses and sharing of results via final report dissemination, conference presentations, and local workshops;
- Utilization of the data by RI DEM, MA DMF, and other federal and/or state stock assessment scientists, and others in the fishing industry and fisheries science community; and
- Completion of all the planned project tasks in accordance with the approved project budget amount.

The underlying benefit of the proposed project will be more robust fishery-dependent biological, catch and effort, data available via the ACCSP and provided to MA DMF and RI DEM, on which to base the whelk stock assessment and management. The fishery-dependent data collected by the proposed project would be collected through the existing state channels of Rhode Island and Massachusetts to feed back into the ACCSP biosamples database for use in state and federal management. The collaborative design of the project, utilizing inter-state relationships, will design the at-sea sampling protocols from the inception of the project to provide high resolution, pot-level catch, effort, and biosample data. The data will be collected at-sea by fishermen in a format directly applicable to Rhode Island, Massachusetts and ACCSP data formatting standards and will pass directly to all three parties. Whether this will result in different harvest levels than are currently being realized is difficult to predict, but better informing future stock assessments will surely be a positive outcome, providing a more scientifically-sound basis on which to manage fishing effort. Furthermore, the data collected by the proposed project will also be essential in improving predictive capabilities, and finding the right balance between fishing pressure and resource availability. Finally, the long-term impact of the project is to improve the sustainability of the whelk fishery by filling data gaps resulting in the current data poor listing of the fishery.

Data Delivery Plan

A critical component of the proposed project is the compilation and communication of fishery-dependent biological, catch, and effort data to the ACCSP, participant fishermen, state management agencies of the whelk fishery in Massachusetts and Rhode Island. The CFRF will maintain the whelk database for internal project analyses (described below) and quality control, but will also regularly share the project data with other end users.

In an effort to provide regular feedback to fleet participants, project PIs will compile and distribute individual data reports for the eight participating vessels throughout the project. Based on the seasonality of the whelk fishery in both states proposed to be sampled, data reports will be sent to the participant vessels biannually. The first data report will be compiled and distributed at the conclusion of the fall fishery (in January), and the second data

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report at the conclusion of the spring fishery in July. Vessel-specific data reports will ultimately depend on the specific fishery-dependent data collected but will likely include: number sampling sessions, amount of effort sampled (number of strings of pots and individual pots), average depth of sampling, percentage of whelk retained for sale, percentage of whelk discarded, proportion of each species of whelk in catch and discards, number of whelk biologically sampled, size distribution of whelk sampled, and various catch per unit effort metrics. Additional summary fleet statistics will be available upon request by each individual Fleet participant. All data reports will be confidential within the Fleet, unless participants consent to share amongst other Fleet Members, and will only include the data collected by each report recipient.

Data delivery to managing end users is a primary objective of the proposed project. The CFRF will work with RI DEM and MA DMF project partners during the initial planning of the project to agree on specific data formats to be collected. This planning will be done with the intent to make the fishery-dependent data collected directly comparable and ready for incorporation to existing state fishery-dependent databases. The CFRF will also work with data coordinators at the ACCSP to agree upon desired formatting of all data submissions to the ACCSP of collected whelk biosamples and fishery data. The CFRF will follow data delivery plans currently employed by the CFRF Black Sea Bass and Lobster and Crab Research Fleets to deliver data collected by the proposed Whelk Research Fleet. Data will be delivered to both managing state agencies involved in the project, RI DEM and MA DMF, and ACCSP on the same biannual time frame. Similar to the data reports sent to fishermen, based on the seasonality of the fishery, the data submissions to the ACCSP, RI DEM, and MA DMF will occur in January and July of the project period.

Approach:

The proposed project seeks to collect, communicate, and analyze critically needed biological, catch, and effort fishery-dependent data for incorporation into ACCSP, RI DEM, and MA DMF databases and application in the various state whelk stock assessments. Project components include: 1) Development of a whelk fishing vessel research fleet and tablet application (On Deck Data) for at-sea data collection; 2) Collection of fishery-dependent biological (catch and effort) whelk data and fishery characteristics for eight months in the Massachusetts and Rhode Island fisheries; 3) Internal data analysis to investigate trends in whelk catch and discards in previously identified areas with little to no fishery-dependent data collection; 4) Compilation and communication of project data and results to ACCSP, RI DEM, and MA DMF for application by stock assessment scientists and fisheries managers; and 5) Outreach and education activities to share findings. Methodological details are outlined below.

*Development of Whelk Research Fleet and **Update of Data Collection App***

The first step towards developing the Whelk Research Fleet will be the establishment of a project steering committee and the solicitation of applications from active whelk fishermen in Proposal components that address the ranking criteria are underlined
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Massachusetts and Rhode Island. The steering committee will be established immediately upon the project start and will consist of project Co-PIs, lead research biologist, state fishery managers from MA DMF, and industry members. The CFRF Board of Directors is comprised exclusively of fishing industry and fishing industry support business members. Members from the CFRF Board of Directors with experience or familiarity with the whelk fishery will be included on the steering committee to offer input on the feasibility of project design and implementing the at-sea data collection protocols. Once the Research Fleet participants have been selected, interested participants may also join the project steering committee. Tom Angell from RI DEM will be offered a spot on the steering committee as a whelk biology specialist. Angell has led current RI DEM fisheries independent and dependent whelk analyses used to inform fisheries management, and will offer input on project design and data formatting. Project Co-PIs have already been in communication with Tracy Pugh, Steve Wilcox, and Bob Glenn at MA DMF and will offer them positions on the Steering Committee to represent MA DMF in the proposed project. The inclusion of MA DMF staff on the Steering Committee is critical for the success of the project as it will ensure the utility of the data collected by the Research Fleet across state lines. Despite differences in management scheme, the goal of the Research Fleet will be to collect standardized data applicable to the management of the fishery in both Rhode Island and Massachusetts. MA DMF staff have expressed an interest and commitment to be involved in the proposed project to ensure the data is useful for their assessment and management efforts. Other than offering assistance in sampling protocol design, MA DMF staff will also assist in the identification of areas to target expanding fishery-dependent data collection by the Research Fleet. The Nature Conservancy has expressed support of this project and Dr. Richard Bell has offered to sit on the project steering committee. Dr. Bell has an extensive experience in population dynamics and data limited assessment methods as well as a background with the local Massachusetts and Rhode Island whelk fishery (TNC 2018) and will be a valuable steering committee member.

The CFRF will announce a public application period, encouraging interested whelk fishermen to apply. To ensure a large pool of applicants, the CFRF will consult with the Steering Committee, to identify vessels well suited to undertake the fishery-dependent sampling, fish in areas identified as spatial gaps in existing fishery-dependent data and request applications if interested. MA DMF staff have already identified the fishing vessels from the Martha's Vineyard and Nantucket (Figure 1.) that fish within Nantucket and Vineyard Sound to be a top priority for inclusion on the Massachusetts side of the Research Fleet. This is due to the relative difficulty logistically to collect data from the existing MA DMF fishery-dependent survey on the respective islands. After the application period the CFRF, with consultation from the steering committee and the CFRF board of directors, eight fishing vessels will be selected to participate in the Whelk Research Fleet based on areas fished, months fished, and experience with biological data collection and collaborative research. Four vessels from Rhode Island and Four vessels from Massachusetts will be selected. The CFRF staff will notify the selected Whelk Research Fleet participants and will work with them to establish work agreements outlining the project timeline, sampling requirements, and invoicing procedures prior to collection of fishery-dependent data.

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While the Whelk Research Fleet is being assembled, the CFRF will work with an independently contracted programmer to update the existing data collection application, On Deck Data, to allow for fishery dependent whelk data collection through an existing channel which feeds into the ACCSP biosamples database. On Deck Data was developed by the CFRF for use in the Lobster and Crab Research Fleet and has since been expanded to new versions for data collection in the Black Sea Bass Research Fleet (funded through ACCSP) and Quahog Research Fleet (funded through Rhode Island Sea Grant). The whelk version will be designed such that participant fishermen are prompted to enter the required data fields (outlined below) in a clear and logical sequence. Ultimately, the final data fields to be recorded will be determined during the planning stages of the project if funded. The fishery-dependent data to be recorded will be prioritized and streamlined based on ease of collection while at-sea and impact on management decisions. On Deck data is programmed to automatically record the date, time, and location of sampling events via internal clock and GPS. An important component of On Deck Data is the wireless transfer of data to the project database as all data will be collected by Research Fleet members during their routine fishing practices and uploaded to the CFRF database upon return to port. The Co-PIs will work with ACCSP, RI DEM, and MA DMF staff to ensure the data formats used in the project database are compatible with the ACCSP biosamples database and relevant state databases. This will ensure efficient data transfer, both among state partner agencies and the ACCSP, throughout the course of the project. Participant fishermen will test the whelk data collection app and wireless transfer routine for functionality at-sea and on land prior to the beginning of Fleet sampling.

Fishery-dependent Data Collection

In Rhode Island, the bulk of landings originate from within Narragansett Bay, specifically in the northern portion around Mt. Hope Bay (Figure 1. RI DEM & TNC 2017) however there are landings dispersed throughout state waters. In Massachusetts, the fishery is concentrated along the south coast and islands with the bulk of landings coming from Nantucket Sound with Vineyard Sound, Buzzards Bay, and other areas accounting for a similarly smaller portion of total landings (MA DMF 2018). The Whelk Research Fleet will consist of eight fishing vessels, chosen strategically to cover existing spatial data gaps in whelk fishery-dependent data across the Massachusetts and Rhode Island fishery. While reviewing applicants from the application period described above, the CFRF will consult heavily with RI DEM, MA DMF, and MVFPT to identify overlap of area fished by each applicant and fishery-dependent data gaps. Priority will be given to vessels which cover areas identified as lacking current sources of data.

The goal of each participating Research Fleet member will be to perform at-sea catch sampling on a monthly basis during their commercial whelk fishing season and record all data through On Deck Data. Research Fleet members will sample a set number of strings of whelk pots each month. Within each string of sampled whelk pots, fishermen will sample the catch from specific, randomized pots. Date, time, and latitude/longitude will be recorded by the tablet automatically at the start of a haul of a string of pots. Research Fleet members will also record Proposal components that address the ranking criteria are underlined
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basic session information such as, number of pots in the string, pot type, soak time, and bait type. Catch will be sampled from randomized pots within the string with the exact number of pots sampled within each string to be determined based in discussions with fishermen, feasibility of sampling/time required to sample, and statistical power analyses. Biological catch data collected from each randomized pot will include shell height, width, length, and species for every whelk. Disposition of each whelk (retained or discarded) and any damage observed (e.g. broken tip or siphon), will also be recorded. This process will be repeated for each randomly assigned pot in the sampled string. As previously mentioned, the required number of strings sampled and pots sampled per string monthly will be determined through consultation with the steering committee and whelk fishermen to assess the time commitment required to sample. Due to the seasonality of the whelk fishery, the initial sampling protocols developed in the first months of the project will be tested through the fall season of the fishery. If, through feedback from Research Fleet or Steering Committee Members, the data is either too time consuming to collect or does not provide adequate statistical power changes will be made to the sampling protocols over the winter and implemented in the spring sampling season.

Ultimately, Research Fleet data collection will be oriented towards providing a biological characterization of catch and discards within the whelk fishery to construct stock assessment reference points as well as providing a CPUE estimate within the fishery. Exact data to be collected will be decided during the initial phases of the project through consultation with the project Steering Committee and fishermen. Collected data types and formats will be particularly emphasized to ensure applicability and relevance to both the MA DMF and RI DEM assessment and management process as well as ease of incorporation with existing ACCSP databases.

In addition to the above described fishery-dependent data collection, Research Fleet members will also be given tidbit temperature loggers to record bottom water temperature. Temperature loggers will remain fixed on a specific string of whelk pots during the fishing season. At the conclusion of each fishing season, project staff will pick up and offload all temperature data and return them to Research Fleet Members prior to the start of the next season. Bottom water temperature will allow the trends in catch to be associated with fine scale changes in water temperature.

Internal Data Analysis

The main goal of data collection is to bolster fishery-dependent data sources available for use by state management and assessment efforts. As a result, the effort will primarily be expended to ensure applicability of collected data across state lines. However, data collected by the Research Fleet will also be investigated internally by project staff. Specifically, internal data analyses will seek to answer questions about trends within the fishery. Specific research questions will be further developed during the project and after the initial season of sampling but will include; Are there spatial patterns in the size frequency or species composition in the whelk fishery? Are there catch implications (mean size, ratio of target species to each other) as a result of type of bait, soak time, or pot fished? How does bottom temperature impact whelk

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catch characteristics throughout the year? Research questions will evolve throughout the sampling period of the project and data will constantly be explored through the open-source statistical software R. Generalized Linear Models will be used to explore patterns of variation in catch rates and derive standardized CPUE following (Maunder and Punt 2004).

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 finalization 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 fishing industry members 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 fishery-dependent whelk data collected by the Research Fleet by the project staff and inclusion in state management processes.

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. 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 Whelk Research Fleet through personal meetings, group meetings, e-mail briefings, and phone conversations.
2. Periodic project briefings to key individuals outside the project including whelk fisheries managers in other states through correspondence, including periodic CFRF newsletters describing the project progress.
3. Continual postings of project information on the CFRF website, including descriptions of the research fleet involved, the equipment being used, the type of data being collected, and findings, as this information becomes available over the course of the project.
4. Organization of a research session at the end of the project involving managers, scientists, and members of the commercial 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.

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Geographic Location:

At-sea sampling by the Research Fleet will be conducted within Massachusetts and Rhode Island state water. Exact location of sampling will be up to the selected Research Fleet members as all sampling will occur during normal commercial fishing operations. As mentioned previously, Research Fleet members will be selected to cover spatial gaps in existing fishery-dependent data sources. Project administration, and data management and analyses will be conducted at the RI DEM marine laboratory in Jamestown, Rhode Island and the Commercial Fisheries Research Foundation office in Kingston, Rhode Island.

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Milestone Schedule:

Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
Convene Steering Committee & Develop Sampling Protocols	Announce Application and select Research Fleet vessels	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support	Research Fleet data collection and Fleet support
	Apply for RI and MA permits for sampling	Distribute Permits to Fleet									
Acquire all sampling gear	Acquire all sampling gear	Distribute all sampling gear to Fleet									
Develop ODD, server, and database	Develop ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database	Maintain ODD, server, and database
		Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis	Data QA/QC, review, and analysis
		Quarterly reports to Fleet Members			Quarterly reports to Fleet Members			Quarterly reports to Fleet Members			Quarterly reports to Fleet Members
					Submit data to ACCSP, RI DEM, MA DMF	Write progress report and submit to ACCSP					Submit data to ACCSP, RI DEM, MA DMF
Develop project website and project outreach	Develop project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach	Maintain project website and project outreach

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Project Accomplishments Measurement:

Project Goal	Metric 1	Metric 2	Metric 3	Metric 4	Metric 5	Metric 6	Metric 7
Collect and distribute whelk data in a cost-effective way	Creation of Whelk ODD, CFRF server, and MySQL database	Creation of 8-vessel Research Fleet for whelk	8 months of data collection by Fleet	Transfer of collected data into MySQL database	Transfer of collected data into MySQL database	Submission of all data reports to Fleet Members	Submission of biological and fishery data to ACCSP and other managers
Contribute to the improvement of whelk fishery management;	Expanded sources of fishery-dependent data in RI and MA	Provide whelk data from areas and times of year currently under sampled	Distribution of project data to managing stakeholders	Utilization of Research Fleet data in state whelk stock assessments			
Demonstrate model approach for cost efficient fishery-dependent data collection	Usage of collaborative approach established in other CFRF Research Fleets	Presentations of Fleet design at scientific conferences	Develop manuscript to validate Fleet design through peer review				

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Cost Summary:

Budget Table:

TOTAL	New Proposal		
	Proposal	In-Kind	Total
	\$ 115,149	\$ 3,656	\$ 118,805
% Contribution by Funding Source	97%	3%	100%
Object Class Category	Proposal	In-Kind	Total
A Personnel			
- RI DEM - Conor McManus	\$ 3,652	\$ 1,826	\$ 5,478
Total RI DEM Personnel Costs	\$ 3,652	\$ 1,826	\$ 5,478
B Fringe Benefits	\$ 2,480	\$ 1,240	\$ 3,720
C Travel	\$ 500	\$ -	\$ 500
D Equipment	\$ -	\$ -	\$ -
E Supplies	\$ 100	\$ -	\$ 100
F Contractual - CFRF			
a. Personnel			
- Executive Director - David Bethoney	\$ 11,440		\$ 11,440
- Research Biologist - Thomas Heimann	\$ 28,125		\$ 28,125
- Business Manager	\$ 4,576		\$ 4,576
Total CFRF Personnel Costs	\$ 44,141	\$ -	\$ 44,141
b. Fringe Benefits	\$ 3,973	\$ -	\$ 3,973
c. Travel	\$ 1,500	\$ -	\$ 1,500
d. Equipment	\$ -	\$ -	\$ -
e. Supplies			
- Research Supplies	\$ 4,950		\$ 4,950
- Office Supplies	\$ 1,000		\$ 1,000
Total Supplies	\$ 5,950	\$ -	\$ 5,950
f. Contractual			
- Programmer for On-Deck Data database	\$ 10,000		\$ 10,000
- Martha's Vineyard Fishermen's Preservation Trust	\$ 3,000	\$ -	\$ 3,000
Total Contractual	\$ 13,000	\$ -	\$ 13,000
g. Construction	\$ -	\$ -	\$ -
h. Other Costs			
- Fishing Vessel Stipends	\$ 20,800	\$ -	\$ 20,800
Total Other Costs	\$ 20,800	\$ -	\$ 20,800
i. Total Direct Charges	\$ 89,364	\$ -	\$ 89,364
j. Indirect Charges			
- Proposed at 20% of CFRF Direct Charges	\$ 17,873	\$ -	\$ 17,873
Total Indirect Charges	\$ 17,873	\$ -	\$ 17,873
k. Total CFRF Costs	\$ 107,237	\$ -	\$ 107,237
G Construction	\$ -	\$ -	\$ -
H Other Costs	\$ -	\$ -	\$ -
I Total Direct Costs	\$ 113,969	\$ 3,066	\$ 117,035
J Indirect Charges	\$ 1,180	\$ 590	\$ 1,770
K Total Proposal Costs	\$ 115,149	\$ 3,656	\$ 118,805

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Budget Justification:

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 \$115,149 for 12 months. The voluntary non-federal match funds provided by the RI DEM is \$3,656. The total proposal value is \$118,805. The proposed timeframe is August 1, 2021 to July 31, 2022.

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

- A. Personnel: Deputy Chief – approximately 4% of annual salary = \$5,478
 - C. McManus, Deputy Chief, RIDEM Division of Marine fisheries will serve as a co-advisor and manager to the proposed project, providing guidance on research protocols, assisting with statistical analyses, participating in Research Fleet meetings, developing a data management plan for the Fleet data, assisting in all technical writing and presentations, coordinating with neighboring states with whelk fisheries to inform them of this approach, and conveying project results to fishery governance to inform future stock assessments and fishery management decisions.

- B. Fringe Benefits: 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: \$500 is requested for travel to project meetings with the team, scientific and management outreach events, and visiting Research Fleet participants in the project.

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

- E. Supplies: \$100 is requested in supplies to build standardized gauges that the Research Fleet participants will be using. These gauges will be instrumental and ensuring the same tools are being used by industry and scientists in whelk data collection. They will also be used to inform enforcement on alternative measuring tools when inspecting whelk sizes.

- 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 federal funding will be used:
 - a) Personnel: \$44,141. 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 = \$11,440

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- D. Bethoney, CFRF Executive Director, will oversee the administration, team communication/coordination, field research, and outreach aspects of the project. He will also assist with data analysis, report and outreach material development, and communication of project progress to the client, fishing industry and management communities.
2. Research Biologist – Proposed at 50% of time for 12 months = \$28,125
A CFRF Research Biologist will be 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 = \$4,576
T. Winneg, CFRF Business Manager, will carry out all the finance related aspects of the project including research budget tracking, invoice processing, and administrative support tasks, including purchasing supplies.
- b) Fringe Benefits: \$3,973. This includes a percentage for payroll taxes and worker’s compensation insurance prorated in accordance with % of salary paid from program. Benefits proposed at 9% of personnel costs based on 2019 benefits and historical analysis.
- c) Travel: \$1,500. 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 one personnel to share and disseminate project methods, findings, and conclusions.
- d) Equipment: \$0. There will be no equipment costs on this project.
- e) Supplies: \$5,950. This category includes research supplies and project office supplies.
1. Research Supplies: \$4,950 - Costs of tablets, waterproof cases, Tidbit temperature logger with base & fish measuring board. Proposed at \$618.75 per set x 8 vessels for the duration of the project.
 2. Office Supplies: \$1,000 – Costs to cover database storage and website fees (\$25/month), project office and meeting supplies, outreach materials, etc.
- f) Contractual: \$13,000. This includes costs associated with:
1. Programmer (\$10,000) - CFRF hiring an outside computer programmer to develop the On Deck Data application for whelk data collection, setup wireless data transfer to and storage in a SQL database, and assist with beta testing to address any issues that arise, and to update the app to maintain functionality. This cost estimate is based on the CFRF’s past experience programming a tablet application for black sea bass data collection (On Deck Data) and developing reliable wireless data transfer and storage. The whelk data collection app developed for this project will be an

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autonomous sampling platform, separate from the other On Deck Data sampling apps.

2. Martha's Vineyard Fishermen's Preservation Trust (\$3,000) to assist with fleet support and data gathering. This includes S. Edmundson's time for organizing and informing the Martha's Vineyard whelk fleet and aid related to data collection and training. -
 - g) Construction: There are no construction costs.
 - h) Other Costs: \$20,800. This includes:
 1. Fishing vessel stipends (\$20,800) for 8 vessels for 8 months at \$500 per month. A fleet of 8 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 whelk distribution.
 - i) Total Direct Charges: \$89,364. This is the total direct charges for cost items a-h.
 - j) Indirect Charges: \$17,873. Indirect general and administrative costs are calculated as 20.0% of federally requested Total Direct Charges. 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 FY2019 Indirect Cost Rate Proposal dated 12/30/19 is for 20.01% based on FY2019 actual costs.
 - k) Total Proposal Costs: \$107,237.

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: \$113,969 Federal + \$3,066 In-Kind = \$117,035 total. This is the total direct charges for cost items A-H.

J. Indirect Charges: \$1,180 Federal + \$590 In-Kind = \$1,770. Proposed at 19.25% of RIDEM Direct Charges

K. Total Proposal Costs: \$115,149 Federal + \$3,656 In-Kind = \$118,805 Total.

Principle Investigators:

The co-Principal Investigators of this proposed project are: M. Conor McManus (Deputy Chief, RI DEM Division of Marine Fisheries), N. David Bethoney (Executive Director, CFRF), and Shelley Edmundson (Executive Director, MVFPT).

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M. Conor McManus will serve in an advisory and support role for the proposed project. McManus will provide advice during throughout the project on development of sampling protocols and specific data fields and formats to collect through the Research Fleet. Further, McManus will advise on the necessary minimum sampling targets to achieve appropriate statistical power to describe catch and begin constructing stock assessment reference points with Fleet data. McManus will meet with fishers to both aid in tablet utilization as well as learn how the data collection process worked for them. He will assist with analyzing data from the Research Fleet for progress and scientific reports and presentations. Finally, McManus will be crucial in the application of Research Fleet collected data to whelk assessment and management efforts and will coordinate with MA DMF to establish best practices for inclusion.

N. David Bethoney, Executive Director of the CFRF, will serve as the lead Co-PI for the proposed project. Bethoney will be responsible for overall projection direction and progress towards completing proposed objectives. Bethoney will be primarily responsible for overseeing proposed data analysis as well as dissemination of project results to the ACCSP and state agencies. At the time of funding, Bethoney will assign a lead CFRF Research Biologist to serve as the primary individual responsible for Research Fleet support, as well as data management, communication, and analysis.

Shelley Edmundson, Executive Director of the MVFPT, will serve in an advisory role for the proposed project. Edmundson has worked with the whelk fishery for years and is an expert on whelk ecology in the project area (Edmundson 2016). Edmundson will provide advice during the planning stages of the project from sampling design to vessel selection. Further, Edmundson will be available throughout the data collection period of the project to troubleshoot and serve as a liaison for vessels on Martha's Vineyard with the CFRF.

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M. CONOR MCMANUS

Rhode Island Department of Environmental Management
Division of Marine Fisheries, Fort Wetherill Marine Laboratory
3 Ft. Wetherill Road
Jamestown, Rhode Island, 02835

Tel: (401) 423-1941
Fax: (401) 423-1925
email: conor.mcmanus@dem.ri.gov

PROFESSIONAL PREPARATION

University of Rhode Island, Narragansett, RI
University of Rhode Island, Narragansett, RI
Boston University, Boston, MA

Ph.D., Oceanography, 2014-2017
M.S., Oceanography, 2010-2012
B.A., Marine Science, *cum laude*, 2006-2010

APPOINTMENTS

2018 – present Deputy Chief, RI DEM Division of Marine Fisheries
2018 – present Adjunct Professor, Graduate School of Oceanography, University of Rhode Island
2016 – 2018 Principal Marine Fisheries Biologist, RI DEM Division of Marine Fisheries
2012 – 2016 Fisheries Scientist, Applied Science Associates (dba RPS)
2013 – 2014 Marine Biologist, Integrated Statistics/NOAA-NMFS-NEFSC
2010 – 2012 Graduate Research Assistant, University of Rhode Island

SELECTED PEER-REVIEWED PUBLICATIONS (TOTAL = 17)

- McManus, M.C.**, Ullman, D.S., Rutherford, S.D., and Kincaid, C. 2020. Northern quahog (*Mercenaria mercenaria*) larval transport and settlement modeled for a southern New England estuary. *Limnology and Oceanography* 65(2): 289-303.
- Friedland, K.D., **McManus, M.C.**, Morse, R.E., and Link, J.S. 2019. Event scale and persistent drivers of fish and invertebrate distributions on the Northeast US Shelf. *ICES Journal of Marine Science* 76(5): 1316-1334.
- Langan, J., **McManus M.C.**, Schonfeld, A., Truesdale, C., and Collie, J. 2019. Nearshore sex-specific dynamics of the summer flounder (*Paralichthys dentatus*) in Rhode Island waters. *Marine and Coastal Fisheries: Dynamics, Management, and Ecosystem Science* 11(1): 76-85.
- Truesdale, C.L., **McManus, M.C.**, and Collie, J.S. 2019. Growth and molting characteristics of Jonah crab (*Cancer borealis*) in Rhode Island Sound. *Fisheries Research* 211: 13-20.
- McManus, M.C.**, Hare, J.A., Richardson, D.E., and Collie, J.S. 2018. Tracking shifts in Atlantic mackerel (*Scomber scombrus*) larval habitat suitability on the Northeast U.S. Continental Shelf. *Fisheries Oceanography* 27(1): 49-62.
- Oviatt, C., Smith, L., Krumholz, J., Coupland, K., Stoffel, H., Keller, A., **McManus, M.C.**, and Reed, L. 2017. Managed nutrient reduction impacts on nutrient concentrations, water clarity, primary production, and hypoxia in a north temperate estuary. *Estuarine, Coastal, and Shelf Science* 199:25-34.
- Hare, J., Morrison, W., Nelson, M., Stachura, M., Teeters, E., Griffis, R., Alexander, M., Scott, J.,... **McManus, M.C.**, Marancik, K., and Griswold, C. 2016. A vulnerability assessment of fish and invertebrates to climate change on the Northeast U.S. Continental Shelf. *PLoS ONE* 11(2): e0146756.
- McManus, M.C.**, Licandro, P., and Coombs, S.H. 2016. Is the Russell Cycle a true cycle? Multidecadal zooplankton and climate trends in the western English Channel. *ICES Journal of Marine Science* 73(2): 227-238. **McManus, M.C.**, Oviatt, C.A., Gibling, A.E., Tucker, J., and Turner, J.T. 2014. Western Maine Coastal Current reduces primary production rates, zooplankton abundance and benthic nutrient fluxes in Massachusetts Bay. *ICES Journal of Marine Science* 71(5): 1158-1169.

SCIENTIFIC PRESENTATIONS

Given 13 scientific presentations (12 oral, 1 poster) as lead author, and 28 (19 oral, 9 poster) as coauthor.

SELECTED SYNERGISTIC ACTIVITIES

Northeast Regional Sea Grant Lobster Extension Program Steering Committee; Member (2020-present).
Stellwagen Bank National Marine Sanctuary Advisory Council, Research Alternate Member (2019-present).

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ASMFC Spiny Dogfish Technical Committee, Member (2019-present).
ASMFC Coastal Sharks Technical Committee, Member (2019-present).
ASMFC Management and Science Committee, Member (2019-present).
American Fisheries Society's Southern New England Chapter, Board Member (2018-present).
ASMFC American Lobster Stock Assessment Subcommittee, Member (2017-present).
Northeast Coastal Acidification Network Policy Working Group (2017-present).
ASMFC Jonah Crab Technical Committee, Member (2017-2018).
ASMFC American Lobster Technical Committee, Member (2016-present).
University of Rhode Island Dive Control Board, Member (2015-2017).
NOAA NRDA *Deepwater Horizon* Water Column Technical Working Group Member (2012-2015).
Scientific journal reviewer: *Bulletin of Marine Science*; *Canadian Journal of Fisheries and Aquatic Sciences*;
Fisheries Research; *Fisheries Oceanography*; *Hydrobiologia*; *ICES Journal of Marine Science*; *Journal of Marine Systems*; *PeerJ*.
Proposal reviewer: *NOAA Saltonstall-Kennedy Program*; *New Hampshire Sea Grant Program*; *Massachusetts Clean Energy Center*

SELECTED HONORS AND AWARDS

2017 Certificate of Appreciation, Rhode Island Department of Environmental Management
2017 Bronze Medal Award*, National Oceanic and Atmospheric Administration
**Formally awarded to 14 federal employees, 9 contract employees received contribution acknowledgement.*
2016 William E. Simmons Memorial Scholarship in Oceanography, URI-GSO
2016 Best Student Paper Award, American Academy of Underwater Sciences
2015 Davis Family Scholarship for Fisheries in Oceanography, URI-GSO
2015 Global Marine Initiative Student Research Award, The Nature Conservancy
2012 Henry S. Farmer Award in Biological Oceanography, URI-GSO
2011 Fillmore Memorial Scholarship Award, URI-GSO
2010 College Prize for Excellence in Marine Science, College of Arts and Sciences, Boston University
2008 Capstone Award, College of General Studies, Boston University

SELECTED AWARDED GRANTS (TOTAL = 10)

2020 Rhode Island Sea Grant, Co-PI, \$217,928
2020 Rhode Island Sea Grant, Co-PI, \$249,155
2019 U.S. Fish and Wildlife State Wildlife Grant, Co-PI, \$111,848
2018 RI Consortium for Coastal Ecology Assessment Innovation and Modeling, Co-PI, \$25,000
2017 U.S. Fish and Wildlife State Wildlife Grant, PI, \$27,300
2017 Rhode Island Sea Grant, Co-PI, \$137,765
2015 The Nature Conservancy, PI, \$20,220

STAFF ADVISING

Oversee the work of RIDEM Marine Fisheries' Research and Assessment team consisting of 1 Supervising Biologist, 5 Principal Biologists, 1 Principal Planner, 3 Fisheries Technicians, and 5 Seasonal Researchers.

GRADUATE STUDENT ADVISING

Served/serving as a graduate school committee member for 3 Ph.D. students and 3 M.S. students from: University of Rhode Island, University of Massachusetts – Dartmouth

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Dr. NAIFF DAVID BETHONEY
Executive Director Commercial Fisheries Research Foundation
P.O. Box 278 Saunderstown, RI
401-515-4662, dbethoney@cfrfoundation.org

EDUCATION:

University of Massachusetts at Dartmouth School for Marine Science and Technology

PhD Dissertation: Understanding and avoiding River herring and American shad bycatch in the Atlantic herring and mackerel mid-water trawl fisheries.

Cum. GPA: 3.92

PhD Received 2013

MA Thesis: Association between diet and epizootic shell disease in the American lobster (*Homarus americanus*) around Martha's Vineyard

Cum. GPA: 3.93

M.S. Received 2010

Colby College - Waterville, ME

Major: Biology with Concentration in Environmental Science

Cum. GPA: 3.41, Cum Laude

B.A. Received 2008

SEA Education Association of Woods Hole, MA

Study Abroad: Fall 2006

Documenting Change in the Caribbean: Designed and implemented an original biological research project with practical application while at-sea. Studied at Woods Hole, and sailed from St. Croix, USVI to Key West, Florida with research stops at Montserrat, Dominican Republic, and Jamaica.

WORK EXPERIENCE:

- Commercial Fisheries Research Foundation Spring 2020-Present

Executive Director: Responsible for overseeing foundation business manager, scientific staff, interns, and consultants to carry out all tasks associated with ongoing projects and general administration. In addition, responsible for pursuing new partnerships and projects, including proposal development and submission, under the advisement of the foundation Board of Directors.

- UMASS-Dartmouth School for Marine Science and Technology Fall 2008-Spring 2020

Research Assistant Professor, Fall 2014-Present: All responsibilities of research associate position related to drop camera and herring work with the ability to be lead principle investigator on research proposals and serve on student committees.

Research Associate, Summer 2013-Summer 2014: All responsibilities of research assistant position described below with management and development responsibilities for scallop drop camera and groundfish video surveys. Management responsibilities include equipment purchasing and maintenance and oversight of all technical operations and student involvement.

Research Assistant, Summer 2010- Spring 2013: Major responsibilities included coordinating River Herring bycatch avoidance program, assisting the Massachusetts Division of Marine Fisheries port side sampling program, and scallop drop camera survey at-sea data collection and analysis.

Graduate Research Assistant, Fall 2008-2010: Assisted with American lobster research including lobster husbandry, measuring and photographing lobsters, collecting larvae, and setting up housing apparatuses.

SCIENTIFIC JOURNAL PUBLICATIONS IN LAST 3 YEARS:

1. Stokesbury KDE and Bethoney ND. 2020. How many sea scallops are there and why does it matter? *Frontiers in Ecology and the Environment*. In Press.
2. Bethoney ND and Stokesbury KDE. 2019. Implications of extremely high recruitment:

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crowding and reduced growth within spatial closures. Marine Ecology Progress Series 611:157-165.

3. Bethoney ND, Cleaver C, Asci SC, Bayer SR, Wahle RA, Stokesbury KDE. 2019. A comparison of drop camera and diver survey methods to monitor Atlantic sea scallops (*Placopecten magellanicus*) in a small fishery closure. Journal of Shellfish Research 38(1):43-51.
4. Stokesbury KDE, Bethoney ND, Georgianna D, Inglis S, Keiley EF. 2019. Convergence of a disease and litigation leading to increased scallop discard mortality and economic loss in the Georges Bank, USA fishery. North American Journal of Fisheries Management 39(2):299-306.
5. Bethoney ND and Stokesbury KDE. 2018. Methods for image-based surveys of benthic macroinvertebrates and their habitat exemplified by the drop camera survey of the Atlantic sea scallop. Journal of Visualized Experiments 137: DOI: 10.3791/57493.
6. Bethoney ND, Schondelmeier BP, Kneebone J, Hoffman WS. 2017 Bridges to best management: Effects of a voluntary bycatch avoidance program in a mid-water trawl fishery. Marine Policy 83: 172-178
7. Bethoney ND, Zhao L, Chen C, Stokesbury KDE. 2017. Identification of persistent benthic assemblages in areas with different temperature variability patterns through broad-scale mapping. PLoS ONE 12(5): e0177333. <https://doi.org/10.1371/journal.pone.0177333>.

GRANTS RECEIVED AS A PRINCIPLE INVESTIGATOR IN LAST 2 YEARS:

1. “FY 2020: Advancing Fishery-dependent Data Collection for Black Sea Bass (Centropomus striata) in the Southern New England and Mid-Atlantic Region..” Utilizing Modern Technology and a Fishing Vessel Research Fleet Approach”
Awarded from: Rhode Island Department of Environmental Management
Value: \$132,097
March 2020
2. “SMAST drop camera survey of Patagonian scallop Management Unit B, 2019”
Awarded from: Clearwater Seafoods
Value: \$194,811
August 2019
3. “SMAST Drop Camera of Brown Bank and the Canadian Portion of Georges Bank, 2019”
Awarded from: Clearwater Seafoods
Value: \$ 162,329
July 2019
4. “SMAST drop camera of Vineyard Wind lease areas before development”
Awarded from: Vineyard Wind LLC
Value: \$ 243,888
June 2019
5. “Drop camera surveys examining the scallop population and habitat of the Mid-Atlantic and assessment of automated scallop count and measurement algorithm”
Awarded from: National Oceanic and Atmospheric Administration
Value: \$ 242,440
May 2019
6. “High-resolution drop camera surveys to track scallop aggregations in Closed Area I access area, Nantucket Lightship, and Great South Channel”
Awarded from: National Oceanic and Atmospheric Administration
Value: \$ 106,281
May 2019
7. “Maintaining and expanding bycatch avoidance strategies in the mid-water trawl Atlantic herring fishery”
Awarded from: National Oceanic and Atmospheric Administration
Value: \$ 134,979
February 2019
8. “SMAST Drop Camera of Brown Bank and the Canadian Portion of Georges Bank, 2018”
Awarded from: Clearwater Seafoods
Value: \$ 146,398
Sept 2018

Proposal components that address the ranking criteria are underlined

Changes from the original proposal are highlighted in yellow

Shelley A. Edmundson
Executive Director, Martha's Vineyard Fishermen's Preservation Trust
P.O. BOX 1274 VINEYARD HAVEN, MA 02568
Ph: (407) 414-5387 Shelley.Edmundson@gmail.com

Academic Background:

Ph.D., Zoology, 2016, *Summa cum laude* University of NH, Durham,
NH M.S., Environmental Science, 2008, *Summa cum laude* University of MA, Boston,
MA B.A., Biology, 2003, *Magna cum laude* Wheaton College, Norton, MA

Employment:

- **Martha's Vineyard Fishermen's Preservation Trust**, Menemsha, MA
Executive Director, 2016 - Present
Administrator/Treasurer, 2011- 2016
Co-founder of non-profit group created to preserve, promote, and sustain the Vineyard's commercial fishing heritage through the acquisition and distribution of fishing permits.
- **Vineyard Wild Caught**, Menemsha, MA
Co-Founder, 2009 - Present
Founded an initiative supporting local fisheries by identifying locally caught seafood through a labeling system that links Vineyard-harvested fish, lobster, and shellfish to the individual Vineyard fishing vessels and captains. Developed, organized, and continuously promote and sustain the initiative.

Scientific and Professional Organizations:

- Vineyard Vision Advisory Council (2018 - Present)
- Vineyard Conservation Society Board Member (2018 - Present)
- American Institute of Fishery Research Biologists (2014 - Present)
- American Fisheries Society, Estuaries and Marine Fisheries Sections (2013 - 2016)
- World Aquaculture Society, US Aquaculture Society Chapter (2013 - 2016)

Research Experience:

- **University of New Hampshire**, Durham, NH, 2011- 2016, Ph.D. Candidate
Researched channeled whelk biology including early life history, fecundity, growth rates, movements, and feeding activity. Organized and led collaborative research with local whelk fishermen on Martha's Vineyard, MA.
- **University of New Hampshire**, Durham, NH, 2011- 2012, Ph.D. Student
Assisted with research project involving winter flounder stock enhancement in coastal ponds in Massachusetts and New York.
- **University of Massachusetts**, Boston, MA, 2005 - 2008, Master's Student
Researched site suitability analysis for offshore sea scallop aquaculture in waters near Martha's Vineyard, MA.
- **Wallace Laboratory**, Boston, MA, 2005 - 2006, Research Assistant
Analyzed, reduced data, and assisted with research in a trace-metal laboratory study investigating the transport and distribution of metals in coastal ecosystems.

Fellowships/Awards:

- UNH Dissertation Year Fellowship, 2015 - 2016, Fellow
- UNH School of Marine Science and Ocean Engineering Research Development and Travel Support Program, December 2014, Awardee
- American Fisheries Society, Estuaries Section Travel Award, September 2013, Awardee

Proposal components that address the ranking criteria are underlined

Changes from the original proposal are highlighted in yellow

- UNH School of Marine Science and Ocean Engineering Research Development and Travel, Support Program, February 2013, Awardee
- Martha's Vineyard Vision Fellowship, 2011 - 2015, Fellow
- National Science Foundation, Watershed Integrated Science Partnership, 2006 - 2007, Fellow
- Balfour Scholar, Wheaton College, 1999 - 2003, Scholar

Publications:

Edmundson, S. 2016. Channeled whelk (*Busycotypus canaliculatus*) ecology in relation to the fishery in Vineyard and Nantucket Sounds, MA. Fall 2016. Doctorate dissertation. University of New Hampshire.

Edmundson, S. 2014. Effects of temperature on incubation period, survival, and growth of juvenile channeled whelk (*Busycotypus canaliculatus*). *Newsletter of the American Fisheries Society*, Estuaries Section. Spring 2014.

Selected Presentations:

National:

Edmundson, S. and E.A Fairchild. 2015. Channeled whelk research. Mote Marine Laboratory and Aquarium. Sarasota, FL, June 11, 2015. (Guest lecturer)

Edmundson, S. and E. A. Fairchild. 2015. Channeled whelk research. Key West Community College, Key West, FL, April 6, 2015. (Guest lecturer)

Edmundson, S. and E. A. Fairchild. 2014. Channeled whelk growth rates in Nantucket Sound, MA. 16th International Conference for Shellfish Restoration. Charleston, SC, December 12, 2014. (Poster)

Edmundson, S. and E. A. Fairchild. 2013. Using hatcheries to answer early life history questions: A case study of channeled whelk. 143rd American Fisheries Conference. Little Rock, AR, September 11, 2013.

Edmundson, S. and E.A. Fairchild. 2013. Effects of temperature on incubation period, survival, and growth of juvenile channeled whelk (*Busycotypus canaliculatus*). The annual meeting of the World Aquaculture Society. February 21-25, 2013, Nashville, TN. (Poster)

Regional:

Edmundson, S. and E. A. Fairchild. 2016. Channeled whelk movements and behavior in Vineyard Sound. Cape Cod Natural History Conference. West Barnstable, MA, March 5, 2016.

Edmundson, S. and E. A Fairchild. 2015. Conch growth rates project update. Cape Cod Commercial Fishermen's Alliance. Chatham, MA, May 4, 2015.

Edmundson, S. and E. A. Fairchild. 2013. Researching channeled whelk growth rates in Nantucket and Vineyard Sounds. Permanent Endowment for Martha's Vineyard Board Meeting. West Tisbury, MA, July 23, 2013.

Edmundson, S. and E. A. Fairchild. 2013. Channeled whelk research at UNH. MA Division of Marine Fisheries. Boston, MA, May 13, 2013.

Proposal components that address the ranking criteria are underlined

Changes from the original proposal are highlighted in yellow

References:

- ACCSP Biological Review Panel. 2019. Biological Sampling Priority Matrix.
- Angell, T.E. 2019. 2006-2018 Catch, Effort, and Fishery Trends in the Rhode Island Whelk Fishery and Recent Stock Status. RI Division of Marine Fisheries Research Reference Document.
- Edmundson, S. E. 2016. Channeled Whelk (*Busycotypus Canaliculatus*) Ecology in Relation to the Fishery in Vineyard and Nantucket Sounds, Massachusetts. Doctoral Dissertation. University of New Hampshire. 178p.
- Gawarkiewicz, G. and A. Mercer. 2019 Partnering with Fishing Fleets to Monitor Ocean Conditions. Annual Review of Marine Science 11: 391-411.
- Maunder, M.N. and A.E. Punt. 2004. Standardizing catch and effort data: a review of recent approaches. Fisheries Research 70: 141-159.
- Nelson, G.A., S.H. Wilcox, R. Glenn, and T.L. Pugh. 2018. A Stock Assessment of Channeled Whelk (*Busycotypus canaliculatus*) in Nantucket Sound, Massachusetts. Massachusetts Division of Marine Fisheries Technical Report.
- The Nature Conservancy. 2018. FishPath Workshop Report: Rhode Island Channeled Whelk. The Nature Conservancy, Arlington, Virginia, USA.
- Peemoeller, B.J., and B.G. Stevens. 2013. Age, size, and sexual maturity of channeled whelk (*Busycotypus canaliculatus*) in Buzzards Bay, Massachusetts. Fishery Bulletin 111(3): 265-278

Proposal components that address the ranking criteria are underlined
Changes from the original proposal are highlighted in yellow

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

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

Submitted by:
Martin L. Gary
Executive Secretary
Potomac River Fisheries Commission
222 Taylor Street
Colonial Beach, VA 22443
martingary.prfc@gmail.com

Applicant Name: Potomac River Fisheries Commission

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

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

Principal Investigator: Martin L. Gary

Project Manager: Martin L. Gary

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

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

Original Date Submitted: June 15, 2020

Revised Date Submitted: August 17, 2020

Objective:

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

Need:

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

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

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

Results and Benefits:

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

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

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

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

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

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

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

Approach:

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

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

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

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

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

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

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

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

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

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

The second phase, during Year 1 will be to:

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

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

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

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

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

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

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

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

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

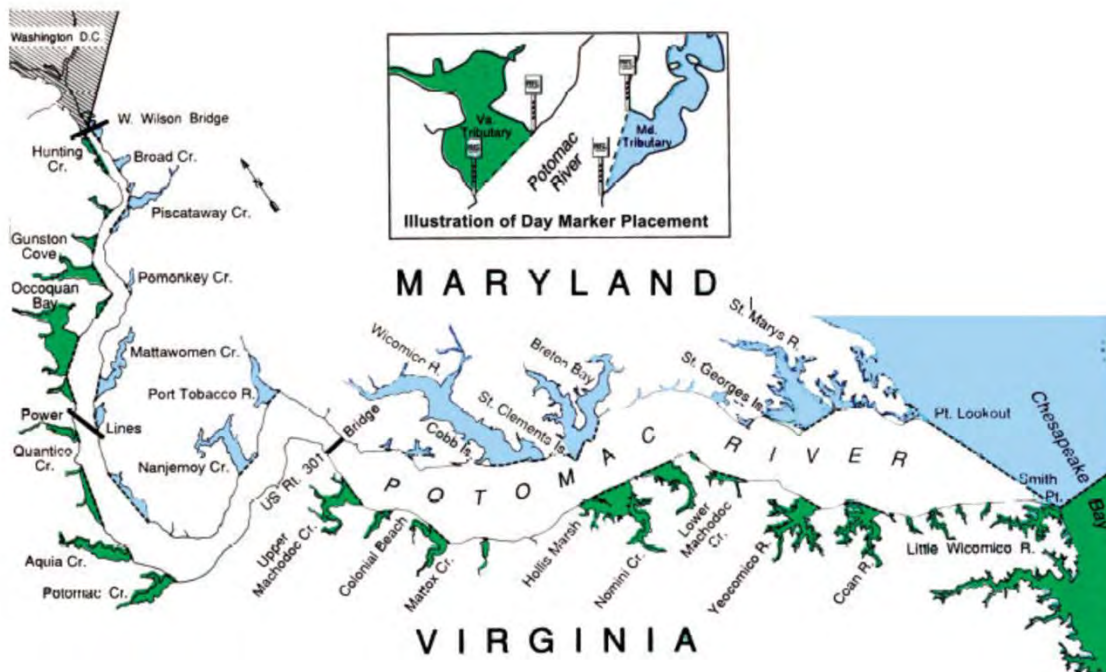
12. Increase the number of commercial harvesters using the ACCSP eTrips-tools:

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

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

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

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



Milestone Schedule:

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

Project Accomplishments Measurement:

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

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

Cost Summary (Budget):

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

Martin L. Gary
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Address

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Catonsville, MD 21228
Work: P.O Box 9
Colonial Beach, VA 22443

Education

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

Experience

Potomac River Fisheries Commission: July 2013 to Present
Executive Secretary

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

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

Affiliations

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

References: Available Upon Request

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

**Creation of a Genetic Stock Identification program for
Atlantic coast striped bass (*Morone saxatilis*)**

Submitted by:

Benjamin Gahagan
Massachusetts Division of Marine Fisheries
30 Emerson Avenue
Gloucester, MA 01930

Applicant Name: Massachusetts Division of Marine Fisheries

Project Title: Creation of a Genetic Stock Identification program for Atlantic coast striped bass (*Morone saxatilis*)

Project: Type: New Project

Principal Investigator: Benjamin Gahagan

Co-Principal Investigators: Dr. Scott Pavey, Dr. Andrew Whiteley, Dr. Adrian Jordaan

Requested Award Amount: \$99,820

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

Date Submitted: Aug. 11, 2020

Objective: We propose to deliver a data program plan and methodology that would allow management agencies on the Atlantic coast to efficiently and accurately estimate the catch and harvest of migratory striped bass (*Morone saxatilis*) caught in mixed stock fisheries back to three spawning populations. The project's primary objectives focus on the biological module (70%) but our products have relevance to the catch and effort (15%) and bycatch (15%) modules.

Within the scope of the project, the following specific deliverables will be met:

- Processing and classification of 5,000 striped bass tissue samples collected from coastal commercial and recreational fisheries between 2015 and 2020
- Power analysis of data set to determine adequate sample sizes needed to estimate annual population specific mortality in a specified region
- Finalization and publication of an affordable, open access genomic method for accurate and precise classification of striped bass caught in mixed stock fisheries
- Report providing sampling and processing recommendations and protocols for the establishment of a coastal sampling program that can be integrated into ACCSP data collection and interstate management

Need: Striped bass fisheries comprise the most popular and economically significant recreational fisheries on the northern half of the Atlantic coast and contribute more than six billion dollars of economic activity annually (Southwick Associates 2005). In Massachusetts alone, the National Marine Fisheries Service estimated that roughly 1.1 billion dollars was spent on recreational fishing in 2016, with 60% of trips targeting striped bass. This suggests that as much as 600 million dollars was spent by recreational fishers to target striped bass in just Massachusetts in 2016 (NMFS 2018). Striped bass also support important commercial fisheries in several states. As anadromous migratory fish that routinely cross among jurisdictions, and the target of commercial fisheries in several states, striped bass are managed on an interstate basis by the Atlantic States Marine Fisheries Commission (ASMFC), which considers them a high priority species (ASMFC 2018b). Indeed, the Atlantic Striped Bass Conservation Act (1984) and Atlantic Coastal Fisheries Cooperative Management Act (ACFCMA, 1993), codifying state and federal agency partnerships to manage coastal fisheries, established striped bass as a flagship species for multi-partner management on a coastal scale.

Due to data limitations, the ASMFC continues to manage coastal striped bass fisheries, which are in fact made up of a mixture of bass from several spawning areas, as a homogeneous 'stock'. A methodology to assign catch from coastal mixed stock fisheries to the populations from which they originate fulfills ASMFC Modeling/Quantitative as well as Fishery-Independent Priorities (ASMFC 2018a, 2018b). This project also meets the criteria for the ACCSP Recreational Technical Committee funding prioritization as it implements Biological sampling for recreational fisheries separate from MRIP APAIS. Striped bass are relevant to the ACCSP Bycatch Sampling Priority Matrix because they are bycatch in many of the fisheries and gear types listed, including New England Mid-Water Otter Trawl, New England Gillnet, New England Otter Trawl, and Mid-Atlantic Small Mesh Bottom Trawl.

Striped bass can be found seasonally in many coastal rivers and estuaries within their range but only a few estuaries (i.e., Chesapeake Bay, Hudson River, Delaware Bay, and the Roanoke River/Albemarle Sound) are thought to substantially contribute to the abundance of coastal migrants (Boreman and Lewis, 1987). Currently, seine surveys are used in estuaries with spawning populations of striped bass to estimate age-1 recruitment. However, as recruits leave natal rivers and estuaries, there is a lack of any ability to partition migrants to spawning populations. This problem is exacerbated by diverse behaviors, where significant portions of individuals within a population display resident or migratory behaviors which can shift as striped bass grow and mature (Secor et al 2001, Gahagan et al 2015, Secor et al 2020). These behavioral complexes, known as partial migration (Secor 2015), can uncouple observable trends between juvenile production and coastal abundance. Recruitment potential to the migratory stock may be further complicated by ongoing climate change, which is anticipated to alter the migratory pathways, habitats, and productivity of many fish (Perry et al. 2005, Nye et al. 2009, Lucey and Nye 2010, Lynch et al. 2015) and may change the phenology of spawning (Ellis and Vokoun 2009, Fincham et al. 2013, McQueen and Marshall 2017) with resulting effects on striped bass mortality (Peer and Miller, 2014).

The lack of a reliable method to partition coastal harvest has led to uncertainty in assessments, potentially inaccurate quotas, possible overharvest of less productive populations and underharvest of productive ones, and difficulty enacting regulations that are widely supported (ASMFC 2013, 2015). We propose a research project that will provide an easily implemented and accurate genomic-based sampling program and enable estimates of coastal mortality to be assigned to three spawning areas on the Atlantic coast of the U.S. for mixed stock fisheries throughout the migratory range of Atlantic coast striped bass.

The outstanding need for an accurate assignment method is a result of the inability of many traditional methods to adequately describe striped bass migratory behaviors. Studies based on conventional tags (e.g. spaghetti or loop tags) have provided important details of broader migratory patterns (Chapoton and Sykes 1961, Clark 1968, Boreman and Lewis 1987) but lack an adequate number of returns and frequently relied on fish of unknown origin tagged during oceanic migrations. In the past decade researchers have increasingly relied on acoustic telemetry tags (Wingate and Secor 2007, Wingate et al. 2011, Kneebone et al. 2014, Gahagan et al. 2015), which can provide highly detailed migration patterns and rates of mortality but their high cost prevents deploying the number of tags required to cover all natal populations. Attempts to use early genetic markers (Waldman et al. 1988, Waldman et al. 2011) produced variable results while more recent genetic-based studies have been partially successful in discerning stock structure in smaller portions of the coast-wide species distribution (Roy et al. 2000, Brown et al. 2005, Gauthier et al. 2013) but have not been able to confidently estimate the assignment of coastal migrants with enough precision for management use. Wirgin et al. (2020) recently completed a microsatellite-based genetic baseline that is broad in coverage and appears to offer accurate results, but its applicability may be limited by difficulty in transferring microsatellite markers among genetics laboratories.

4

MA Division of Marine Fisheries

ACCSP Funding Proposal: Creation of a Genetic Stock Identification program for Atlantic coast striped bass (*Morone saxatilis*)

Sections of the proposal identified to help with the ranking process are in highlighted in green with a summary on page 13. All changes to initial proposal are highlighted in yellow.

The problem facing striped bass management is neither unique nor without solutions. On the West Coast, state and federal agencies, along with academic researchers, have successfully taken advantage of recent genomic advances, especially the development of Single Nucleotide Polymorphism (SNP) markers, to implement Genetic Stock Identification (GSI) sampling programs. The successful implementation of these programs has allowed agencies to manage anadromous mixed stock fisheries using nearly real-time information about population specific harvest (Habicht et al. 2010, Dann et al. 2013, Satterthwaite et al. 2014, Bradbury et al. 2016). These GSI programs typically take advantage of the improved speed and accuracy that is a by-product of SNP based panels for high throughput Next Generation Sequencing (NGS). Another substantial benefit of SNP based approaches is that they are generally easily replicated among labs, allowing many labs to simultaneously process samples with consistent results and making our project applicable over the entire region occupied by migratory striped bass.

Accordingly, we have already assembled and analyzed a SNP baseline spanning the entire range of migratory striped bass from North Carolina through the Canadian Maritimes. Our results (LeBlanc et al. 2020) indicate that the baseline can be used to classify striped bass back to six spawning areas, three of which are in Canada and three in the United States (U.S.). The U.S. complexes include the Hudson and Kennebec Rivers, the Delaware and Chesapeake Bays, and the Roanoke River and Albermarle Sound. We are now in the process of identifying the most informative SNPs for stock assignment and creating a GT-seq panel (Campbell et al. 2015) for fast and efficient assignment of mixtures and individual striped bass caught in coastal fisheries at reasonable costs (\$25-30 per sample). This project would have an important regional impact by providing complementary biological data to what is already collected, would address important coastwide management and stock assessment needs throughout the migratory range of the species, provide a baseline of data for future studies, and complement potential future advances such as close-kin mark-recapture (Bravington et al. 2016a and 2016b).

Results and Benefits: The creation of a GSI program for striped bass addresses multiple priorities for the ASMFC and ACCSP while providing new biological sampling data and addressing urgent stock assessment needs. The successful implementation of the program would allow for population specific management of mixed stock fisheries creating fisheries that are more sustainable while maximizing fishing opportunities.

The GSI program will provide two types of data: estimation of mixture proportions (Grant et al. 1980; Anderson et al. 2008) and assignment of individuals to natal populations (Manel et al. 2005; Anderson et al. 2008). For striped bass, accurate estimates of mixture proportions and individual assignments serve different purposes and are both essential for understanding stock-specific age structure and migratory patterns required by management agencies and for assessments. Mixture estimates will provide the basic information required to partition the coastal catch to specific populations. Accurate individual assignments will allow managers and researchers to incorporate a variety of individual-level attributes to that mortality. These characteristics include attributes essential to stock assessment data, such as sex, migratory

history, and age. Since striped bass can have highly variable life histories (Secor et al. 2001, Gahagan et al. 2015, Secor et al. 2020), these data will create unparalleled opportunities to understand their life history and apply that knowledge to management actions.

As part of the proposed work, we will develop methodology to extract DNA from uncleaned scales sampled by many agencies for ageing and frequently stored without undergoing any processing such as removal of tissues. The ability to use scales confers several advantages for future examinations of striped bass harvest. Importantly, most states already collect many scale samples, thus GSI analysis would integrate well into current collecting protocols. These existing sampling programs and potential archived samples will allow our methods to be easily expanded in the future to important areas like the Chesapeake Bay, Delaware Bay, and Hudson River estuary. All of these estuaries have resident populations and understanding the fluctuations in resident and coastal population segments, as well as potential for difference in mixed stock contributions to fisheries seasonally, are important factors in striped bass management. Existing scale collections also have the potential to be used for retrospective analyses to answer many pertinent management issues if agencies have archived uncleaned scales. This information could help inform managers on how the overall stock has responded to large scale climactic forcing, how the productivity of individual estuaries has influenced coastal fisheries over the past several decades, fluctuations in population level contributions to specific fisheries seasonally, and potentially how stocks have diverged since widespread stocking in the late 1800s. Finally, many volunteer angler groups already collect scale samples for state agencies or academic institutions. Scale collection protocols have a wide acceptance and use in the angling community and should be a productive source of genetic samples without the need for educating the public about new collection methods. These provide numerous citizen science opportunities for future work.

The proposed project is complementary to current biological as well as catch and effort sampling programs. The preferred method of collecting of tissue samples for GSI, typically dried fin clips, is simple and quick. Adding sample collection to current fishery dependent and independent sampling is easily accomplished and little different than collecting scale samples. As discussed above, scale samples can be used in many situations if necessary. Thus, the biological data collected and the interface between that data and catch and effort data that already exists, can be easily and directly paired with GSI results to better understand biological factors that influence population specific migration and residence in coastal waters as well as the proportionality of catch and effort on populations.

Data Delivery Plan: The proposed project will include plans for the creation of data formatting for delivery into relevant ACCSP Biological Data Modules on an annual basis by any partner who conducts GSI sampling in the future. Wherever possible, population assignment data will be paired with all biological data (i.e., total length, age) and metadata (e.g., capture date, capture location, fishery type) from assigned individuals, allowing for analysis of biological indicators of stock composition. The potential for data generated by this project to be compatible with current Catch and Effort Data housed by ACCSP exists and can be investigated in the future.

Approach: Fisheries dependent samples consisting of fin clips and scales from mixed stock fisheries in the waters off Massachusetts were collected in the summers of 2015 through 2020 (Fig. 3). Fin clips from striped bass landed in the commercial fishery were collected via portside sampling by Massachusetts Division of Marine Fisheries (MADMF) staff. Fin clips or scales were collected from recreationally caught striped bass by MADMF staff or participants in MADMF voluntary Sportfish Angler Data Collection Team program. Samples from Long Island Sound will be collected in the summer of 2020 by Connecticut Department of Energy and Environmental Protection (CTDEEP) Long Island Sound Trawl Survey. These will be fishery independent samples, but they are assumed to be reflective of striped bass available to local fisheries by the ASMFC. All samples were collected using established protocols to preserve DNA in samples and avoid cross-contamination during collection. No archived samples will be used in this study, but the methods developed and shared will allow future work to be conducted using archived materials.

In collaboration, the project partners will assess the ability of the GT-seq panel of baseline populations to be accurately identified in GSI applications using the most robust methods developed by Pacific salmon researchers at Alaska Department of Fish and Game (ADFG), who will participate in the analyses. We will perform GSI with models with mixed stock striped bass implemented in the R package *rubias* (Moran and Anderson 2019). We will use the conditional model in *rubias*, with fixed allele frequencies in the reference (baseline) samples to obtain an initial estimate of mixture proportions for each sample. We will then use these initial mixture proportion estimates as priors for the full Bayesian model in *rubias*, which is more time intensive because allele frequencies are updated at each step in the MCMC chain. This combined approach performed best in a comprehensive evaluation of GSI methods (Habicht et al. 2007). Posterior distributions from the Bayesian model will provide stock composition estimates. Results will be summarized by the mean, median, and posterior quantiles of posterior distributions from BAYES.

We will assess GSI performance using proof tests (Habicht et al. 2010). Proof tests will be implemented by creating training and holdout sets of individuals. The training group will incorporate 50 striped bass per spawning population. GSI tests will use the training set as the baseline, with an additional 50 individuals per baseline population as “unknown”. The holdout group “unknowns” will be analyzed as a mixture sample initially with the conditional model in *rubias*, with the rebuilt data set as the baseline. Mixture proportion estimates from the conditional model in *rubias* will serve as a prior for the Bayesian model in *rubias*. We will consider a baseline population as ‘identifiable’ if the 90% credible interval exceeds 90% correct allocation in the proof test. This approach of a training and hold out data set is similar to the rigorous approach used by Koljonen et al. (2005), which they termed a ‘repeat baseline test’. Accuracy for both stock composition and individual assignment will be noted for both overall and population-specific performance.

Individual assignment tests will be used to estimate the origin of each fish in the fishery sample. We will use the likelihood and Bayesian approach implemented in the R package *rubias* (Moran and Anderson 2019) to assign individuals in the mixture sample to the baseline population with the highest probability of producing the given genotype in the mixture. Thus, genotype frequencies and mixture proportions are used to estimate the origin of individuals. This method is different from other assignment tests because it takes estimated mixture proportions into account and therefore is most appropriate for use in mixed-stock fishery context. We will conservatively use an assignment probability cutoff of 0.95 for further analysis of fish assigned to either stock.

We will use a jackknife approach, referred to as the “leave one out” test in the GSI literature, to evaluate the accuracy of assignment tests, as implemented in *rubias*. Each fish in each baseline population will be sequentially removed from the baseline and its origin estimated using the rest of the baseline. Individuals with complete genotypes at greater than 90% of loci will be included in the analysis. We will also perform realistic fishery simulations of various mixture proportions of fish from baseline populations to test how well the baseline data can identify the origin of each individual.

Following all GSI analyses, the project partners and CTDEEP will perform power analyses to examine the effects of factors such as overall sample size, seasonality, fish age, and fish length on results. These sensitivity analyses will be incorporated into a report describing the sampling protocols, the GT-seq panel, and GSI analytical methods to create recommendations for the creation of a coast-wide biological sampling program. The project partners anticipate that this program will complement current fisheries independent and dependent biological sampling completed by states in the migratory range of striped bass. The methods and results will also be prepared in manuscript format and submitted to an open-access peer-reviewed journal so that they are widely available to all interested parties. All genomic information will be made available in a Dryad repository or similar online storage and access warehouse.

Geographic Location: Over 5,000 striped bass tissue samples have been collected from Massachusetts state waters since 2015. CTDEEP will collect 200 samples from Long Island Sound in the fall of 2020. Sample processing will be completed by Dr. Scott Pavey, an international partner, at the University of New Brunswick – Saint John, Canada. Data analysis will be performed in Gloucester, Massachusetts, Missoula, Montana, and Anchorage, Alaska by all project partners. Report and manuscript preparation will occur in Gloucester, Massachusetts with contributions from all project partners, including CTDEEP. The project investigators believe that if travel can safely be performed to work in collaboration and attend meetings that the project will be conducted more efficiently. However, if travel costs or COVID-19 related safety measures prevent travel, meetings and collaborative work can be accomplished remotely.

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
Sample processing													
Genomic Stock Identification													
Sensitivity analyses for sampling protocols													
Manuscript and report writing													

Project Accomplishments Measurement:

Project Goal	Measure of Accomplishment
Sample processing	DNA extraction and preparation for sequencing of 5,000 tissues samples.
Genomic Stock Identification	Analysis of all 5,000 samples and assignment back to spawning population using <i>rubias</i> and other applicable programs.
Sensitivity analyses for sampling protocols	Use analyzed data to create recommendations for sampling levels and frequency to accurately describe mixed stock coastal fisheries.
Manuscript and report writing	Submit a manuscript to an open access, peer reviewed journal that includes the GT-seq panel, methodology, GSI analysis, and results. Create a report describing best practices and recommendations for sample collection design, sample processing and sequencing, and analysis.

Cost Summary:

ITEM	QUANTITY	UNIT PRICE	REQUEST	IN-KIND
MA DMF				
c. TRAVEL			\$4,467	\$365
Gahagan travel to Saint John (hotel, per diem, mileage) for six days			\$780	\$365
Gahagan travel to University of Montana (airfare, hotel, car rental, and per diem) for six days			\$1,538	
Gahagan travel to Anchorage, AK (airfare, hotel, car rental, and per diem) for seven days			\$2,149	
f. CONTRACTUAL			\$89,338	\$57,712
(University of New Brunswick - Saint John (UNB-STJ))			\$86,567	\$57,712
a. PERSONNEL			\$26,897	\$17,931
Lab Technician, monthly salary	6	\$4,482.80	\$26,897	
Lab Technician, monthly salary	4	\$4,482.80		\$17,931
b. FRINGE			\$3,093	\$2,062
Fringe Benefits at UNB-STJ rate	11.50%		\$3,093	
Fringe Benefits at UNB-STJ rate	11.50%			\$2,062
h. OTHER			\$49,080	\$32,720
DNA Extraction and GT-seq library construction	3000	\$16.36	\$49,080	
DNA Extraction and GT-seq library construction	2000	\$16.36		\$32,720
i. TOTAL UNB-STJ DIRECT COSTS			\$79,070	\$52,713
j. UNB-STJ INDIRECT (on salary and fringe)			\$7,497	\$4,998
k. UNB-STJ Total			\$86,567	\$57,712
University of Montana (Dr. Whiteley)			\$2,771	\$0
c. TRAVEL			\$1,885	
Dr. Whiteley (co-PI) travel to Anchorage, AK (airfare, hotel, per diem) for 6 days			\$1,885	
j. UNIVERSITY OF MONTANA INDIRECT			\$886	
k. University of Montana Total			\$2,771	\$0
h. OTHER			\$6,015	\$3,015
Open access publication costs	1	\$1,500	\$1,500	
Genetic sequencing for 1,000 samples	3	\$1,500	\$4,500	
Genetic sequencing quality control (\$15)	1	\$15	\$15	
Genetic sequencing for 1,000 samples	2	\$1,500		\$3,000
Genetic sequencing quality control (\$15)	1	\$15		\$15
i. TOTAL DIRECT COSTS			\$99,820	\$61,091
j. INDIRECT - MA DMF rate (on salary)			\$0	\$0
k. TOTAL REQUESTED			\$99,820	\$61,091
Total Project Cost			\$160,911	38%

MA Division of Marine Fisheries

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Cost Details (\$99,820 Requested; \$61,091 In-Kind):

c. Travel (\$4,467 Requested; \$365 In-Kind)

Travel costs are requested for three trips that will facilitate the processing and analysis of samples:

1. Benjamin Gahagan to the University of New Brunswick – Saint John (\$1,145): Mr. Gahagan will travel to co-PI Dr. Scott Pavey’s lab to help process samples, prepare libraries, and process data. He will drive a state vehicle to Saint John (810 miles @ \$0.45/mile; \$365 total in-kind) and stay in a hotel for five nights (\$120/night; total \$600). His meals stipend request (\$180) has been calculated at Mr. Gahagan’s union employee per diem rate of \$36/day for five days.
2. Benjamin Gahagan to the University of Montana (\$1,538): Mr. Gahagan will fly (\$450) to Bozeman, MT to work directly with co-PI Dr. Whiteley to prepare and analyze data using the *rubias* program. This trip will coincide with the annual ConGen conference at University of Montana where Mr. Gahagan will be able to interface and network with leaders in the conservation genetics and mixed stock assignment field while working directly with the project data. While in Montana, Mr. Gahagan will stay in a hotel for five nights (\$100/night; total \$500) and rent a car for transportation (six days at \$68/day; total \$408). His meals stipend request (\$180) has been calculated at Mr. Gahagan’s union employee per diem rate of \$36/day for five days.
3. Benjamin Gahagan to Anchorage, AK (\$2,149): Mr. Gahagan will fly from Boston, MA (\$525) to work directly with staff from the Alaska Department of Fish and Game’s Gene Conservation Laboratory (ADFG) to analyze data, correct any analytical issues, and help design sampling protocols. The staff of ADFG have extensive experience designing sampling programs and enacting genetic stock identification programs to monitor anadromous fisheries and their expertise will benefit this project. While in Anchorage, Mr. Gahagan will stay in a hotel for six nights (\$160/night; total \$960) and rent a vehicle for seven days (\$64/day; total \$448). Mr. Gahagan’s meals stipend request (\$216) has been calculated at Mr. Gahagan’s union employee per diem rate of \$36/day for six days.

f. Contractual (\$89,338 Requested; \$57,712 In-Kind)

University of New Brunswick – Saint John (\$86,567 Requested; \$57,712 In-Kind)

Processing and preparation of all samples will occur in the lab of Dr. Scott Pavey at University of New Brunswick – Saint John (UNB-STJ). This work will require six months of technician time, which are subject to UNB-STJ’s fringe (11.5%) and requested indirect (25.0%) rates (total technician cost = \$26,897 salary, \$3,093 fringe, and \$7,497 indirect). Other items that will be purchased by UNB-STJ include plates and reagents to prepare samples for high throughput sequencing (\$16.36 per sample for 3,000 samples; total of \$49,080) and are not subject to fringe or indirect costs. In FY 2021, MADMF has allocated money to pay Dr. Pavey’s lab to prepare 2,000 samples from the same pool of collected

tissues discussed in this grant. We are including the costs for four months of technician time at identical fringe and indirect rates (total technician cost = \$17,931 salary, \$2,062 fringe, and \$4,998 indirect) and other items (\$16.36 per sample for 2,000 samples; total of \$32,720) to process those samples as **in-kind** in this proposal. UNB-STJ's indirect rate agreement is attached for reference, which shows a higher rate than the requested 25% rate.

University of Montana (\$2,771 Requested; \$0 In-Kind)

Dr. Andrew Whiteley will accompany Mr. Gahagan to Anchorage, AK where they will work directly with staff from ADFG (see trip description above). Travel costs for Dr. Whiteley include a flight from Bozeman, MT (\$625) to Anchorage, AK, hotel stay for six nights (\$160/night; total \$960), and a per diem stipend of \$50/day for six days (\$300 total), which has been calculated based on the University of Montana's out-of-state rate. University of Montana applies a 47% indirect rate to all incoming funds. Their indirect rate agreement is attached for reference.

- h. Other (\$6,015 Requested; \$3,015 In-Kind)** The co-PIs will prepare results of the GT-Seq panel construction, GSI methodology, and results for publication in an open access, peer reviewed journal (\$1,500). This will maximize exposure of the project and make it completely accessible to any groups wishing to use it.

MADMF will also pay Genome Quebec for high throughput sequencing services and quality control measures. The cost for each lane of 1,000 samples in the sequencer is \$1,500 (\$4,500 total for 3,000 samples) and there is a onetime cost of \$15 for quality control measures when setting up the panel to be sequenced. We have included the cost of sequencing services for the 2,000 samples being prepared separately in FY 2021 as **in-kind** (\$3,015 = \$1500 x 2 lanes of samples + \$15 quality control measures).

- i. Direct (\$99,820 Requested; \$61,091 In-Kind)**
- j. Indirect (\$0 Requested; \$0 In-Kind)**
There are no indirect charges from MADMF in this proposal.
- k. Total Project Costs \$160,911 (\$99,820 Requested; \$61,091 In-Kind)**
Requested from ACCSP: 99,820 (62% of total costs)
MADMF in-kind: \$61,091 (38% of total costs)

Summary of Proposal for Ranking Purposes

Proposal Type: *New Project*

Primary Program Priority:

Biological Sampling (100%): This proposal focuses on the creation of a biological sampling program that uses genomic data to assign striped bass caught in mixed stock coastal fisheries back to spawning populations. Data generated will be reviewed for compatibility with the ACCSP Biological Data Module and a plan to add this type of data will be investigated.

Project Quality Factors:

Multi-Partner/Regional impact including broad applications:

This project is collaboration between state agencies and multiple academic institutions over a broad area. The broader work in the project stretches across jurisdictions. Connecticut Department of Energy and Environmental Protection will provide mixed stock samples from Long Island Sound to compare to those collected in coastal Massachusetts. The project is supported by other agencies with management authority over striped bass as evidenced by two letters of support from Northeast partners. The results will have range-wide applicability and can be used by any interested and capable group.

Contains funding transition plan/defined end-point:

This is a one-year project with a defined end goal. The goal is to create genomic based method to assign striped bass caught in coastal fisheries to a spawning population and provide recommendations for a coast-wide sampling program.

In-kind contribution:

This proposal includes \$61,091 of in-kind funding which equates to 38% of the total budget.

Improvement in data quality/quantity/timeliness:

Providing spawning population assignment for coastal mixed stock striped fisheries would provide a new and important data stream for management and stock assessment.

Potential secondary module as a by-product:

Catch and effort: This proposal focuses on the creation of stock identification data that could be integrated with catch and effort data already collected by ACCSP.

Bycatch/Species Interactions: This proposal focuses on the creation of stock identification data that can be used to assign striped bass caught as bycatch in many fisheries identified in the Bycatch Priority Matrix.

Impact on stock assessment:

The genetic stock identification tool proposed here directly answers the recognized need for a method to partition coastal mortality of striped bass that has been pointed out in recent stock assessments. This proposal would allow future stock assessments to cease managing coastal striped bass as a

separate stock and instead allow them to manage striped bass on a population by population basis, the preferred method for mixed stock fisheries.

Innovative:

SNP based GSI, a proven technique in mixed stock fisheries for migratory anadromous fish, has not been completed for striped bass. This project will provide the opportunity to apply innovative technology that will benefit the resource, management, and fishery participants.

Properly prepared:

This project has been prepared as per the Funding Decision Document.

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Atlantic Coastal Cooperative Statistics Program

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June 15, 2020

To the members of the Operations and Advisory Committees:

The FY2021 Administrative Budget contains a few changes. The position of Deputy Director was created by the hiring panel in Fall of 2019. Also, the budget includes an option with additional funding for personnel in the form of a Software Developer. Supplemental justification for these personnel changes is attached as an appendix to this cover letter.

The ASMFC average rate for meetings has increased from \$260 to \$275; however, the total cost of meetings remains consistent due to adjustments to reduce the number of in-person meetings. Additionally, the ASMFC has slightly increased its overhead rate from 16.13% to 16.71%.

Attachment I of the FY2021 Administrative Budget request, the 2019 ASMFC Strategic Plan (Goal 3), provides an overview of the high level tasks and milestones expected for the coming year.

Sincerely,

Geoff White

ACCSP Director



Atlantic Coastal Cooperative Statistics Program

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Appendix I: Justification for personnel changes

Deputy Director/Data Team Lead

The current Data Team Lead was promoted to Deputy Director, a position created by the hiring panel in the Fall of 2019. In an effort to provide consistency during the administrative transition, it was determined that the soundest way forward for the Program and staff was to backfill the Recreational Team Lead and fully staff the Data Team prior to replacing the Data Team Lead. In the interim a single person has been covering both Deputy Director and Data Team Lead positions. The Program is now beyond the transition phase and needs to fill the position of the Data Team Lead in FY2021.

Additional Software Developer

The continued success of the ACCSP and the demand for SAFIS software in recent years has resulted in an increase in the resources needed for software development. The growth of the program and expansion of electronic reporting on the Atlantic coast intensifies the need for not just software maintenance, but also for development of new and more flexible features that meet the needs of partners. There is increasing demand for electronic reporting solutions that meet the needs of multiple partners through a single report and reduce the reporting burden on industry. Providing online and mobile tools with consistent data collection fields on compatible timelines is critical to the success of the Program. Current levels of staffing are strained under the continuing increase, which results in more reliance on contract support.

An additional staff member on the Software Team will economically bring more development capability on staff, supporting more maintenance and development of ACCSP software relative to outside contracts.

Funding Proposal
FY21 ACCSP Administrative Budget

Applicant Name: Atlantic States Marine Fisheries Commission

Project Title: Administrative Support to the Atlantic Coastal Cooperative Statistics Program

Principal Investigator: Geoff White, Director, ACCSP

Requested Award Amount: \$2,208,056 (Option 1) or \$2,170,067 (Option 2)

Request Type: Maintenance/Administrative

Requested Award Period: March 1, 2021 through February 28, 2022

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 collection 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

1. Manage and expand a fully integrated data set that represents the best available fisheries-dependent 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 and dealers 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 would 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. In October of 2016, an [updated MOU](#) was approved that made the ACCSP a program of the ASMFC. This governance change integrates the long-term and annual planning processes with those already in existence for the ASMFC and conform to policy as set by the ACCSP Coordinating Council.

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 almost a 70 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 \(SAFIS\)](#) Electronic Dealer Reports (eDR) was deployed, followed in 2008, by Electronic Trip Reports (eTRIPS). 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.

Goal 3 of the ASMFC Strategic Plan (Attachment I) details activities to be conducted by ACCSP staff and committees under the FY21 Administrative Budget. Note that program activities and staff 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 comprised 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 Deputy Director supports the ACCSP Director on operation and development of the Program and is responsible for managing the competitive ACCSP funding process, coordinating cross-team project management, and providing support for a wide range of Program activities. The ACCSP Program Assistant provides assistance to the ACCSP Director and ACCSP Deputy Director, provides staff support for program and technical committees by drafting, maintaining and coordinating program documents, and publicizes the availability and benefits of the Program. The Software Team Leader coordinates the development and management of ACCSP data collection systems. The ACCSP IT Manager manages the information systems infrastructure and security. The Data Team Leader provides guidance for data compilation and dissemination related activities. The Recreational Team Lead coordinates MRIP survey implementation and recreational and for-hire data standards. The Data Coordinators and Developers 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 complete custom data requests, QAQC existing data, maintain data feeds, and directly participate in data intensive activities such as a stock assessment data workshops. The Software Team staff provides expert consultation to partners as they implement new reporting, and licensing/permitting systems. The Software Team will continue to support development of SAFIS.

ACCSP staff will follow Goal 3 of the ASMFC 2019 Strategic Plan during FY21, 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; implement dealer reporting component of SAFIS redesign maintenance of Federal Information Security Management Act procedures;; and support of other partner projects 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 Recreational Technical Committee, the Commercial Technical Committee, the Information Systems Committee, the Biological Review Panel, the Bycatch Prioritization Committee, the Standard Codes Committee. 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 and maintained 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); systems are being developed for coordination with Gulf of Mexico

2. Milestone Schedule: See Goal 3 of the ASMFC 2019 Strategic 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 1999-2020

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
2019	\$1,816,503	9.5
2020	\$2,012,744	11

3. Cost Summary: The ACCSP requests \$1,896,317 (Option 1) or \$1,863,767 (Option 2) for administrative support, committee travel and systems operations during FY21. The addition of the 16.71% overhead rate raises the request to \$2,213,191 (Option 1) or \$2,175,202 (Option 2).

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 Recreational Team Lead, are dedicated 100% to the ACCSP and are full-time employees of the Atlantic States Marine Fisheries Commission. Note that personnel associated with the MRIP state conduct and 85% of the

Recreational Team Leader are funded under separate authority and not accounted for in this document. Fringe benefits which include health care, vision, dental, annual and sick leave are calculated at 27%. ASMFC salaries are kept confidential, thus only totals are displayed. Additionally, an agreement has been put in place with NMFS Highly Migratory Species (HMS) to partially fund the Information Systems Specialist responsible for maintaining HMS data feeds. The addition of a software development position would transition some contract support for mobile software maintenance to staff role.

- ACCSP Director - Geoff White
- ACCSP Deputy Director – Julie Defilippi Simpson
- Program Assistant – Marisa Powell
- ACCSP IT Manager and Software Developer – Edward Martino
- Recreational Team Lead (15%) – Alex DiJohnson
- Software Team Lead - Karen Holmes
- Senior Software Developer – Nicolas Mwai
- Software Developer – VACANT (**OPTION 1 ONLY**)
- Data Team Lead – Julie Defilippi Simpson (To be backfilled in 2021)
- Data Analyst - Jennifer Ni
- Senior Data Coordinator – Joseph Myers
- Senior Data Coordinator – Heather Konell
- Data Coordinator – Michael Rinaldi
- Data Coordinator – Lindsey Aubart

Salaries and Wages	Option 1	Option 2
Total Salary	\$1,229,993	\$1,164,993
Benefits @27%	\$332,098	\$314,548
Total Costs	\$1,562,091	\$1,479,541

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 site, 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 ASMFC average estimated \$275 per day multiplied by meetings multiplied by days multiplied by non-federal membership plus staff.

Committee Travel	Meetings	Days	Membership	Total	Staff	Total	Grand Total
Biological Review panel	1	1.5	15	\$6,188	1	\$413	\$6,600
Bycatch Prioritization	1	1	15	\$4,125	1	\$275	\$4,400
Commercial Technical Committee	1	2	15	\$4,125	1	\$550	\$4,400
Coordinating Council (with ASMFC)	3	0.5	12	\$4,950	2	\$825	\$5,775
Operations and Advisory Committees	2	2	20	\$22,000	2	\$2,200	\$24,200
Recreational Technical	1	2	15	\$8,250	1	\$550	\$8,800
Information Systems Committee	1	1	15	\$4,125	1	\$275	\$4,400
Total Committees				\$57,888		\$5,088	\$62,975
Staff Travel							
Partner Coordination	5	2	2	\$5,500			
Data Support (Stock Assessment etc.)	1	5	2	\$2,750			
IT Support	3	1	1	\$825			
Outreach	2	2	1	\$1,100			
GulfFIN Coordination	2	1.5	1	\$825			
SAFIS Support/Training	4	1	4	\$4,400			
Total Staff Travel				\$15,400			
Grand Total							\$73,975

* The Commercial Technical Committee will only meet for 1 day rather than 2.

Attachment II provides the FY20 schedule of the funding cycle and calendar of meetings, which serves as a tentative schedule for FY21.

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	
Misc Hardware (cables, network hubs etc)	\$4,651
Backup Tapes	\$1,000
Total	\$5,651

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.

Equipment	
Infrastructure Replacements (servers, UPS systems, etc.)	\$18,000
Desktop/Laptop Systems	\$4,500
Total	\$22,500

8. Other Costs

Hardware and software support are supplied by a number of different vendors and includes costs associated with licensing and maintenance fees (such as *Oracle* licensing).

The Program maintains two high speed internet connections and associated infrastructure in support of the server systems. The primary internet connection is covered by ASMFC. The first ACCSP funded connection 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 and pending management actions mandate electronic reporting. 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 includes 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. With increases to mandatory electronic federal reporting in 2021 additional helpdesk support is anticipated.

Other Expenses	Option 1	Option 2
Software License Support	\$60,000	\$60,000
Hardware Support	\$7,500	\$7,500
Communications/ Internet Connectivity	\$22,700	\$22,700
Printing (outreach)	\$2,500	\$2,500
Software Development	\$75,000	\$125,000
Help Desk Support	\$60,000	\$60,000
Total	\$227,700	\$277,700

Budget Summary

	2021 (Option 1)	2021 (Option 2)
Personnel	\$1,229,993	\$1,164,993
Fringe Benefits	\$332,098	\$314,548
Travel	\$73,975	\$73,975
Equipment	\$22,500	\$22,500
Supplies	\$5,651	\$5,651
Other	\$227,700	\$277,700
Total Program	\$1,896,317	\$1,863,767
ASMFC Overhead 16.71%	\$316,874	\$311,435
Total Proposal	\$2,208,056	\$2,170,067

Resources actively sought to support full range of ACCSP activities in addition to the ADMIN Grant

2021 Support	Coverage	Funding Expected
GARFO (for FISMA)	Partial IT Manager & Contracts for ongoing monitoring and reviews	\$ 125,000
HMS	Partial Data Analyst	\$ 40,000
FIS Quality Management FY21 Proposal	Atlantic Coast Project Scoping for Implementation of Automated Data Auditing Validation for Electronic Logbooks	\$ 77,000
FIS FIN Development FY21 Proposal	Continued Development and Enhancement to the ACCSP Online Data Query Tool and the ACCSP Assignment Tracking Application	\$ 181,500
MRIP	State Conduct of MRIP APAIS, FHTS ME-GA, and additional surveys in some states (LPIS in ME, Catch Cards in MD & NC, and LPBS in NC). Includes Recreational Team Staff (4).	\$ 5,781,554 * Majority of funds passed on to States

ATLANTIC STATES MARINE FISHERIES COMMISSION

Five-Year Strategic Plan 2019-2023



*The nation behaves well if it treats the natural resources
as assets which it must turn over to the next generation
increased and not impaired in value.*

Theodore Roosevelt

Introduction

Each state has a fundamental responsibility to safeguard the public trust with respect to its natural resources. Fishery managers are faced with many challenges in carrying out that responsibility. Living marine resources inhabit ecosystems that cross state and federal jurisdictions. Thus, no state, by itself, can effectively protect the interests of its citizens. Each state must work with its sister states and the federal government to conserve and manage natural resources.

Beginning in the late 1930s, the 15 Atlantic coastal states from Maine to Florida took steps to develop cooperative mechanisms to define and achieve their mutual interests in coastal fisheries. The most notable of these was their commitment to form the Atlantic States Marine Fisheries Commission (Commission) in 1942, and to work together through the Commission to promote the conservation and management of shared marine fishery resources. Over the years, the Commission has remained an effective forum for fishery managers to pursue concerted management actions. Through the Commission, states cooperate in a broad range of programs including interstate fisheries management, fisheries science, habitat conservation, and law enforcement.

Congress has long recognized the critical role of the states and the need to support their mutual efforts. Most notably, it enacted the Atlantic Coastal Fisheries Cooperative Management Act (Atlantic Coastal Act) in 1993, which built on the success of the Atlantic Striped Bass Conservation Act of 1984. Acknowledging that no single governmental entity has exclusive management authority for Atlantic coastal fishery resources, the Atlantic Coastal Act recognizes the states' responsibility for cooperative fisheries management through the Commission. The Atlantic Coastal Act charges all Atlantic states with implementing coastal fishery management plans that will safeguard the future of Atlantic coastal fisheries in the interest of both fishermen and the nation.

Accepting these challenges and maintaining their mutual commitment to success, the Atlantic coastal states have adopted this five-year Strategic Plan. The states recognize circumstances today make the work of the Commission more important than ever before. The Strategic Plan articulates the mission, vision, goals, and objectives needed to accomplish the Commission's mission. It serves as the basis for annual action planning, whereby Commissioners identify the highest priority issues and activities to be addressed in the upcoming year. With 27 species currently managed by the Commission, finite staff time, Commissioner time and funding, as well as a myriad of other factors impacting marine resources (e.g., changing ocean conditions, protected species interactions, offshore energy, and aquaculture), Commissioners recognize the absolute need to prioritize activities, dedicating staff time and resources where they are needed most and addressing less pressing issues as resources allow. Efforts will be made to streamline management by using multi-year specifications where possible and increase stability/predictability in fisheries management through less frequent regulatory changes. A

key to prioritizing issues and maximizing efficiencies will be working closely with the three East Coast Regional Management Councils and NOAA Fisheries.

Mission

The Commission's mission, as stated in its 1942 Compact, is:

To promote the better utilization of the fisheries, marine, shell and anadromous, of the Atlantic seaboard by the development of a joint program for the promotion and protection of such fisheries, and by the prevention of physical waste of the fisheries from any cause.

The mission grounds the Commission in history. It reminds every one of the Commission's sense of purpose that has been in place for over 77 years. The constantly changing physical, political, social, and economic environments led the Commission to restate the mission in more modern terms:

To promote cooperative management of marine, shell and diadromous fisheries of the Atlantic coast of the United States by the protection and enhancement of such fisheries, and by the avoidance of physical waste of the fisheries from any cause.

The mission and nature of the Commission as a mutual interstate body incorporate several guiding principles. They include:

- States are sovereign entities, each having its own laws and responsibilities for managing fishery resources within its jurisdiction
- States serve the broad public interest and represent the common good
- Multi-state resource management is complex and dependent upon cooperative efforts by all states involved
- The Commission provides a critical sounding board on issues requiring cross-jurisdictional action, coordinating cooperation, and collaboration among the states and federal government

Vision

The long-term vision of the Commission is:

Sustainable and Cooperative Management of Atlantic Coastal Fisheries

Values

The Commission and its member states have adopted the following values to guide its operations and activities. These values affirm the Commission's commitment to sustainable

fisheries management for the benefit of recreational and commercial fishermen and coastal communities. They also acknowledge the growing importance of managing fisheries in a more holistic and adaptive way, seeking solutions to cross cutting resource issues that lead to long-term ecological and socio-economic sustainability.

- Effective stewardship of marine resources through strong partnerships
- Decisions based on sound science
- Long-term ecological sustainability
- Transparency and accountability in all actions
- Timely response to new information through adaptive management
- Balancing resource conservation with the economic success of coastal communities
- Efficient use of time and fiscal resources
- Work cooperatively with honesty, integrity, and fairness

Driving Forces

The Commission and its actions are influenced by a multitude of factors. These factors are constantly evolving and will most likely change over the time period of this Strategic Plan. However, the most pressing factors affecting the Commission today are changing ocean conditions, resource allocation, the quality and quantity of scientific information, competing ocean uses, a growing demand to address ecosystem functions, and interactions between fisheries and protected species. The Strategic Plan, through its goals and broad objectives, will seek to address each of these issues over the next five years.

Changing Ocean Conditions

Changes in ocean temperature, currents, acidification, and sea level rise are affecting nearly every facet of fisheries resources and management at the state, interstate, and federal levels. Potential impacts to marine species include prey and habitat availability, water quality, susceptibility to disease, and spawning and reproductive potential. The distribution and productivity of fishery stocks are often changing at a rate faster than fisheries stock assessments and management can keep pace with. Several Commission species, such as northern shrimp, Southern New England lobster, Atlantic cobia, black sea bass, and summer flounder are already responding to changes in the ocean. In the case of northern shrimp and Southern New England lobster, warming ocean waters have created inhospitable environments for species reproduction and survivability. For cobia, black sea bass, and summer flounder, changing ocean conditions have contributed to shifts in species distributions, with some species expanding their ranges and others moving into deeper and/or more northern waters to stay within preferred temperature ranges. Where shifts are occurring, the Commission may need to reconsider state-by-state allocation schemes and make adjustments to our fishery management plans. For other species depleted due to factors other than fishing mortality (e.g., habitat degradation and availability, predation), the states will need to explore steps that can be taken to aid in species recovery. And, if a stock's viability is compromised, Commission resources and

efforts should be shifted to other species that can be recovered or maintained as a rebuilt stock.

Allocation

As noted above, resource allocation among the states and between various user groups will continue to be an important issue over the next five years. Many of the Commission FMPs divvy up the available harvestable resource through various types of allocation schemes, such as by state, region, season, or gear type. The changing distribution of many species has further complicated the issue of resource allocation with traditional allocation schemes being challenged and a finite amount of fishery resources to be shared. Discussion may be difficult and divisive, with some states (and their stakeholders) wanting to maintain their historic (traditional) allocations, while others are seeking a greater share of the resource given increased abundance and availability in their waters. States will need to seek innovative ways to reallocate species so that collectively all states feel their needs are met. What will be required to successfully navigate these discussions and decisions is the commitment of the states to work through the issues with honesty, integrity, and fairness, seeking outcomes that balance the needs of the states and their stakeholders with the ever changing realities of shifting resource abundance and availability.

Science as the Foundation

Accurate and timely scientific information form the basis of the Commission's fisheries management decision-making. Continued investments in the collection and management of fishery-dependent and -independent data remain a high priority for the Commission and its member states. The challenge will be to maintain and expand data collection efforts in the face of shrinking state and federal budgets. Past and current investments by state, regional and federal partners of the Atlantic Coastal Cooperative Statistics Program (ACCSP) have established the program as the principal source of marine fishery statistics for the Atlantic coast. State and regional fishery-independent data collection programs, in combination with fishery statistics, provide the scientific foundation for stock assessments. Many data collection programs will continue to be strained by budget restrictions, scientists' workload capacities, and competing priorities. The Commission remains committed to pursuing long-term support for research surveys and monitoring programs that are critical to informing management decisions and resource sustainability.

Ecosystem Functions

Nationally, there has been a growing demand for fisheries managers to address broader ecosystem functions such as predator-prey interactions and environmental factors during their fisheries management planning. Ecosystem science has improved in recent years, though the challenges of comprehensive data collection continue. A majority of the Commission's species are managed and assessed on a single species basis. When ecosystem information is available, the Commission has managed accordingly to provide ecosystem services. The Commission remains committed to seeking ecological sustainability over the long-term through continuing its work on multispecies assessment modeling and the development of ecosystem-based reference points in its fisheries management planning process.

Competing Ocean Uses

Marine spatial planning has become an increasingly popular method of balancing the growing demands on valuable ocean resources. More specifically, the competing interests of commercial and recreational fishing, renewable energy development, aquaculture, marine transportation, offshore oil exploration and drilling, military needs, and habitat restoration are all components that must be integrated into successful ocean use policies. The Commission has always emphasized cooperative management with our federal partners; however, the states' authorities in their marine jurisdictions must be preserved and respected. The Commission will continue to prioritize the successful operation of its fisheries, but it will be imperative to work closely with federal, state, and local governments on emerging ocean use conflicts as they diversify into the future.

Protected Species

Like coastal fishery resources, protected species, such as marine mammals, sea turtles, and listed and candidate fish species, traverse both state and federal waters. The protections afforded these species under the Marine Mammal Protection Act and Endangered Species Act can play a significant role in the management and prosecution of Atlantic coastal fisheries. The Commission and the states have a long history of supporting our federal partners to minimize interactions with and bycatch of marine mammals and sea turtles. The listing of Atlantic sturgeon under the Endangered Species Act has added a whole new level of complexity in the ability of the Commission and its member states to carry out their stewardship responsibilities for these important diadromous species. The species spends the majority of its life in state waters and depend on estuarine and riverine habitat for their survival. Listing has the potential to jeopardize the states' ability to effectively monitor and assess stock condition, as well as impact fisheries that may encounter listed species. It is incumbent upon the Commission and its federal partners to work jointly to assess stock health, identify threats, and implement effective rebuilding programs for listed and candidate species.

More recently, the depleted status of the Northern right whale population and the potential impacts to this population by entanglement in fishing gear, particularly lobster and crab gear, has heightened concern for both whales and the lobster industry.

Increased Cooperation and Collaboration among the States and between the States and Our Federal Partners

Demands for ecosystem-based fisheries management, competing and often conflicting ocean uses, and legislative mandates to protect marine mammals and other protected species, further complicate fisheries management and require quality scientific information to help guide management decisions. There is a growing concern among fishery managers that some "control" over fisheries decisions and status has been diminished due to political intervention and our inability to effect changing ocean conditions and other environmental factors that impact marine resources. Fisheries management has never been more complex or politically charged. State members are pulled between what is best for their stakeholders versus what is best for the resource and the states as a whole.

While the issues may seem daunting, they are not insurmountable. In order for the Commission to be successful, the states must recommit to their collective vision of “Sustainable and Cooperative Management of Atlantic Coastal Fisheries,” recognizing that their strength lies in working together to address the fisheries issues that lie ahead. Given today’s political and environmental realities, the need for cooperation among the states has never been more important. It is also critical the states and their federal partners seek to strengthen their cooperation and working relationships, providing for efficient and effective fisheries management across all agencies. No one state or federal agency has the resources, authority, or ability to do it alone.

GOALS & OBJECTIVES

The Commission will pursue the following eight goals and their related strategies during the five-year planning period, from 2019 through 2023. It will pursue these goals through specific objectives, targets, and milestones outlined in an annual Action Plan, which is adopted each year at the Commission’s Annual Meeting to guide the subsequent year’s activities. Throughout the year, the Commission and its staff will monitor progress in meeting the Commission’s goals, and evaluate the effectiveness of the strategies. While committed to the objectives included in this plan, the Commission is ready to adopt additional objectives to take advantage of new opportunities and address emerging issues as they arise.

Goal 1 - Rebuild, maintain, fairly allocate, and promote sustainable Atlantic coastal fisheries

Goal 1 focuses on the responsibility of the states to conserve and manage Atlantic coastal fishery resources for sustainable use. Commission members will advocate decisions to achieve the long-term benefits of conservation, while balancing the socio-economic interests and needs of coastal communities. Inherent in this is the recognition that healthy and vibrant resources benefit stakeholders. The states are committed to proactive management, with a focus on integrating ecosystem services, socio-economic impacts, habitat issues, bycatch and discard reduction measures, and protected species interactions into well-defined fishery management plans. Fishery management plans will also address fair allocation of fishery resources among the states. Understanding changing ocean conditions and their impact on fishery productivity and distribution is an elevated priority. Successful management under changing ocean conditions will depend not only on adjusting management strategies, but also in reevaluating and revising, as necessary, the underlying conservation goals and objectives of fishery management plans. Improving cooperation and coordination with federal partners and stakeholders can streamline efficiency, transparency, and, ultimately, success. In the next five years, the Commission is committed to ending overfishing and working to rebuild overfished Atlantic coast fish stocks, while promoting sustainable harvest of and access to rebuilt fisheries. Where possible, the Commission will seek to aid in the rebuilding of depleted stocks, whose recovery is hindered by factors other than fishing pressure.

Annual action planning will be guided by the following objectives:

- Manage interstate resources that provide for productive, sustainable fisheries using sound science
- Strengthen state and federal partnerships to improve comprehensive management of shared fishery resources
- Adapt management to address emerging issues
- Practice efficient, transparent, and accountable management processes
- Evaluate progress towards rebuilding fisheries
- Promote sustainable harvest of and access to rebuilt fisheries
- Strengthen interactions and input among stakeholders, technical, advisory, and management groups

Goal 2 – Provide sound, actionable science to support informed management actions

Sustainable management of fisheries relies on accurate and timely scientific advice. The Commission strives to produce sound, actionable science through a technically rigorous, independently peer-reviewed stock assessment process. Assessments are developed using a broad suite of fishery-independent surveys and fishery-dependent monitoring, as well as research products developed by a broad network of fisheries scientists at state, federal, and academic institutions along the coast. The goal encompasses the development of new, innovative scientific research and methodology, and the enhancement of the states' stock assessment capabilities. It provides for the administration, coordination, and expansion of collaborative research and data collection programs. Achieving the goal will ensure sound science is available to serve as the foundation for the Commission's evaluation of stock status and adaptive management actions.

Annual action planning will be guided by the following objectives:

- Conduct stock assessments based on comprehensive data sources and rigorous technical analysis;
- Characterize the risk and uncertainty associated with the scientific advice provided to decision-makers
- Provide training to enhance the expertise and involvement of state and staff scientists in the development of stock assessments
- Streamline data assimilation within individual states, and among states and ASMFC
- Proactively address research priorities through cooperative state and regional data collection programs and collaborative research projects, including stakeholder involvement
- Explore the use of new technologies to improve surveys, monitoring, and the timeliness of scientific products
- Promote effective communication with stakeholders to ensure on-the-water observations and science are consistent

- Utilize ecosystem and climate science products to inform fisheries management decisions

Goal 3 - Produce dependable and timely marine fishery statistics for Atlantic coast fisheries

Effective management depends on quality fishery-dependent data and fishery-independent data to inform stock assessments and fisheries management decisions. While Goal 2 of this Action Plan focuses on providing sound, actionable science and fishery-independent data to support fisheries management, Goal 3 focuses on providing timely, accurate catch and effort data on Atlantic coast recreational, for-hire, and commercial fisheries.

Goal 3 seeks to accomplish this through the activities of the Atlantic Coastal Cooperative Statistics Program (ACCSP), a cooperative state-federal program that designs, implements, and conducts marine fisheries statistics data collection programs and integrates those data into data management systems that will meet the needs of fishery managers, scientists, and fishermen. ACCSP partners include the 15 Atlantic coast state fishery agencies, the three Atlantic Fishery Management Councils, the Potomac River Fisheries Commission, NOAA Fisheries, and the U.S. Fish and Wildlife Service.

Annual action planning will be guided by the following objectives:

- Focus on activities that maximize benefits, are responsive and accountable to partner and end-user needs, and are based on available resources.
- Cooperatively develop, implement, and maintain coastwide data standards through cooperation with all program partners
- Provide electronic applications that improve partner data collection
- Integrate and provide access to partner data via a coastwide repository
- Facilitate fisheries data access through an on-line, user-friendly, system while protecting confidentiality
- Support technological innovation

Goal 4 – Protect and enhance fish habitat and ecosystem health through partnerships and education

Goal 4 aims to conserve and improve coastal, marine, and riverine habitat to enhance the benefits of sustainable Atlantic coastal fisheries and resilient coastal communities in the face of changing ecosystems. Habitat loss and degradation have been identified as significant factors affecting the long-term sustainability and productivity of our nation's fisheries. The Commission's Habitat Program develops objectives, sets priorities, and produces tools to guide fisheries habitat conservation efforts directed towards ecosystem-based management.

The challenge for the Commission and its state members is maintaining fish habitat under limited regulatory authority for habitat protection or enhancement. Therefore, the Commission will work cooperatively with state, federal, and stakeholder partnerships to achieve this goal. Much of the work to address habitat is conducted through the Commission's Habitat and Artificial Reef Committees. In order to identify fish habitats of concern for Commission managed species, each year the Habitat Committee reviews existing reference documents for Commission-managed species to identify gaps or updates needed to describe important habitat types and review and revise species habitat factsheets. The Habitat Committee also publishes an annual issue of the *Habitat Hotline Atlantic*, highlighting topical issues that affect all the states.

The Commission and its Habitat Program endorses the National Fish Habitat Partnership, and will continue to work cooperatively with the partnership to improve aquatic habitat along the Atlantic coast. Since 2008, the Commission has invested considerable resources, as both a partner and administrative home, to the Atlantic Coastal Fish Habitat Partnership (ACFHP), a coastwide collaborative effort to accelerate the conservation and restoration of habitat for native Atlantic coastal, estuarine-dependent, and diadromous fishes. As part of this goal, the Commission will continue to provide support for ACFHP, under the direction of the National Fish Habitat Partnership Board.

Annual action planning will be guided by the following objectives:

- Identify fish habitats of concerns through fisheries management programs and partnerships
- Educate Commissioners, stakeholders, and the general public about the importance of habitat to healthy fisheries and ecosystems
- Better integrate habitat information and data into fishery management plans and stock assessments
- Engage local state, and regional governments in mutually beneficial habitat protection and enhancement programs
- Foster partnerships with management agencies, researchers, and habitat stakeholders to leverage scientific, regulatory, political, and financial support
- Work with ACFHP to foster partnerships with like-minded organizations at local levels to further common habitat goals

Goal 5 – Promote compliance with fishery management plans to ensure sustainable use of Atlantic coast fisheries

Fisheries managers, law enforcement personnel, and stakeholders have a shared responsibility to promote compliance with fisheries management measures. Activities under the goal seek to increase and improve compliance with fishery management plans. This requires the successful coordination of both management and enforcement activities among state and federal agencies. Commission members recognize that adequate and consistent enforcement of fisheries rules is required to keep pace with increasingly complex

management activity and emerging technologies. Achieving the goal will improve the effectiveness of the Commission's fishery management plans.

Annual action planning will be guided by the following objectives:

- Develop practical compliance requirements that foster stakeholder buy-in
- Evaluate the enforceability of management measures and the effectiveness of law enforcement programs
- Promote coordination and expand existing partnerships with state and federal natural resource law enforcement agencies
- Enhance stakeholder awareness of management measures through education and outreach
- Use emerging communication platforms to deliver real time information regarding regulations and the outcomes of law enforcement investigations

Goal 6 – Strengthen stakeholder and public support for the Commission

Stakeholder and public acceptance of Commission decisions are critical to our ultimate success. For the Commission to be effective, these groups must have a clear understanding of our mission, vision, and decision-making processes. The goal seeks to do so through expanded outreach and education efforts about Commission programs, decision-making processes, and its management successes and challenges. It aims to engage stakeholders in the process of fisheries management, and promote the activities and accomplishments of the Commission. Achieving the goal will increase stakeholder participation, understanding, and acceptance of Commission activities.

Annual action planning will be guided by the following objectives:

- Increase public understanding and support of activities through expanded outreach at the local, state, and federal levels
- Clearly define Commission processes to facilitate stakeholder participation, as well as transparency and accountability
- Strengthen national, regional, and local media relations to increase coverage of Commission actions
- Use new technologies and communication platforms to more fully engage the broader public in the Commission's activities and actions

Goal 7 – Advance Commission and member states' priorities through a proactive legislative policy agenda

Although states are positioned to achieve many of the national goals for marine fisheries through cooperative efforts, state fisheries interests are often underrepresented at the national level. This is due, in part, to the fact that policy formulation is often disconnected from the processes that provide the support, organization, and resources necessary to implement the policies. The capabilities and input of the states are an important aspect of

developing national fisheries policy, and the goal seeks to increase the states' role in national policy formulation. Additionally, the goal emphasizes the importance of achieving management goals consistent with productive commercial and recreational fisheries and healthy ecosystems.

The Commission recognizes the need to work with Congress in all phases of policy formulation. Several important fishery-related laws will be reauthorized over the next couple of years (i.e., Atlantic Coastal Act, Magnuson-Stevens Fishery Conservation and Management Act, Interjurisdictional Fisheries Act, Atlantic Striped Bass Conservation Act, and Anadromous Fish Conservation Act). The Commission will be vigilant in advancing the states' interests to Congress as these laws are reauthorized and other fishery-related pieces of legislation are considered.

Annual action planning will be guided by the following objectives:

- Increase the Commission's profile and support in the U.S. Congress by developing relationships between Members and their staff and Commissioners, the Executive Director, and Commission staff
- Maintain or increase long term funding for Commission programs through the federal appropriations process and other available sources.
- Engage Congress on fishery-related legislation affecting the Atlantic coast
- Promote member states' collective interests at the regional and national levels
- Promote economic benefits of the Commission's actions (return on investment)

Goal 8 – Ensure the fiscal stability & efficient administration of the Commission

Goal 8 will ensure that the business affairs of the Commission are managed effectively and efficiently, including workload balancing through the development of annual action plans to support the Commission's management process. It also highlights the need for the Commission to efficiently manage its resources. The goal promotes the efficient use of legal advice to proactively review policies and react to litigation as necessary. It also promotes human resource policies that attract talented and committed individuals to conduct the work of the Commission. The goal highlights the need for the Commission as an organization to continually expand its skill set through training and educational opportunities. It calls for Commissioners and Commission staff to maintain and increase the institutional knowledge of the Commission through periods of transition. Achieving this goal will build core strengths, enabling the Commission to respond to increasingly difficult and complex fisheries management issues.

Annual action planning will be guided by the following objectives:

- Conservatively manage the Commission's operations and budgets to ensure fiscal stability
- Utilize new information technology to improve meeting and workload efficiencies, and enhance communications

- Refine strategies to recruit professional staff, and enhance growth and learning opportunities for Commission and state personnel
- Fully engage new Commissioners in the Commission process and document institutional knowledge.
- Utilize legal advice on new management strategies and policies, and respond to litigation as necessary.



Atlantic Coastal Cooperative Statistics Program

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This list includes dates for fiscal year 2020, including ACCSP committee meetings, relevant dates of the funding cycle, as well as meetings or conferences ACCSP typically attends or which may be of interest to our partners. If you have any questions or comments on this calendar please do not hesitate to contact the ACCSP staff at info@accsp.org.

Jan 21-23:	APAIS South Atlantic Training – Wilmington, NC
Jan 28-30:	APAIS Mid-Atlantic Training – Dover, DE
Jan 28-30:	NEFMC Meeting – Portsmouth, NH
Feb 4-6:	ASMFC Meeting/Coordinating Council Meeting – Arlington, VA
Feb 4-6:	APAIS North Atlantic Training - Gloucester, MA
Feb 11:	Biological Review Panel Annual Meeting – Webinar
Feb 12:	Bycatch Prioritization Committee Annual Meeting –Webinar
Feb 11-13:	MAFMC Meeting – Duck, NC
Feb 26-28:	APAIS New England Training – New Bedford, MA
Mar 1:	Start of ACCSP FY20
Mar 2-6:	SAFMC Meeting – Jekyll Island, GA
Week of Mar 23:	Commercial Technical Committee Annual Meeting – TBD
Week of Mar 23:	Information Systems Committee Annual Meeting – TBD
Apr 7-9:	MAFMC Meeting – Galloway, NJ
Week of April 13:	Operations and Advisory Committees Spring Meeting – Webinar
Week of Apr 13:	Recreational Technical Committee – Webinar
Apr 14-16:	NEFMC Meeting – Mystic, CT
May 4-7:	ASMFC/Coordinating Council Meeting – Arlington, VA
May 11:	ACCSP issues request for proposals
Jun 8-12:	SAFMC Meeting – Key West, FL
Jun 15:	Initial proposals are due
Week of Jun 15:	APAIS Wave 2 Meeting - Webinar
Jun 16-18:	MAFMC Meeting – Virginia Beach, VA
Jun 22:	Initial proposals are distributed to Operations and Advisory Committees
Jun 23-25:	NEFMC Meeting – Freeport, ME
July 6:	Any initial written comments on proposals due
Week of Jul 13:	Review of initial proposals by Operations and Advisory Committees – Webinar
July 20:	If applicable, any revised written comments due
Week of Jul 27:	Feedback submitted to principal investigators
Aug 4-6:	ASMFC Meeting/Coordinating Council Meeting – Arlington, VA
Aug 10-13:	MAFMC Meeting – Philadelphia, PA
Aug 17:	Revised proposals due
Aug 15:	APAIS Wave 3 Meeting – Webinar

Our vision is to produce dependable and timely marine fishery statistics for Atlantic coast fisheries that are collected, processed, and disseminated according to common standards agreed upon by all program partners.

Aug 24:	Revised proposals distributed to Operations and Advisory Committees
Week of Sep 7:	Preliminary ranking exercise for Advisors and Operations Members – Webinar
Sep 14-18:	SAFMC Meeting – Charleston, SC
Sep 22-23:	Annual Advisors/Operations Committee Joint Meeting (in-person; location TBD)
Sep 29-30- Oct 1:	NEFMC Meeting – Gloucester, MA
Oct 6-8:	MAFMC Meeting – Riverhead, NY
Oct 18-22:	ASMFC Annual Meeting/Coordinating Council Meeting – New Jersey
Late Oct:	APAIS Wave 4 Meeting (In person – TBD)
Dec 1-3:	NEFMC Meeting – Newport, RI
Dec 7-11:	SAFMC Meeting – Wrightsville Beach, NC
Dec 15-17:	MAFMC Meeting – Baltimore, MD

Our vision is to produce dependable and timely marine fishery statistics for Atlantic coast fisheries that are collected, processed, and disseminated according to common standards agreed upon by all program partners.

Funding Decision Process
Atlantic Coastal Cooperative Statistics Program
May 2020

The Atlantic Coastal Cooperative Statistics Program (the Program) is a state-federal cooperative initiative to improve recreational and commercial fisheries data collection and data management activities on the Atlantic coast. The program supports further innovation in fisheries-dependent data collection and management technology through its annual funding process.

Each year, ACCSP issues a Request for Proposals (RFP) to its Program Partners. The ACCSP Operations and Advisory Committees review submitted project proposals and make funding recommendations to the Deputy Director and the Coordinating Council.

This document provides an overview of the funding decision process, guidance for preparing and submitting proposals, and information on funding recipients' post-award responsibilities, including providing reports on project progress.

Overview of the Funding Decision Process

- [Funding Decision Process Timeline](#)
- [Detailed Steps](#)

Funding Decision Process Timeline

April- Operations and Advisory Committees develop annual funding priorities, criteria and allocation targets (maintenance vs. new projects)

May- Coordinating Council issues Request for Proposals (RFP)

June- Partners submit proposals

July- Operations and Advisory Committees review initial proposals; ACCSP staff provide initial review results to submitting Partner

August- Final proposals are submitted. Final proposals must be submitted electronically to the Deputy Director, and/or designee by close of business on the day of the specified deadline. Final proposals received after the RFP deadline will not be considered for funding.

September- Operations and Advisory Committees review and rank final proposals

October- Funding recommendations presented to Coordinating Council; Coordinating Council makes final funding decision

ACCSP Staff submits notification to submitting Partner of funded projects and notification of approved projects to appropriate grant funding agency (e.g. NOAA Fisheries Regional Grants Program Office, "NOAA Grants") by Partner

As Needed- Operation and/or Leadership Team and Coordinating Council review and make final decision with contingencies (e.g. scope of work, rescissions, no-cost extensions, returned unused funds, etc.)

Detailed Steps of Funding Decision Process

1. Develop Annual Funding Priorities, Criteria and Allocation Targets (maintenance vs. new projects).

Prior to issuing the Request for Proposals, the Coordinating Council will approve the annual funding criteria and allocation targets. These will be used to rank projects and allocate funding between maintenance and new projects respectively.

In FY16, a long-term funding strategy policy was instituted to limit the duration of maintenance projects. Maintenance projects are now subject to a funding reduction following their fourth year of maintenance funding.

- For maintenance projects entering year 5 of ACCSP funding in FY20, a 33 percent funding cut was applied to whichever sum was larger: the project's prior two-year-average base funding set in FY16, or the average annual sum received during the project's four years of full *maintenance* funding. In year 6, a further 33 percent cut will be applied and funding will cease in year 7. Please see Appendix A for a list of maintenance projects entering year 6 in FY20 and the maximum funds available for these projects.
- For more recent maintenance projects (i.e., those entering year 5 of maintenance funding after FY20), the base funding will be calculated as the average of funding received during the project's four years as a *maintenance* project. These projects will receive a 33 percent cut in year 5, a further 33 percent cut in year 6, and funding will cease in year 7.

2. Issue Request for Proposals

An RFP will be sent to all Program Partners and Committees no later than the week after the spring Coordinating Council meeting. The RFP will include the ranking criteria, allocation targets approved by the Coordinating Council, and general Program priorities taken from Goal 3 of the current ASMFC Five-Year Strategic Plan. The RFP and related documents will also be posted on the Program's website [here](#).

All proposals MUST be submitted either by a Program Partner, jointly by several Program Partners, or through a Program Committee. The public has the ability to work with a Program

Partner to develop and submit a proposal. Principle investigators are strongly encouraged to work with their Operations Committee member in the development of any proposal. All proposals must be submitted electronically to the Deputy Director, and/or designee, in the standard format.

3. Review initial proposals

Proposals will be reviewed by staff and the Operations and Advisory Committees. Committee members are encouraged to coordinate with their offices and/or constituents to provide input to the review process. Operations Committee members are also encouraged to work with staff in their offices who have submitted a proposal in order to represent the proposal during the review. Project PIs will be invited to attend the initial proposal review, held in July. The review and evaluation of all written proposals will take into consideration the ranking criteria, funding allocation targets and the overall Program Priorities as specified in the RFP. Proposals may be forwarded to relevant Program technical committees for further review of the technical feasibility and statistical validity. Proposals that fail to meet the ACCSP standards may be recommended for changes or rejected.

4. Provide initial review results to submitting Partner

Program staff will notify the submitting Partner of suggested changes, requested responses, or questions arising from the review. The submitting Partner will be given an opportunity to submit a final proposal incorporating suggested changes in the same format previously described in Step 2(b) by the final RFP deadline.

5. Review and rank final proposals

The review and ranking of all proposals will take into consideration the ranking criteria, funding allocation targets, and overall Program Priorities as specified in the RFP. The Deputy Director and the Advisory and Operations Committees will develop a list of prioritized recommended proposals and forward them for discussion, review, and approval by the Coordinating Council.

6. Proposal approval by the Coordinating Council

The Coordinating Council will review a summary of all submitted proposals and prioritized recommended proposals from the Operations and Advisory Committees. Each representative on the Coordinating Council will have one vote during final prioritization of project proposals. Projects to be funded by the Program will be approved by the Coordinating Council by the end of November each year. The Deputy Director will submit a pre-notification to the appropriate NOAA Grants office of the prioritized proposals to expedite processing when those offices receive Partner grant submissions.

7. Confirmation of final funding amounts

The Director and Deputy Director will be notified by NOAA Fisheries of any federal grant adjustments (e.g. additions or rescissions). Additional funds will generally go to the next available ranked project. Reductions may include, but are not limited to:

- Lower than anticipated amounts from any source of funding

- Rescission of funding after initial allocations have been made
- Partial or complete withdrawal of funds from any source

If these or other situations arise, the Operations Committee will notify Partners with approved proposals to reduce their requested budgets or to withdraw a proposal entirely. If this does not reduce the overall requested amount sufficiently, the Director, Deputy Director, the Operations Committee Chair and Vice-Chair, and the Advisory Committee Chair will develop a final recommendation and forward to the ACCSP Leadership Team of the Coordinating Council. These options to address funding contingencies may include:

- Eliminating the lowest-ranked proposal(s)
- A fixed percentage cut to all proposals' budgets
- A directed reduction in a specific proposal(s)

8. Notification to submitting Partner of funded projects and submittal of project documents to appropriate grants agency (e.g. NOAA Grants) by Partner.

Notification detailing the Coordinating Council's actions relevant to a Partner's proposal will be sent to each Partner by Program staff.

- Approved projects from Non-federal Partners must be submitted as full applications (federal forms, project and budget narratives, and other attachments) to NOAA Grants via www.grants.gov. These documents must reflect changes or conditions approved by the Coordinating Council.
- Non-federal Partners must provide the Deputy Director with an electronic copy of the narrative and either an electronic or hard copy of the budget of the grant application as submitted to the grants agency (e.g. NOAA Grants).
- Federal Partners do not submit applications to NOAA Grants.

9. Operation and/or Leadership Team and Coordinating Council review and final decision with contingencies or emergencies.

Committee(s) review and decide project changes (e.g. scope of work, rescissions, no-cost extensions, returned unused funds, etc.) during the award period.

Proposal Guidance

- [General Proposal Guidelines](#)
- [Format](#)
- [Budget Template](#)

General Proposal Guidelines

- The Program is predicated upon the most efficient use of available funds. Many jurisdictions have data collection and data management programs which are administered by other fishery management agencies. Detail coordination efforts your agency/Committee has undertaken to demonstrate cost-efficiency and non-duplication of effort.
- All Program Partners conducting projects for implementation of the program standards in their jurisdictions are required to submit data to the Program in prescribed standards, where the module is developed and formats are available. Detail coordination efforts with Program data management staff with projects of a research and/or pilot study nature to submit project information and data for distribution to all Program Partners and archives.
- If appropriate to your project, please detail your agency's data management capability. Include the level of staff support (if any) required to accomplish the proposed work. If contractor services are required, detail the level and costs.
- Before funding will be considered beyond year one of a project, the Partner agency shall detail in writing how the Partner agency plans to assume partial or complete funding or, if not feasible, explain why.
- If appropriate to your project, detail any planned or ongoing outreach initiatives. Provide scope and level of outreach coordinated with either the Program Assistant and/or Deputy Director.
- Proposals including a collection of aging or other biological samples must clarify Partner processing capabilities (i.e., how processed and by whom).
- Provide details on how the proposal will benefit the Program as a whole, outside of benefits to the Partner or Committee.
- Proposals that request funds for law enforcement should confirm that all funds will be allocated towards reporting compliance.
- Proposals must detail any in-kind effort/resources, and if no in-kind resources are included, state why.

- Proposals must meet the same quality as would be appropriate for a grant proposal for ACFCMA or other federal grant.
- Assistance is available from Program staff, or an Operations Committee member for proposal preparation and to insure that Program standards are addressed in the body of a given proposal.
- Even though a large portion of available resources may be allocated to one or more jurisdictions, new systems (including prototypes) will be selected to serve all Partners' needs.
- Partners submitting pilot or other short-term programs are encouraged to lease large capital budget items (vehicles, etc.) and where possible, hire consultants or contractors rather than hire new permanent personnel.
- The Program will not fund proposals that do not meet Program standards. However, in the absence of approved standards, pilot studies may be funded.
- Proposals will be considered for modules that may be fully developed but have not been through the formal approval process. Pilot proposals will be considered in those cases.
- The Operations Committee may contact Partners concerning discrepancies or inconsistencies in any proposal and may recommend modifications to proposals subject to acceptance by the submitting Partner and approval by the Coordinating Council. The Operations Committee may recommend changes or conditions to proposals. The Coordinating Council may conditionally approve proposals. These contingencies will be documented and forwarded to the submitting Partner in writing by Program staff.
- Any proposal submitted after the initial RFP deadline will not be considered, in addition to any proposal submitted by a Partner which is not current with all reporting obligations.

Proposal Format

Applicant Name: Identify the name of the applicant organization(s).

Project Title: A brief statement to identify the project.

Project Type: Identify whether new or maintenance project.

New Project – Partner project never funded by the Program. New projects may not exceed a duration of one year.

Maintenance Project – Project funded by the Program that conducts the same scope of work as a previously funded new or maintenance project. These proposals may not contain significant changes in scope (e.g., the addition of bycatch data collection to a catch/effort dealer reporting project). Pls must include in the cover letter whether there are any changes in the current proposal from prior years' and, if so, provide a brief summary of those changes. At year 5 of maintenance funding, a project's base funding will be calculated as the average of funding received during the project's four years as a maintenance project.

Requested Award Amount: Provide the total requested amount of proposal. Do not include an estimate of the NOAA grant administration fee.

Requested Award Period: Provide the total time period of the proposed project. The award period typically will be limited to one-year projects.

Objective: Specify succinctly the “why”, “what”, and “when” of the project.

Need: Specify the need for the project and the association to the Program.

Results and Benefits: Identify and document the results or benefits to be expected from the proposed project. Clearly indicate how the proposed work meets various elements outlined in the ACCSP Proposal Ranking Criteria Document (Appendix B). Some potential benefits may include: fundamental in nature to all fisheries; region-wide in scope; answering or addressing region-wide questions or policy issues; required by MSFCMA, ACFCMA, MMPA, ESA, or other acts; transferability; and/or demonstrate a practical application to the Program.

Data Delivery Plan: Include coordinated method of the data delivery plan to the Program in addition to module data elements gathered. The data delivery plan should include the frequency of data delivery (i.e. monthly, semi-annual, annual) and any coordinate delivery to other relevant partners.

Approach: List all procedures necessary to attain each project objective. If a project includes work in more than one module, identify approximately what proportion of effort is comprised within each module (e.g., catch and effort 45%, biological 30% and bycatch 25%).

Geographic Location: The location where the project will be administered and where the scope of the project will be conducted.

Milestone Schedule: An activity schedule in table format for the duration of the project, starting with Month 1 and ending with a three-month report writing period.

Project Accomplishments Measurement: A table showing the project goals and how progress towards those goals will be measured. In some situations the metrics will be numerical such as numbers of anglers contacted, fish measured, and/or otoliths collected, etc.; while in other cases the metrics will be binary such as software tested and software completed. Additional details such as intermediate metrics to achieve overall proposed goals should be included especially if the project seeks additional years of funding.

Cost Summary (Budget): Detail all costs to be incurred in this project in the format outlined in the budget guidance and template at the end of this document. A budget narrative should be included which explains and justifies the expenditures in each category. Provide cost projections for federal and total costs. Provide details on Partner/in-kind contribution (e.g., staff time, facilities, IT support, overhead, etc.). Details should be provided on start-up versus long-term operational costs.

In-kind - ¹Defined as activities that could exist (or could happen) without the grant. ²In-kind contributions are from the grantee organization. In-kind is typically in the form of the value of personnel, equipment and services, including direct and indirect costs.

¹The following are generally accepted as in-kind contributions:

- i. Personnel time given to the project including state and federal employees
- ii. Use of existing state and federal equipment (e.g. data collection and server platforms, Aging equipment, microscopes, boats, vehicles)

Overhead rates may not exceed 25% of total costs unless mandated by law or policy. Program Partners may not be able to control overhead/indirect amounts charged. However, where there is flexibility, the lowest amount of overhead should be charged. When this is accomplished indicate on the 'cost summary' sheet the difference between the overhead that could have been charged and the actual amount charged, if different. If overhead is charged to the Program, it cannot also be listed as in-kind.

Maintenance Projects: Maintenance proposals must provide project history table, description of completed data delivery to the ACCSP and other relevant partners, table of total project cost by year, a summary table of metrics and achieved goals, and the budget narrative from the most recent year's funded proposal.

Principal Investigator: List the principal investigator(s) and attach curriculum vitae (CV) for each. Limit each CV to two pages. Additional information may be requested.

Budget Guidelines & Template

All applications must have a detailed budget narrative explaining and justifying the expenditures by object class. Include in the discussion the requested dollar amounts and how they were derived. A spreadsheet or table detailing expenditures is useful to clarify the costs (see template below). The following are highlights from the NOAA Budget Guidelines document to help Partners formulate their budget narrative. The full Budget Guidelines document is available [here](#).

Object Classes:

Personnel: include salary, wage, and hours committed to project for each person by job title. Identify each individual by name and position, if possible.

Fringe Benefits: should be identified for each individual. Describe in detail if the rate is greater than 35 % of the associated salary.

Travel: all travel costs must be listed here. Provide a detailed breakdown of travel costs for trips over \$5,000 or 5 % of the award. Include destination, duration, type of transportation, estimated cost, number of travelers, lodging, mileage rate and estimated number of miles, and per diem.

Equipment: equipment is any single piece of non-expendable, tangible personal property that costs \$5,000 or more per unit and has a useful life of more than one year. List each piece of equipment, the unit cost, number of units, and its purpose. Include a lease vs. purchase cost analysis. If there are no lease options available, then state that.

Supplies: purchases less than \$5,000 per item are considered by the federal government as supplies. Include a detailed, itemized explanation for total supplies costs over \$5,000 or 5% of the award.

Contractual: list each contract or subgrant as a separate item. Provide a detailed cost breakdown and describe products/services to be provided by the contractor. Include a sole source justification, if applicable.

Other: list items, cost, and justification for each expense.

Total direct charges

Indirect charges: If claiming indirect costs, please submit a copy of the current approved negotiated indirect cost agreement. If expired and/or under review, a copy of the transmittal letter that accompanied the indirect cost agreement application is requested.

Totals of direct and indirect charges

Example. Budget narrative should provide further detail on these costs.

Description	Calculation	Cost
Personnel (a)		
Supervisor	Ex: 500 hrs x \$20/hr	\$10,000
Biologist		
Technician		
Fringe (b)		
Supervisor	Ex: 15% of salary	\$1500
Biologist		
Technician		
Travel (c)		
Mileage for sampling trips	Ex: Estimate 2000 miles x \$0.33/mile	\$660
Travel for meeting		
Equipment (d)		
Boat	Ex: \$7000, based on current market research	\$7000
Supplies (e)		
Safety supplies		\$1200
Sampling supplies		\$1000
Laptop computers	2 laptops @\$1500 each	\$3000
Software		\$500
Contractual (f)		
Data Entry Contract	Ex: 1000 hrs x \$20/hr	\$20,000
Other (h)		
Printing and binding		
Postage		
Telecommunications charges		
Internet Access charges		
Totals		
Total Direct Charges (i)		
Indirect Charges (j)		
Total (sum of Direct and Indirect) (k)		

Post-award Responsibilities

- [Changing the Scope of Work](#)
- [Requesting a No-cost Extension](#)
- [Declaring Unused/Returned Funds](#)
- [Reporting Requirements](#)
- [Report Format](#)
- [Programmatic Review](#)

Changing the Scope of Work

Partners shall submit requests for amendments to approved projects in writing to the Deputy Director. The Coordinating Council member for that Partner must sign the request.

When Partners request an amendment to an approved project, the Deputy Director will contact the Chair and Vice Chair of the Operations Committee. The Deputy Director and Operations Committee Chairs will determine if the requested change is minor or substantial. The Chairs and Deputy Director may approve minor changes.

For substantial proposed changes, a decision document including the opinions of the Chairs and the Deputy Director will be sent to the Operations Committee and the ACCSP Leadership Team of the Coordinating Council for review.

The ACCSP Leadership Team will decide to approve or reject the request for change and notify the Deputy Director, who will send a written notification to the Partner's principal investigator with a copy to the Operations Committee.

When a requested major amendment is submitted shortly before a Coordinating Council meeting, the approval of the amendment will be placed on the Council Agenda.

The Deputy Director will notify NOAA Grants of any change in scope of work for final approval for non-federal proposals, and the Partner will need to request a Change in Scope through Grants Online. Necessary communications will be maintained between the concerned Partner, the Program and NOAA Grants. Any changes must be approved through the normal NOAA Grants process.

Requesting a No-cost Extension

If additional time is needed to complete the project, Program Partners can request a no-cost extension to their award period. Partners should let the Program know of the need for additional time and then request the extension as an Award Action Request through NOAA Grants Online at least 30 days before the end date of the award.

Necessary communications will be maintained between the concerned Partner, the Program, and NOAA Grants office. Any changes must be approved through the normal NOAA Grants process.

Declaring Unused/Returned Funds

In an effort to limit the instances in which funds are not completely used during the award period, draw down reports from the NOAA Grants offices indicating remaining grant balances will be periodically reviewed during each fiscal year.

While effort should be made to complete the project as proposed, if Program Partners find that they will not be able to make use of their entire award, they should notify the Program and their NOAA Federal Program Officer as soon as possible. Depending on the timing of the action, the funds may be able to be reused within the Program, or they may have to be returned to the U.S. Treasury.

Program Partners must submit a written document to the Deputy Director outlining unused project funds potentially being returned. The Partner must also notify their Coordinating Council member (if applicable) for approval to return the unused funds. If the funding is available for re-use within the Program, the Director and Deputy Director will confer with the Operations Committee Chair and Vice-Chair and the Advisory Committee Chair, and then submit a written recommendation to the ACCSP Leadership Team of the Coordinating Council for final approval on the plan to distribute the returned money.

Necessary communications will be maintained between the concerned Partner, the Program, and NOAA Grants office. Any changes must be approved through the normal NOAA Grants process.

Reporting Requirements

Program staff will assess project performance.

The Partner project recipients must abide by the NOAA Regional Grant Programs reporting requirements and as listed below. All semi-annual and final reports are to include a table showing progress toward each of the progress goals as defined in Step 2b and additional metrics as appropriate. Also, all Partner project recipients will submit the following reports based on the project start date to the Deputy Director:

- Semi-annual reports (due 30 days after the semi-annual period) throughout the project period including time periods during no-cost extensions,
- One final report (due 90 days after project completion).
- Federal Partners must submit reports to the Deputy Director, and State Partners must submit reports to both the Deputy Director and the appropriate NOAA Grants office.

Program staff will conduct an initial assessment of the final report to ensure the report is complete in terms of reporting requirements. Program staff will serve as technical monitors to review submitted reports. NOAA staff also reviews the reports submitted via Grants Online.

A project approved on behalf of a Program Committee will be required to follow the reporting requirements specified above. The principle investigator (if not the Chair of the Committee) will submit the report(s) to the Chair and Vice Chair of the Committee for review and approval. The Committee Chair is responsible for submitting the required report(s) to the Program.

Joint projects will assign one principle investigator responsible for submitting the required reports. The principle investigator will be identified within the project proposal. The submitted reports should be a collaborative effort between all Partners involved in the joint project.

Project recipients will provide all reports to the Program in electronic format.

Partners who receive no-cost extensions must notify the Deputy Director within 30 days of receiving approval of the extension. Semi-annual and final reports will continue to be required through the extended grant period as previously stated.

Partners that have not met reporting requirements for past/current projects may not submit a new proposal.

A verbal presentation of project results may be requested. Partners will be required to submit copies of project specifications and procedures, software development, etc. to assist other Program Partners with the implementation of similar programs.

Report Format

Semi-Annual(s) – Progress Reports: (3-4 pages)

- Title page - Project name, project dates (semi-annual period covered and complete project period), submitting Partner, and date.
- Objective
- Activities Completed – bulleted list by objective.
- Progress or lack of progress of incomplete activities during the period of semi-annual progress – bulleted list by objective.
- Activities planned during the next reporting period.
- Metrics table
- Milestone Chart – original and revised if changes occurred during the project period.

Final Report:

- Title page – Project name, project dates, submitting Partner, and date.
- Abstract/Executive Summary (including key results)
- Introduction
- Procedures

- Results:
 - Description of data collected.
 - The quality of the data pertaining to the objective of the project (e.g. representative to the scope of the project, quantity collected, etc.).
 - Compiled data results.
 - Summary of statistics.
- Discussion:
 - Discuss the interpretation of results of the project by addressing questions such as, but not limited to:
 - What occurred?
 - What did not occur that was expected to occur?
 - Why did expected results not occur?
 - Applicability of study results to Program goals.
 - Recommendations/Summary/Metrics
- Summarized budget expenditures and deviations (if any).

Programmatic review

Project reports will inform Partners of project outcomes. This will allow the Program as a whole to take advantage of lessons learned and difficulties encountered. Staff will provide final reports to the appropriate Committee(s). The Committees then can discuss the report(s) and make recommendations to modify the Data Collection Standards as appropriate. The recommendations will be submitted through the Program committee(s) review process.


Appendix A: Maximum Funding for Maintenance Projects Entering Year 6 of Funding in FY21

Project Entering Year 5 of Maintenance Funding	Calculated Base (formula used)	Maximum Funding Year 5	Maximum Funding Year 6
ME DMR: Portside commercial catch sampling and bycatch sampling for Atlantic herring, Atlantic mackerel, and Atlantic menhaden	\$133,452.50 (2-year base)	\$88,968.33	\$44,484.17
ME DMR: Managing Mandatory Dealer Reporting in Maine	\$183,934.50 (4-year avg)	\$122,623.00	\$61,311.50
RI DEM: Maintenance and Coordination of Fisheries Dependent Data Feeds to ACCSP from the State of Rhode Island	\$82,563.50 (2-year base)	\$55,042.33	\$27,521.17
NJ DFW: Electronic Reporting and Biological Characterization of New Jersey Commercial Fisheries	\$163,803.75 (4-year avg)	\$109,202.50	\$54,601.25
SC DNR: ACCSP Data Reporting from South Carolina's Commercial Fisheries	\$170,770.00 (2-year base)	\$113,846.67	\$56,923.33
ACCSP RTC: At-sea Headboat Sampling	\$162,114.00 (2-year base)	\$108,076.00	\$54,038.00
SEFSC: Continued processing and ageing of biological samples collected from U.S. South Atlantic commercial and recreational fisheries	\$266,792.00 (4-year avg)	\$177,861.33	\$88,930.67

Appendix B: Ranking Criteria Spreadsheet for Maintenance and New Projects

Ranking Guide – Maintenance Projects:

Primary Program Priority	Point Range	Description of Ranking Consideration
Catch and Effort	0 – 10	Rank based on range within module and level of sampling defined under Program design. When considering biological, bycatch or recreational funding, rank according to priority matrices.
Biological Sampling	0 – 10	
Bycatch/Species Interactions	0 – 6	
Social and Economic	0 – 4	
Data Delivery Plan	+ 2	Additional points if a data delivery plan to Program is supplied and defined within the proposal.

Project Quality Factors	Point Range	Description of Ranking Consideration
Multi-Partner/Regional impact including broad applications	0 – 5	Rank based on the number of Partners involved in project OR regional scope of proposal (e.g. geographic range of the stock).
> yr 2 contains funding transition plan and/or justification for continuance	0 – 4	Rank based on defined funding transition plan away from Program funding or viable justification for continued Program funding.
In-kind contribution	0 – 4	1 = 1% - 25% 2 = 26% - 50% 3 = 51% - 75% 4 = 76% - 99%
Improvement in data quality/quantity/timeliness	0 – 4	1 = Maintain minimum level of needed data collections  4 = Improvements in data collection reflecting 100% of related module as defined within the Program design. Metadata is provided and defined within proposal if applicable.
Potential secondary module as a by-product (In program priority order)	0 – 3 0 – 3 0 – 3 0 – 1	Ranked based on additional module data collection and level of collection as defined within the Program design of individual module.
Impact on stock assessment	0 – 3	Rank based on the level of data collection that leads to new or greatly improved stock assessments.


Other Factors	Point Range	Description of Ranking Consideration
Properly Prepared	-1 – 1	Meets requirements as specified in funding decision document Step 2b and Guidelines
Merit	0 – 3	Ranked based on subjective worthiness

Ranking Guide – Maintenance Projects: (to be used only if funding available exceeds total Maintenance funding requested)

Ranking Factors	Point Range	Description of Ranking Consideration
Achieved Goals	0 – 3	Proposal indicates project has consistently met previous set goals. Current proposal provides project goals and if applicable, intermediate metrics to achieve overall achieved goals.
Data Delivery Plan	0 – 2	Ranked based if a data delivery plan to Program is supplied and defined within the proposal.
Level of Funding	-1 – 1	-1 = Increased funding from previous year 0 = Maintained funding from previous year 1 = Decreased funding from previous year
Properly Prepared	-1 – 1	-1 = Not properly prepared 1 = Properly prepared
Merit	0 – 3	Ranked based on subjective worthiness

Ranking Guide – New Projects:

Primary Program Priority	Point Range	Description of Ranking Consideration
Catch and Effort	0 – 10	Rank based on range within module and level of sampling defined under Program design. When considering biological, bycatch or recreational funding, rank according priority matrices.
Biological Sampling	0 – 10	
Bycatch/Species Interactions	0 – 6	
Social and Economic	0 – 4	
Data Delivery Plan	+ 2	Additional points if a data delivery plan to Program is supplied and defined within the proposal.

Project Quality Factors	Point Range	Description of Ranking Consideration
Multi-Partner/Regional impact including broad applications	0 – 5	Rank based on the number of Partners involved in project OR regional scope of proposal (e.g. fisheries sampled).
Contains funding transition plan / Defined end-point	0 – 4	Rank based on quality of funding transition plan or defined end point.
In-kind contribution	0 – 4	1 = 1% - 25% 2 = 26% - 50% 3 = 51% - 75% 4 = 76% - 99%
Improvement in data quality/quantity/timeliness	0 – 4	1 = Maintain minimum level of needed data collections  4 = Improvements in data collection reflecting 100% of related module as defined within the Program design. Metadata is provided and defined within proposal if applicable.
Potential secondary module as a by-product (In program priority order)	0 – 3 0 – 3 0 – 3 0 – 1	Ranked based on additional module data collection and level of collection as defined within the Program design of individual module.
Impact on stock assessment	0 – 3	Rank based on the level of data collection that leads to new or greatly improved stock assessments.

Other Factors	Point Range	Description of Ranking Consideration
Innovative	0 – 3	Rank based on new technology, methodology, financial savings, etc.
Properly Prepared	-1 – 1	Meets requirements as specified in funding decision document Step 2b and Guidelines
Merit	0 – 3	Ranked based on subjective worthiness

Atlantic States Marine Fisheries Commission

Atlantic Coastal Cooperative Statistics Program Coordinating Council

Committee Status

Since the last Council meeting, the ACCSP has published two monthly newsletters on Committee Activities. The newsletter was designed to keep all ACCSP Committee members informed of the Program's activities and accomplishments.

- 1) August 2020
- 2) September 2020

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August 2020 Committee Newsletter

This monthly newsletter is intended to keep all committee members informed of the activities and accomplishments of ACCSP committees and staff. ACCSP staff welcomes feedback on all content.



Upcoming Events

- **August 27 (10:00AM-11:30AM):** Recreational Technical Committee Call to finalize data standards for the Comprehensive For-hire Data Collection Plan
- [See ACCSP Calendar Link for more information](#)

Highlights

"The Resilience Factor Project could not have been completed without the support of the Biological Review Panel committee members and especially the creation of the new Resilience Factor methodology by Mike Errigo."
- Heather Konell



Coordinating Council

- Coordinating Council met August 3rd.
- The council noted the governance transition has successfully improved ACCSP visibility among partners and stakeholders and allowed for full integration with ASMFC management and science programs.
- Governance Survey respondents agreed that ACCSP is advancing in its mission to produce dependable and timely marine fishery statistics for Atlantic coast fisheries that are collected, processed, and disseminated according to common standards agreed upon by all program partners.

Advisory & Operations Committees

- Operations and Advisory Committee members met jointly on July 16th to conduct the initial review of proposals.

- Upcoming Meetings:
 - Week of September 7: voluntary ranking exercise to discuss ranking spreadsheet and process questions.
 - Virtual Joint Meeting in September: dates to be chosen and announced by August 28th. Agenda items include:
 - Final proposal ranking and recommendations compiled
 - Governance Survey Review
 - SAFIS Redesign updates
 - Committee and Program Updates

Biological Review Panel

- The last of the small group meetings have been completed to finalize the Resilience Scores for the Biological Review Panel. Those scores will be brought to the full committee in the next month or so and we will come to consensus for all species and the methodology will be applied to the full matrix this year when each partner submits their species scores. This is a very important step in the Resilience Factor Project which has been ongoing for several years

Commercial Technical Committee

- The Conversion Factor small working group has submitted its final draft for the continued validation and development of conversion factors for 5 priority fish and crustacean species. The species of interest include:
 - Atlantic Menhaden
 - Atlantic Sharpnose Shark
 - American Eel
 - Blue Crab
 - Snowy Grouper

Informational Systems Committee

- SAFIS Redesign prototype of eTRIPS/online was presented to RI and MA on June 30th. Milestone dates are:
 - January 4th 2021 – available in production
 - November 13th 2020 – available to all partners for testing
 - October 1st, 2020 – beta testing including CARRING, e-1ticket
- eTRIPS/mobile v2 has been released into the app stores for Quality Control. Following a successful review eTRIPS/mobile will be moved to production stores. We anticipate a release date of 30-Aug-2020. Things to note in this release is the inclusion of the switchboard to provide maximum flexibility to partners.
- The software team has started using GitHub. Github is a code hosting platform for version control and collaboration. It allows the software team and collaborators (contractors, ASMFC, ACCSP, partners) to work together on projects from anywhere.

Recreational Technical Committee

- Held an informal call for interested committee members on August 5 discussed responses of survey staff and the public to COVID-19. Focused attention on best practices and general tips for overcoming new obstacles and issues with field surveys.
- This call served its purpose by fulfilling the request of the committee to better assess successes of field survey during COVID-19 pandemic and helped promote coastal coordination and standardization of procedures.
- Future full committee call on August 27 to work towards deciding final data standards for the Comprehensive For-hire Data Collection Plan. Additionally, the committee will summarize and discuss next steps for the Comprehensive Plan: MRIP certification.
- The importance of this call is that finalizing data standards will allow for the Comprehensive For-hire Data Collection Plan to be further developed – moving into more specifics such as data elements. Review of the MRIP certification process. It is aimed at helping guide the committee's planning and timeline moving forward, making sure benchmarking and calibration can occur in a timely manner.

Editor: Marisa Powell

Please contact us if you have any questions or feedback at info@accsp.org.



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September 2020 Committee Newsletter

This monthly newsletter is intended to keep all committee members informed of the activities and accomplishments of ACCSP committees and staff. ACCSP staff welcomes feedback on all content.



Upcoming Events

- **October 22nd 8:30AM-9:45AM:** Atlantic Coastal Cooperative Statistics Program Coordinating Council Meeting
- **See [ACCSP Calendar Link](#) for more information**

Highlights

The Atlantic Coastal Cooperative Statistics Program is pleased to announce that the Fall Data Load to update the 2019 commercial data is complete. The commercial and recreational data for 2019 are available in the Data Warehouse.



Advisory & Operations Committees

- Convened on September 22, 23, and 24, for the Virtual Joint Annual Meeting
- Discussed and ranked the FY2021 final proposals and developed funding recommendations to the Coordinating Council
- Reviewed and discussed project expenditures to date and future step-down targets
- Reviewed the results of the Governance Survey and agreed with the consensus of the Coordinating Council that the governance transition has successfully improved ACCSP visibility among partners and stakeholders and allowed for full integration with ASMFC management and science programs
- Committee updates
 - Review of committee membership
 - Accountability small group
 - Positive feedback on the monthly committee newsletter
- Program updates
 - Data Warehouse
 - MRIP
 - FISMA
 - SAFIS Redesign

Commercial Technical Committee

- The Electronic Monitoring Standards working group has submitted comprehensive lists of data elements for EM programs in the Atlantic and Gulf of Mexico. These are currently being reviewed in order to help coordinate EM standards amongst Atlantic coastal partners for the commercial and for-hire sectors. Programs include:
 - HMS Pelagic Longline
 - Northeast Groundfish and Mid-Water Trawl Herring
 - Mote CFEMM Gulf of Mexico Snapper-Grouper

Informational Systems Committee

- SAFIS eTRIPS/online REDESIGN was presented on September 9th. After receiving feedback during a successful demo, the software team continues development for production release.
 - Scheduled for a Beta Evaluation release October 15, 2020.
 - Scheduled for Production release Jan 3, 2021.

Recreational Technical Committee

- Progressing through small work groups in late September and early October to further flesh out points of agreement on data standards for the Comprehensive For-hire Data Collection Program. The work groups will bring their resultant agreements back to the full Committee in late October for additional input.

The work groups are split into the following categories:

- Data submission
- Validation and reporting compliance
- Data estimation and integration

Standard Codes Committee

- NMFS SERO has submitted a request for the creation of a new disposition code for general discarded catch, which would not include specific details discerning whether alive/dead or the reason for release. This new code would help to ensure that data collected via the SAFIS eTRIPS applications could match with existing data feeds via the SE VMS data collection.
- Massachusetts state staff have asked that the committee review a previous decision to define gill net efforts for "gear quantity" as the total length of the net.
- With the recent implementation of SAFIS eTRIPS Switchboards, now is an appropriate time to further discuss and finalize how to standardize the collection of the gill net effort across all partners.

ACCSP Program

- Released SAFIS eTRIPS/mobile update on August 30th that integrates Highly Migratory Species questions

Editor: Marisa Powell

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Atlantic Coastal Cooperative Statistics Program Coordinating Council

October 22, 2020

PROGRAM UPDATES

(Since August 2020)

1. Budget / Funding

- ACCSP Grant status – Final year of 5 year grant
 - 2020 Staff expenditures on track, committee travel savings of \$60K, and workload for contracted tasks resulting in higher costs.
 - ACCSP projects with significant funding through Admin grant:
 - SAFIS Discard App: likely extend into 2021
 - RI-GA Law enforcement app: On schedule for completion this year
 - MA-RI location devices: Remaining funds being prioritized for project completion this year.
 - ME-MA location devices: Field work done, Final Report Drafted
 - Utilized some prior year savings to maintain helpdesk and SAFIS development
 - Evaluating potential for remaining funds to be carried forward – will work with ACCSP Leadership Team after Coordinating Council Annual meeting to determine balance between partner projects and Admin Grant activities.
- MRIP Grant status – in year 2 of 5
 - All States have submitted invoices by wave for W1-3, some for W4
 - 8 States began increased APAIS sampling in Wave 5 funded by NOAA. State Agreement funding maximums adjusted.
 - ACCSP staff and states working to update budgets and staffing needs for 2021 dockside sampling increase.
- FIS Quality Management: Tools to Improve Data Provision for ASMFC Stock Assessments
 - Start date 6/1/2020, project initiated virtually via scoping meetings.

2021 External Funding Proposals

- FIS proposal (submission 1) Continued Development and Enhancement to the ACCSP Online Data Query Tool and the ACCSP Assignment Tracking Application: **APPROVED**
 - FIN development \$181,500 start 4/1/2021 for 11 months
- FIS proposal (submission 2) Atlantic Coast Project Scoping for Implementation of Automated Data Auditing and Validation for Electronic Logbooks: **APPROVED**
 - Quality Management \$58,448 start 3/1/2021 for 11 months
- NFWF proposal submitted for SAFIS Helpdesk (mobile applications): **IN REVIEW**
 - SAFIS mobile application support for end users \$326K start 1Jan2021 14 months

2. External Coordination

- FIS - Participated in two monthly Coordination Meetings.
- GARFO - Monthly ACCSP ↔ GARFO coordination meetings on shared initiatives.
 - One Stop Reporting (OSR) project – Held 2 virtual workshops to align requirements
 - Technical improvements and alignment on data sharing and editing via API
- GULFFIN – Continued supporting deployment of MRIP tablets and centralized database and cross-involvement on technical committees.
- HMS – Supporting integration of HMS data collection into SAFIS dealer and fishermen reporting tools, and participation in many of above coordination calls.
- LOBSTER REPORTING REQUIREMENTS - ACCSP facilitated discussions with lobster TC, ASMFC (ISFMP & Science), GARFO, NEFSC, and state partners to align data needs with partner processes.
- MRIP - Regional Implementation Council, participated in MRIP Communications Groups, completed and distributed MRIP Partner Satisfaction Survey
- NEFMC, MAFMC, SAFMC – Maintained awareness and support of Council meetings and actions
- SERO - Bi-weekly ACCSP ↔ SERO coordination meetings supporting SEFHIER development and implementation.

ACCSP Vision: To be the principal source of fisheries-dependent information on the Atlantic coast through cooperation of all program partners

3. Staffing

- Focused on successfully meeting external deadlines, and recognize the ongoing need to rebalance workload and timeline expectations
- Expect to fill open Data Team Lead position in early 2021
- Addition of 2021 software team member dependent upon Admin Grant – Option 1 approval

4. ACCSP Project Highlights

- Data Warehouse / Data Requests
 - Fall data load 2019 data completed and released on schedule
 - Data Requests – Supported multiple SEDAR's & completed assessment data requests including red drum.
 - Increased user efficiency for data viewing and confidential data access requests
- FISMA
 - Completed planned technical and fixes and documentation according to schedule
 - Maintained and improved ongoing systems monitoring
 - Submitted first quarterly status report to the OCIO
 - Nearing Completion of SERO interconnect agreement (ISA), Privacy Office approved sharing of permit data with ACCSP
 - Coordinating revised data connection paths with federal partners – should improve security and reduce costs
- MRIP
 - Presented at two National Academy Review Meetings: Data and Management Strategies for Recreational Fisheries with Annual Catch Limits (South Atlantic and Mid-Atlantic).
 - Coordinated sampling increases for W5-6 2020
 - Wave 1 data released for catch and effort, Wave 2-4 effort data released and ACCSP distributed by email as support and access in alignment with MRIP approach
 - State conduct of FHTS going strong. Submitted FHTS and APAIS Wave reports and convened survey review meeting for state staff leads.
 - Planning for 2021 survey (tablets, training, increased NOAA funded assignments)
- Outreach / Communications
 - Improvements to website (calendar & project documentation archives for 2018 forward)
 - Monthly ACCSP committee update emails for August and September
 - Integrating communications schedule with ASMFC (newsletters, notices, tweets)
 - Program Assistant supporting improved meeting execution and documentation
- SAFIS application updates
 - Addressing alignment of ACCSP tools so that what is possible in eTRIPS/mobile is also possible in eTRIPS/online and properly connects to eDR/online & mobile. Includes complexities of multiple federal permit holders seeing the right questions and codes in all cases, and addition of HMS questions when species caught.
 - SAFIS software rollout schedule
 - eTRIPS /mobile v2 for SERO/SEFSC/HMS/GARFO – Completed August 2020
 - eTRIPS /mobile v2 compromise lists for multiple permit holders– January 2021
 - eTRIPS /online Re-Design: Production release January 2021 – move to new underlying structure – allows for greater flexibility for partners to collect questions. Partner testing October 15-31, open testing in November
 - eDR /mobile will add field for VTR number in November to support use by Federal dealers
 - eDR /mobile & online will undergo further redesign work during 2021
- SEFHIER
 - GULF and South Atlantic regulations effective January 5, 2021 for logbooks & hail out. Location tracking (VMS) has later implementation date
 - ACCSP SAFIS application awaiting SERO certification (eTRIPS /mobile v2 compromise lists for multiple permit holders is major component)