Atlantic States Marine Fisheries Commission

American Lobster Management Board

March 31, 2022
1:00 p.m. – 3:30 p.m.

Link to register for webinar:
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Draft Agenda

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

1. Welcome/Call to Order (*J. McNamee*) 1:00 p.m.

2. Board Consent 1:00 p.m.
   - Approval of Agenda
   - Approval of Proceedings from February 2022

3. Public Comment 1:05 p.m.

4. Consider American Lobster Addendum XXIX on Electronic Vessel Tracking in the Federal American Lobster and Jonah Crab Fisheries for Final Approval 1:15 p.m.
   Final Action
   - Review Management Options and Frequently Asked Questions *(C. Starks)*
   - Consider Final Approval of Addendum

5. Other Business/Adjourn 3:30 p.m.

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

AMERICAN LOBSTER MANAGEMENT BOARD

Webinar
February 23, 2022

These minutes are draft and subject to approval by the American Lobster Management Board.
The Board will review the minutes during its next meeting.

TABLE OF CONTENTS

INDEX OF MOTIONS

1. **Approval of agenda** by consent (Unrecorded).

2. **Move to approve Proceedings of October 18 and December 6, 2021** by consent (Unrecorded).

3. **Move to postpone action on Lobster Draft Addendum XXIX and Jonah Crab Draft Addendum IV until the next meeting of the American Lobster Management Board, which will be held before the ASMFC Spring Meeting** (Page 8). Motion by Cheri Patterson; second by David Borden. Motion carried (Page 14).

4. **Move to adjourn** by consent (Page 34).

ATTENDANCE

Board Members

Megan Ware, ME, proxy for P. Keliher (AA)
Stephen Train, ME (GA)
Cherie Patterson, NH (AA)
Ritchie White, NH (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)
Dan McKiernan, MA (AA)
Raymond Kane, MA (GA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)
Jason McNamee, RI (AA)
David Borden, RI (GA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)
Colleen Bouffard, CT, proxy for J. Davis (AA)
Bill Hyatt, CT (GA)
Maureen Davidson, NY, proxy for J. Gilmore (AA)
Emerson Hasbrouck, NY (GA)
Joe Cimino, NJ (AA)
Peter Clarke, NJ, proxy for T. Fote (GA)
John Clark, DE (AA)
Roy Miller, DE (GA)
Mike Luisi, MD, Administrative proxy
Pat Geer, VA, Administrative proxy
Allison Murphy, NOAA

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Kathleen Reardon, Technical Committee Chair
Grant Moore, Advisory Panel Chair
Rob Beal, Law Enforcement Representative

Staff

Toni Kerns
Maya Drzewicki
Tina Berger
James Boyle
Emilie Franke
Adam Lee
Mike Rinaldi
Julie Defilippi Simpson
Caitlin Starks
Deke Tompkins

Guests

Max Appelman, NOAA
Richard Balouskus, RI DEM
Leah Baumwell, Pew Trusts
Fred Bever, Maine Public
Kurt Blanchard, RI DEM
Nicholas Buchan, MA DMF
Beth Casoni, MLA
Bill Devoe, ME DMR
Laura Deighan, NOAA
Timothy Field, ProtonMail
Brian Galvez, NOAA
Amalia Harington, Univ ME
Marin Hawk, MSC
Heidi Henninger, Off Shore Lobster
Jerome Hermsen, NOAA
Matthew Heyl, NJ DEP
Pat Keliher, ME (AA)
Chip Lynch, NOAA
Gregory Mataronas
Patrice McCarron, MLA
Adam Nowalsky, Port Republic, NJ
Chad Power, NJ DEP
Trach Pugh, MA DMF
Melissa Smith, ME DMR
Somers Smott, VMRC
Wes Townsend
Corinne Truesdale, RI DEM
Barry Clifford, NOAA
Scott Schaffer, MA DMF
Craig Weedon, MD DNR

The American Lobster Management Board of the Atlantic States Marine Fisheries Commission convened via webinar; Tuesday, February 22, 2022, and was called to order at 1:00 p.m. by Chair Jason McNamee, a small portion of the meeting was not recorded.

JOINING MEETING ALREADY IN SESSION

CONSIDER AMERICAN LOBSTER ADDENDUM XXIX ON ELECTRONIC VESSEL TRACKING IN THE FEDERAL AMERICAN LOBSTER AND JONAH CRAB FISHERIES FOR FINAL APPROVAL

MS. CAITLIN STARKS: Proposed Options along with the Public Comments for those Options, and then I will provide the Advisory Panel Report from our meeting last week. Then lastly, I'm going to go over the Board action for consideration and next steps. For a background, the Board initiated Draft Addendum XXIX to consider vessel tracking requirements for federally permitted lobster and Jonah crab vessels in August of 2021.

The Board initiated this action to address the need for some higher resolution, spatial and temporal data on effort in the fishery, to address several critical issues that this fishery has been challenged with. Leading up to initiating this Addendum for several years, the Board has recognized the need for these data, to characterize effort specifically for improving the stock assessments for lobster and Jonah crab.

Helping inform decision making to reduce fishery interactions with protected species, as well as discussions related to marine spatial planning for other ocean uses, like offshore wind development, and also to improve the efficiency of law enforcement efforts in the offshore area.

To that end, the Board established this objective for the Addendum, which is to collect high resolution spatial and temporal data, to characterize effort in the federal American lobster and Jonah crab fisheries for management and enforcement needs. This is the timeline of the action's development.

Again, it was initiated in August, 2021, and then in December of 2021 the Board approved the draft addendum document for public comment, and the public comment period extended from December through January of this year. It included six virtual public hearings, which I'll go over some summaries of later.

Then earlier this month the Advisory Panel met to review the Addendum options, the public comments, and to provide their advice to the Board. Then today the Board is meeting to review all of the public comments, the AP report, and consider taking final action on the Addendum.

REVIEW MANAGEMENT OPTIONS AND PUBLIC COMMENT SUMMARY

MS. STARKS: With that I'll go into the proposed management options. Draft Addendum XXIX considers just two options. Option A is status quo, or no additional requirement for electronic vessel tracking in the lobster and Jonah crab fisheries, and Option B is to implement electronic vessel tracking requirements for federally permitted lobster and Jonah crab vessels with commercial trap gear area permits. Under Option B, federal lobster and Jonah crab vessels that are issued commercial trap gear area permits would be required to install an improved electronic tracking device, to collect and transmit spatial data in order to participate in the trap gear fishery.

Federally permitted vessels without an approved tracking device would be prohibited from landing lobster or Jonah crab taken with trap gear, and as such, federal permit holders would be required to install an approved device before beginning a lobster or Jonah crab fishing trip with trap gear.

The device would be required to stay onboard the vessel, and have power at all times when the vessel is in the water, unless that device is authorized to power down by the principal port state that is

identified on the permit. That would be the state authority for that vessel. Powering down of these devices could be authorized by the state for reasons such as the vessel being hauled out or repaired, or if a device failure has been reported to the state authority, just to give a couple of examples.

Then tampering with these tracking devices or their signals, including any activity that could affect the unit's ability to operate properly would be prohibited. Option B proposes that the tracking requirements would apply to these seven federal permit categories that are listed in this table. These include all of the commercial trap gear area permits for Areas 1 through 5 and Outer Cape Cod.

Additionally, the commercial trap gear Area 5 waiver permit, which was used to allow Area 5 permit holders to be exempt from the more restrictive lobster trap gear specifications, and trap tagging requirements in order to target black sea bass. Commercial trap gear Area 6 is also excluded from these proposed electronic tracking requirements, because Area 6 is only in state waters.

For some additional clarity, the tracking requirements that are proposed under Option B would not apply to vessels that only have a state permit and no federal permit. Inactive federal permits, which have been placed in confirmation of permit history status, and vessels that will not fish trap gear during the fishing year.

For example, if a vessel wishes to retain their lobster commercial trap gear permit, but will not be fishing trap gear, they'll only be fishing with other gear under a different permit for that year, those vessels would be exempt from this requirement. Beyond the basic tracking requirements, Option B in the Draft Addendum also provides some additional information on how the program would be implemented.

This includes requirements for the devices and the vendors, that they must meet in order to be approved for use in the fishery. Descriptions of the administrative responsibilities and processes that would be need at the Commission, state and federal levels, and also how the data collected by the tracking devices would be processed, stored, and provided to managers. For the minimum criteria and specifications that the tracking devices and vendors must meet. First, the devices must be able to collect location data at a rate of one ping per minute for at least 90 percent of the fishing trip, and this rate was determined to be able to differentiate fishing activity from transiting activity, and allow estimation of the number of individual trawls from looking at the vessel tracks. The data for each of those pings have to include the devices current date/time, it's latitude and longitude, and identifiers for both the device and vessel.

The devices have to meet minimum accuracy and precision requirements, as well as ruggedness specifications that allow them to function in the marine environment, and the device vendors must provide sufficient customer service, as described in the Addendum, and they must maintain the confidentiality of personally identifying information, and all other protected data in accordance with federal law.

The implementation and enforcement of these tracking requirements will require some administrative processes at different levels, including the Commission, state and federal levels, so I'll just go through each of these in the next few slides. At the state level, the states would be responsible for certifying that approved devices are installed on all vessels in the permit categories that we specified, before the vessel goes on a fishing trip using a standard affidavit form.

The state that is responsible for each permit holder, again would be determined by the principal port location declared on the federal permit. As for providing the states with a federal trap gear area permit data, GARFO will be providing that information to the states, so they can determine which permits holders each state is responsible for.

The states would also be responsible for providing support to their permit holders, to help them with properly complying with all of the vessel tracking requirements. This doesn't mean the states would be required to help them install devices or troubleshoot devices, that would be the responsibility of the vendors.

Then the states would also be responsible for data validation and compliance monitoring, including contacting permit holders if there are data issues that need to be resolved, such as incomplete tracking data or mismatches between vessel trip reports and associated vessel tracks. Then at the federal level, GARFO will be responsible for providing up-to-date information to the states on the American lobster trap gear area permit ownership.

Including all of the applicable vessel permit numbers, names, whole IDs, endorsements, issuance and expiration dates, and permit holder information. GARFO will also incorporate the federal lobster EVTR data into their quality assurance program, once that rulemaking is complete, to implement the federal harvester electronic vessel trip report requirements. The EVTRs will be validated to ensure data quality, and any errors that are identified through that process will be resolved by GARFO outreach efforts to correct and resubmit trip reports.

ACCSP will also have near real time access to federal EVTR data, so that it could be used to identify the fishing activity from the vessel tracking data. Option B also outlines the data processes needed, the main one being that ACCSP will house the tracking data, and ACCSP will receive the location data from the tracking vendors, and they'll get the EVTR data from GARFO. All the data must be submitted in accordance with ACCSPs trip locations API specifications. Then with those datasets ACCSP will be able to match vessel tracks with trip reports, and as with all of the fisheries data that ACCSP handles, they will also maintain data confidentiality in accordance with federal law, and data access will only be granted to authorized entities with confidential access.

With the trip report data, the state and federal agencies will remain responsible for ensuring compliance with data reporting requirements. Specifically, GARFO will be responsible for the validation of the EVTR data, and the state management agencies would be responsible for validating the trip location data.

That's the overview of the Addendum options, and now I'm going to go through the public comment summary. As I mentioned, there were six virtual hearings held during the comment period on Addendum XXIX, covering Maine through Virginia. The total attendance across those hearings was 98, though there were some folks that attended more than one hearing, so it's slightly less individuals than 98. At those hearings, 35 public comments were provided, and during the comment period we also got 32 written comments on the Addendum.

This table summarized the comments that were provided at the public hearing in favor of each of the two options. Across the hearings we had 27 comments in favor of Option A status quo, and 3 were in favor of B for electronic vessel tracking requirements. The second table is a summary of the written comments, and I'll note that not all written comments were clear on which of the options was preferred, so only the comments that actually specified a preferred option are included in the table.

Of the 25 comments that specified an option they preferred, 16 preferred Option A, and 13 of those came from individuals and 3 from organizations. Then 9 written comments were in favor of Option B, with two of those from individuals and 7 from organizations. The next couple of slides summarize some of the more common themes across the comments that we received, so these comments are in support of status quo.

Among these, many comments mentioned concerns that data from vessel tracking would harm the fishery rather than help, or be used against the

industry in some way. Several people were concerned that it would be inappropriate to use the tracking data to define static use areas for the fishery for marine spatial planning efforts, because the fishery is dynamic and important fishing areas are likely to change over time.

Another common theme among the comments was that fishermen should not be financially responsible for the collection of these data, but that the Commission, the states and/or NOAA Fisheries should provide funding to pay for the devices and data cost. Along with that it was often mentioned that the devices and data plans would be too costly for small business operators.

Then a number of comments highlighted concerns about fishermen losing days at sea due to device malfunction. More reasons for supporting status quo included opposition to having to have multiple types of devices for different fisheries on a single vessel, not having enough information about the devices, the vendors, actual cost of the devices, their reliability and accessibility, as well as their power needs. Concerns about data privacy were another common theme, with a few people being concerned that the data would be accessible by entities or other individuals who shouldn't have access to it, and also some who simply thought that the tracking devices would be an invasion of their privacy, given that vessels are sometimes used for activities other than fishing, like recreation.

One letter from an organization suggested that instead of implementing Addendum XXIX, the Board should fully implement the reporting requirements and improvements from Addendum XXVI, and the recommendations within that Addendum to satisfy the objectives of Draft Addendum XXIX.

Other comments also mentioned existing data from trip reports and logbooks should be fully utilized instead of requiring trackers. Finally, there were some concerns that the tracking data are still going to be somewhat limited, because they cannot provide information on lobster catch rates. Of the comments that were given in support of Option B, many of them highlighted the concern that the current spatial information for the lobster fishery is too coarse, and higher resolution data is needed to help with the stock assessment and right whale risk reduction efforts.

Some also supported Option B, because of longstanding concerns of the lack of or limitations of offshore law enforcement. Several comments also noted that tracking data would be of enormous value to understanding economic tradeoffs for management measures like area closures and marine spatial planning decisions, as well as for enforcing other management measures required by the Atlantic Large Whale Take Reduction Plan.

Some supporters of Option B also thought the vessel tracking data should be required as soon as possible, to start collecting this information. Some other general comments that were provided were that financial support to reduce or eliminate the cost for fishermen could reduce resistance to this proposal, that the Commission should consider allowing the use of existing AIS technology to meet the requirements of the program.

They said that ASMFC should follow this action up with an addendum that would improve harvest reporting in state waters, as well as federal waters. Lastly, that the electronic vessel tracking requirements should not apply to the Area 5 waiver permit. There were multiple comments that supported that idea. That is the overview of the public comments.

ADVISORY PANEL REPORT

MS. STARKS: And now I have a few slides for the Advisory Panel Report. Our Lobster AP Chair is here today at the meeting, but I agreed to give the slides for Grant, but he is here to answer questions if needed.

For the Lobster and Jonah Crab Advisory Panel's, we had a joint meeting of those two panels on

February 15, 2022, to review the Addendum options. Eight Lobster AP members attended and three Jonah Crab AP members attended. Five advisors of the total supported Option A, and three advisors supported Option B.

The AP members that preferred Option A for status quo brought up several of the same issues discussed in the public comments. One Jonah crab advisor said there are still too many unanswered questions about how the program would work, and how the data would be used. A few advisors also said the tracking program should be funded by agencies benefiting from the data, like NOAA Fisheries. Then similar to public comments, several AP members highlighted the issue of the fishery being spatially dynamic, and tracking data from one year will not reflect past or future areas of importance. To that point, another AP member indicated that a baseline for the fishery footprint should be established from the tracking data over several years, before the spatial information should be used for management or marine spatial planning or assessments.

Several AP members also argue that there should be 100 percent harvester reporting before tracking is required, because without that harvester reporting aspect, the tracking data will not be as useful. One Lobster Advisor was also doubtful in general that these data would actually benefit the fishery, in terms of protecting them against wind development, because either they believe wind areas have already been planned in most of the areas, or it will not be important to the wind developers to avoid fishing areas.

Then a few advisors also felt that the Addendum is moving too quickly and more time is needed to set up the program. Of the advisors that supported Option B, for the tracking requirements, most recognized that there is a need to be able to prove where the fishery is occurring, and with those tracking data for all of the reasons that were discussed in the Addendum.

One advisor supported this option because they felt tracking will fill the gap in law enforcement in the offshore area. Some of the advisors stated that the need for better spatial data outweighs some of the potential risks. Another added that they hope these data can be used to resolve gear conflicts.

Then a few advisors felt that more precise spatial data, similar to what's being proposed under this Addendum, would have benefited the fishery during the development of the Canyons and Sea Mounts Marine National Monument, as well as the New England Fishery Management Council's Deep Sea Coral Amendment. Then lastly, advisors supporting Option B also agreed that the tracking data would help improve the stock assessment, to better manage the lobster and Jonah crab stocks. With that, these are the next steps for the Board to consider.

Today if desired, the Board can consider final action on the Addendum, and if it does get approved today or when it gets approved, the states would begin their processes to implement the requirements of the Addendum and their state regulations, and the Commission would also move forward with forming the work group that would identify and approve vendors and tracking devices for use in the fishery.

The federal rule making process would also begin, and the guidance that we've received from NOAA so far has been that they expect to be able to implement the tracking requirements in time for the 2023 fishing year. That's the end of my presentation, and before we go to our next section, I guess, Jason, do you want to take any questions?

CHAIR JASON McNAMEE: Yes, thanks, Caitlin. I think that's a good idea. Awesome presentation, as always, very concise representation of what was a lot of work, a lot of meetings, so thank you for that, Caitlin. Thanks to the AP for that great report. There were some thoughtful comments there. I think Captain Moore is on the line here, in case anybody has questions on the AP Report. With

that, why don't we go to questions on the presentation. Please, raise your hand if you have any questions. I've got one to lead us off, David Borden. Go ahead, David.

MR. DAVID V. BORDEN: Caitlin, I would just like to start by complementing you on the job you did at the hearings. I thought you did a really excellent job with a difficult situation. Not all of the questions you were being asked had been answered by the Board and the TC, and I think you handled yourself very well.

My question is on timing. A lot of the questions that were made by the industry, I put into the category of, there are logical responses that the Board and TC can provide to those. If we were to take the time to delay this for a month, let's say, then what impact would that have on the implementation schedule?

CHAIR McNAMEE: Thanks for that question, David. Caitlin, I don't know if you want to take a crack at that. I know we have some folks from NOAA on the line here as well that may wish to weigh in, but do you want to start it off?

MS. STARKS: Sure, thanks, Mr. Chair. My understanding is that a delay of a month or so would likely not impact the ability of NOAA to finalize rulemaking in time for the 2023 fishing year. But I think it would become a little bit tight. I guess I would like to have, or ask Alli Murphy from NOAA to add to that if she has more specifics.

CHAIR McNAMEE: Yes, thanks, Alli, if you would like to weigh in, please feel free to go ahead and unmute.

MS. ALLISON MURPHY: Thanks, Caitlin, I think you represented that very well. I think what we generally say is that if compellable federal rulemaking is required from a Commission action, to expect about a year for us to get that done. You know I think potentially a delay of a month might mean a slight delay on our part, but we've still got some time ahead of the start of the fishing year to potentially get this in place.

CHAIR McNAMEE: Awesome, thank you, Alli and thank you, Caitlin. Next question, I see Cheri Patterson. Go ahead, Cheri.

MS. CHERI PATTERSON: This question is for Alli. Alli, is the reporting for federal lobster permittees still in line for January of 2023?

CHAIR McNAMEE: Alli, if you feel like you want to weigh in on that, I guess you should stay close to your mute button there, so please feel free.

MS. MURPHY: Will do, thank you. Hi, Cheri. Yes, we are still targeting January 1, 2023. The Rule is off my desk and in the review chain right now. I'm hoping for a publication real soon.

MS. PATTERSON: Thank you.

CHAIR McNAMEE: Are there questions from folks at this point? Dan McKiernan, go ahead, Dan.

MR. DANIEL McKIERNAN: My question has to do with the timing, and how much of a deal breaker it would be if we didn't meet our time goal. Specifically, if NOAA is going to require, with any luck, January 1st as the time for the mandatory EVTRs, and our goal was to get these devices on by the beginning of the fishing year, which I believe is May 1.

If we were to fail to meet our goals, and that would be accomplished, say a month later or two months later or six months later. Is that a problem? I guess it's kind of an open-ended question. Could we proceed in such a way that even if we were to delay this, but get it in at a later date. Would that still be a useful outcome to meet the goals of this program?

CHAIR McNAMEE: Hmm, I think that's a NOAA question again. Caitlin, if you want to weigh in, please jump in. Otherwise, maybe Alli can bail us out again.

MS. TONI KERNS: Jason, I might be able to help a little here. Dan, I think it depends on which goal of the Addendum you're speaking to. I think one of the more immediate needs that folks have been discussing is these unknown whale rule regulations, and how this data can help us have more precise information about end line and end line usage, for incorporation into the Take Reduction Team's models.

The longer you delay the less data we have to add to the Take Reduction Team models. I assume that if they are going to be re-reviewing the progress of the rules that were just implemented this past year in 2025, that you'll want a full year's worth of data for 2023 to add to those modeling approaches that will probably start to be done in 2024.

I mean that would be the most immediate need. As you know, wind energy issues are happening as we speak, so obviously the sooner you can get information to support the industry the better. The delay impacts your individual states and how you're working with the different leases off of different state waters.

MR. McKIERNAN: Could I follow up?

CHAIR McNAMEE: Yes, go ahead, Dan.

MR. McKIERNAN: Thanks, Toni, that's a great answer. I guess what I take away from that is, we needed this data yesterday, and if this were delayed any fragment of the year it's not as if we lose an entire year, because as it stands, the EVTRs and the trackers were on a different schedule anyway. I just want to be clear that to me this is an important Addendum that I'm going to do all I can to get passed.

I'm just trying to strategize about what any delay would create, in terms of its effectiveness. It sounds to me like it would be just a proportional reduction in the data. We wouldn't be missing an entire year, for example. It's not like another species that we manage. We need to get it done before like the fish arrive for that year. Like this is an in-season requirement, that if the season were a tad delayed, I think we would still be accomplishing a lot. Thank you for letting me ask those questions and make those comments.

CHAIR McNAMEE: I've got another hand, Ritchie White. Go ahead, Ritchie.

MR. G. RITCHIE WHITE: Just to follow up on those, so I'm sure I'm understanding the timing here. If we delayed action and approved this at our May meeting, and the Service took a year to approve their end. That would mean the 2023 fishing year, beginning in May, then the Service could have this in place. Am I figuring this out right?

CHAIR McNAMEE: Toni, do you want to take that one?

MS. KERNS: Yes. I think, Ritchie, approving it in May you are starting to get dangerously close to the start of the fishing season. I think that if you want a full implementation, starting at the beginning of the fishing season in 2023, you might want to approve this sooner than later. It's good to have a little buffer room in there, in order to make sure for those states that need the federal implementation prior to going to rulemaking will have that.

There are several states that don't necessarily need federal implementation prior to them starting to work on their own rulemaking to administer the programs. But there are some states, I think, that do. Maybe New Hampshire is one of them, if I am remembering correctly. Waiting until May could be problematic to get the beginning of the fishing year.

POSTPONE FINAL APPROVAL OF ADDENDUM

CHAIR McNAMEE: Okay, any other hands from Board members with questions? All right, not seeing any. Here is what I would like to do with the meeting at this point. I've heard a lot of questions, sort of wondering and pondering the impacts of a potential delay in final action. There are some additional slides after the one you're looking at here, where we can kind of step through some of

the questions that came up during the public hearing.

Really kind of dig into them a little bit, and try to come to a consensus on the response, to make sure we've captured all of the important elements to be able to report back to our constituents in the various states. Before we get into that, I thought it might make sense to see if there is a motion anybody wants to make, before we launch into any additional discussion, like the one I just discussed. Why don't I look for a hand for a potential motion to kind of spawn some of that additional conversation? I've got a hand, Cheri Patterson. Go ahead, Cheri.

MS. PATTERSON: I would like to move to postpone action on the Lobster Draft Addendum XXIX, and Jonah Crab Draft Addendum IV, until the next meeting of the American Lobster Management Board, which is to be held before the ASMFC spring meeting. We want to get this done before that year is needed for NOAA to be able to initiate action. If I get a second then I can provide some more justification.

CHAIR McNAMEE: Excellent, thank you, Cheri. Looking for hands for a second, and I see David Borden. Thank you, David. We've got a motion, it's been seconded, and why don't I come back to you, Cheri, to finish your thoughts on it. We'll then give Mr. Borden a chance, and then we can get into some discussion, and I promise to allow for some public discussion as well. Then we can launch into looking through those questions that came up. Go ahead, Cheri, whenever you're ready.

MS. PATTERSON: During the public hearings for these two Amendments, the Industry had consistent questions amongst all the states, and on the program as a whole. They really could not be answered well. I think we should postpone until the tracking program has developed more fully, where we can answer questions on concerns the industry has expressed, and also to ensure the states, ASMFC and NOAA are aligned also with the program standards that should be developed.

CHAIR McNAMEE: David, would you like to offer some comments?

MR. BORDEN: Sure, just make a couple of brief comments. I support this. I virtually attended most of the hearings, and I thought the industry up and down the coast asked a lot of really good questions. Some of those questions need to be worked on by the Board, and also the Technical Committee, and a delay would certainly work to the advantage of all of us.

I think it's incumbent upon the process to try to deal with issues like, how will these data be used, and who gets access to these data? We can't do that after the fact, we need to talk through those types of issues in advance. A temporary delay will allow that.

CHAIR McNAMEE: Let's, we've got a motion on the Board, let's take some comments, questions, whatever from Board members first. Got a couple of hands up, the first is Dennis Abbott. Go ahead, Dennis.

MR. DENNIS ABBOTT: You know there is an old proverb that says that the road to hell is paved with good intentions. I'm not sure if that's not the road we're on, in trying to hasten through this Addendum. There were a lot of concerns raised by people at the hearings, which I attended the New Hampshire one, and a lot of the things that before we can even approve this at the next meeting, questions that should be answered.

Starting off, in my mind, so far, this is an unfunded mandate. It's been stated in the answers to the questions that we could receive some resources from the federal government to mitigate the cost of this. I think the document needs to contain more information regarding, in particular regarding what a fisherman does or can do or can't do, if he has problems with a unit after it's installed on the boat.

I also am concerned, just in a general sense, and being the devil's advocate, that I often am, that we're asking lobster fishermen to purchase something to be used, and in their mind, it could be used against them. It's sort of like self-incrimination, in some ways. I do understand the need for large whales and the wind business and all of that.

But I think that we have to go about this more carefully. You know GARFO in Mike Pentony's letter talked about they are still working out details. I think that there are a lot of details to be worked out. Another thing that came to my mind was the use by law enforcement. What will be the detailed procedure for law enforcement to access this information, you know to start an investigation, to further an investigation, so on and so forth. How do they go about this? There is just a lot of questions, and then you get into the maintenance of the trackers. I was thinking about having a tracker on, I don't have a lobster boat, but I'm just comparing it to myself sitting here at home with Comcast gear that runs my TVs, internet, and so on and so forth, and the amount of problems I have, and when I have to have a repairman come or return a unit.

I'm wondering how purchasing units from different vendors will work with lobstermen who have a malfunctioning unit, and they're waiting for somebody to come and fix it. Who is going to pay for it? Are they going to have to buy a new unit, and so on and so forth? All these things that I mention, I think that they need answers before we can actually approve this Addendum.

You know it's one thing to say we have to get it done by a particular time, but it's more important to get it done when it's done right. I praise Caitlin for all the work she's done on this, and everyone else that's been involved. But again, remember that the road to hell is paved with good intentions.

CHAIR McNAMEE: Hope we're not on the road to hell here. Just a note. I think as you were kind of ticking through the questions that are in your mind, I think we've got, I keep mentioning that I've got a series of slides here that kind of kick through the questions. I think they're all here, so since we have until about three o'clock, I thought it would be a good use of our time to kind of go through, kind of outline the current responses.

A lot of the questions that you just raised, Dennis, and just make sure that we're all sort of comfortable with those. Where we're not, we can do that additional investigation, as you suggested, to make sure we get everything kind of tightened up as well as we can. Good comments. Next up I have Steve Train. Go ahead, Steve.

MR. STEPHEN TRAIN: If I can go back to Dennis for a little bit. If you want a lobster boat, boy, have I got a deal for you. I'm going to support this motion, but I have some reluctance, and it's the hard deadline on the end. I think there are a lot of unanswered questions here. I think we need to take the time to get the questions answered, and answered satisfactorily, without a hard deadline on the back end.

The lobster fishery is a difficult fishery to enforce rules in, because of the vast area we cover, and the number of people. Most of the rules are obeyed because they are believed in. When you shove something down somebodies throat, they don't buy into, it changes the outlook of the entire way they operate. I just don't think that that is a good idea. I think we need to take the time, regardless of how long it takes, to answer these questions to the satisfaction of industry.

CHAIR McNAMEE: Good comments. Let's see, next up I have Megan Ware. Go ahead, Megan.

MS. MEGAN WARE: I am prepared to support this motion today. I think there were very legitimate questions asked by the public during the comment period, and we owe it to our stakeholders to answer those questions prior to taking action. In that spirit, I will support this. In the same breath I'll say, I do

think this is a high priority issue for the Board, given the vast amount of challenges facing this fishery. To respectfully disagree with my compatriot from Maine, I like that it has a specific deadline, I think it keeps us focused on this topic. If we find at that meeting that we still haven't answered all of the questions, I think it provides a progress point for us to continue to work on those. I support the motion as written today.

CHAIR McNAMEE: One more hand for the time being, that's Ritchie White. Go ahead, Ritchie.

MR. WHITE: I agree with all that's been said so far. I don't believe a month will nearly be enough to properly answer these questions. I think more than getting the answers to these questions, I want to see a lot of these answers be written in the Addendum. We had testimony from some fishermen that were involved in when VMS was approved.

I was around then, but I don't remember the hearings and what not. They said that oh yes, we were told a lot of things. Oh yes, we're going to take care of that as this unfolds or we're going to work. They said it turned out differently than what they were told in the beginning. I think it's important that we put in writing in the Addendum, for example, the issue of the box doesn't work, can you go fishing?

Who do you contact, and how long do you have to contact a person about the box not working? I mean those things that, we're going to take care of them, I think we need to take care of them and have it in the Addendum, so that it is very clear to the fishermen exactly how this is going to work. Thank you.

CHAIR McNAMEE: You know I think we do have some, at least initial responses to some of these questions. As I keep mentioning, we'll kind of tick through those, and see what we think. To your larger point, I'm going to look to Caitlin or Toni. I don't know what that, so a modification to the document at this point to add some language. Maybe you can make a comment about that.

If it's not, that would be something that would trigger a whole new public process. Perhaps there is some other way, because in the end we have these questions. We're going to try and develop some answers. Then what? You know we need to get that information out to the public again in some way, shape or form. I'm wondering, Toni or Caitlin, if you want to comment on at least a process issue with changing the Addendum at this point.

MS. STARKS: I can start off, and then Toni, you can confirm. But I do believe if we were to make that kind of modification, we might have to take it back out for public comment. To that point though, from the beginning of developing this Addendum have talked about having a complementary document that goes along with it, that would lay out all of these details for the states and partners to use.

That was the intention if this were approved, would be to put together a consistent document for all of the states to be able to have, to be following the same guidance on how to implement this program and answering the questions that Ritchie White brought up. Toni, please add if you feel the need.

MS. KERNS: I'll just add to what Caitlin said, like even specific to some of the things that Ritchie had just brought up. We intentionally made some of these things more open, to allow the states to administer the programs that met their regulatory and administrative processing needs, because we know that some states have different processes that they need to go through, in order to implement such a program.

We were trying to provide that flexibility to have some of the same overarching standards, but then to give that flexibility to the states, in order to get it done within their administrative protocols. I think we would have to go out for public comment again if we made major changes to the document itself.

Since I have the microphone, Mr. Chairman, it would be really helpful as we went through these

questions, for the Board to indicate where they are not satisfied with the answers that we have provided. In a lot of cases, some of the questions that I'm hearing right now are going to be specific to each of the individual states, and how their administrative processes undergo to implement the Addendum.

We'll need the states to help us answer these questions specific to how you see your state administering the program. It just will be very helpful to Caitlin and I if you could, as we go through, is the Board satisfied with the answer? If they're not satisfied with the answers, then what additional information are you looking for?

CHAIR McNAMEE: Awesome, thank you, Toni. Ritchie, follow up?

MR. WHITE: Yes. Toni, in response to what you just said, then it could be possible then that each state would have different set of regulations as to whether a fisherman can fish when the box does not work, and also who they contact and how long they have to contact. What you were saying, I believe, and correct me please if I'm wrong, that that would not be in the document, therefore all the states would not have the same response to that. Am I hearing that correctly?

MS. KERNS: In response to that question, what happens if my device isn't working. You know in our shop protocols of what we're thinking about putting forward is that it's not our intention to prohibit a fisherman who has been making a good faith effort to work with the state and the vendor, to get their device fixed.

Depending on what's going on with the device, it may mean that the device has to be sent back to the vendor, the vendor may have to send them a new device. It may be just a simple tweak that you know, who knows that could be fixed in a day or two. But what the state does to provide that clearance to that industry member could be different for each state, and how they want to set something up.

Maybe it's a call-in number for some states, maybe it's an e-mail that gets sent to someone. That part I can't answer how someone is going to do that. But if they're making a good-faith effort to get the device fixed, then it is not the intention to tie someone to the dock. The exact process is up to each individual state.

MS. STARKS: If I could just add to that.

CHAIR McNAMEE: Yes, go ahead.

MS. STARKS: I just wanted to say that in the Addendum document on Page 7, it says if Option B is adopted, a separate document will be developed that will include additional details and standard operating procedures to guide the management agencies in implementing the vessel tracking requirements.

I think a question like Ritchie just brought up about how long people would have to contact. You know we can think about that through this Standard Operating Procedures Document, and if the states all agree, we can put a standard in that would be consistent. But if the states have different ways that they're thinking about implementing these types of rules, then we can make that guidance flexible enough to allow the states to use whatever works best for them.

CHAIR McNAMEE: I would like to chime in as well. You know I think one of the nice things about the Commission is it's an organization of the states, and the reason it works well is because we all understand that we all have nuances in our states that allow us or require us to do things a little bit differently.

Just to restate. I think the higher level, can you go fishing if your tracker is not working properly. There is going to be a higher-level answer to that, that everyone is going to abide by. Then the logistical elements that each state requires to sort

of allow that to happen, that's where the differences will be.

It's kind of hierarchical, but it should work. It won't be inconsistent on the main topics, just the sort of working logistics will be a little bit different. You know Rhode Island and Maine are different places. They require in Rhode Island you could bring your tracker in, no matter where you are in the state it would be about a 20-minute drive. It's not the same for Maine. That is what we're kind of talking about there. I've got a few more hands up.

Just a quick look at the clock. It's two o'clock, we're supposed to wrap up by three, and there are quite a few questions, so I'm just sort of cautioning folks that I want to be able to, number one, I'll ask the public to weigh in here a little bit. Then I'll get to some criteria there, and then I want to make sure we can get through a good slug of these questions. The first hand I saw was Alli Murphy. Go ahead, Alli.

MS. MURPHY: I think like others who have spoken, I'm generally supportive of postponing action on this. I think between the questions that have been raised here and by Board members, there are some details that need to be worked out here before this should move forward. As the conversation was just going, you know I'm starting to get a little nervous by hearing all of the states are going to do very different things. You know if we are required to do federal rulemaking, we will have to comply with things like the Paperwork Reduction Act, which means we'll need to have an idea of how the states intend to handle some of these scenarios, and hopefully do so in a somewhat uniform way. I just want to put a pin in that I think there are some additional details to be worked out. Thanks.

CHAIR McNAMEE: Next up I have Dave Borden. Go ahead, Dave.

MR. BORDEN: I just quickly want to encourage all of the Board members to take up the motion. I mean the motion does nothing more than set the stage for us to then have a detailed discussion on all the specifics that we've been discussing for the past 15 minutes. Please, let's take up the motion and then as the Board Chair indicated, he'll lead us into the specifics with the staff. Thank you.

CHAIR McNAMEE: Thank you, David, I appreciate the help. I do have a couple of remaining hands. If you like what David said, and you want to abide by it, you can lower your hand. But I will call on the hands that I see. The first is Eric Reid. Go ahead, Eric.

MR. ERIC REID: I would reluctantly support this motion. I agree with Mr. McKiernan that yesterday would be best, and I would caution the Board and the industry on any delay collecting hard data. I do agree that the devil is in the details. But it's my experience that anecdotal information, especially when it comes to fishing effort and history, will not cut it, especially when it comes to two four letter words, mitigation and compensation. That's where I'm at, thank you, Mr. Chairman.

CHAIR McNAMEE: Then the final hand I have here is Dennis Abbot. Go ahead, Dennis.

MR. ABBOTT: I agree with David Borden, knowing that he's one that always tries to run a very quick meeting. But let me say that could I ask the question about the need for making changes in the document, and requiring a series of public hearings. For instance, to put into the document the fact that having a tracker that's not operable will not stop a fisherman from going fishing.

Would that require another public hearing, or does that not make sense in putting that in there, because again, that was one of the things that the fishermen were very concerned about, was having a tracker inoperable, and being told they can't go fishing. Thanks.

CHAIR McNAMEE: Toni or Caitlin, a response to that?

MS. KERNS: I'll just stick with what we said before. Major changes to the document, which were not originally in the document, make it difficult for us to not take it back out for comment as we said. When we were in the hearings, we did tell people that it was not the intention to hold people at the docks when the trackers weren't working, if someone was making good faith effort to have that tracker fixed.
We did inform the public of that, but it is the process that we have followed at the Commission. It would be up to the Board to decide if they want to do more hearings, it could just sit out for 30 days. But again, it would just be an additional delay, which will start to bump against the beginning of the fishing year.

CHAIR McNAMEE: I've got one more hand. I'm going to go to that final hand, then what I'm going to do is, I'm going to go out to the public with a plea/caveat that we are going to go through, and step through these questions one by one. My sense is that if you have questions, they might be answered, or if not, I can go back out to the public at the conclusion of the questions, and you can add in at that point. If anybody wants to talk about the motion directly before we vote on it, that is I think completely appropriate.

I just wanted to kind of set the stage there. It looks like Dan McKiernan has put his hand down, so at this point why don't I go ahead and do that. Looking to the public, if anybody wants to make a comment or has a question about the motion, now is the time for that. Keeping in mind that the questions that everyone keeps referring to, we're going to go through in some detail for the next 55 minutes or so. Questions/comments from the public on the motion, please, raise your hand. Okay, well thank you, no questions from the public. Back to the Board.

MS. TINA L. BERGER: Jay, I'm sorry, Mr. Chairman, there was some who provided a question in the question box. His name was Gregory Mataronis.

MS. STARKS: Tina, I believe that the statement was that, if there is another chance for a member of the public to make a comment, they would be able to do it after this motion is taken up.

CHAIR McNAMEE: Oh yes, I see that. It is Greg Mataronis, and Greg, yes, I promise to provide another opportunity for a public comment. It might be more worthwhile, like once we kind of get through the questions a little bit. I think that will be more valuable for the public, so thanks for sitting tight there. Okay, let's take, hopefully folks have had a little bit of time to think about this.

But I feel often rushed on these virtual meetings, with trying to communicate with my counterparts. I do want to give a little time, just so everyone can confirm the votes within their state. Let's do a two-minute caucus, then we will come back and call the question. Is there a little timer or something we can put up on the Board? All right. Two minutes should be good, two minutes and we'll be back. Okay, there is two minutes. Does anybody need a little more time to communicate with their fellow Commissioners?

Please, raise your hand if you need more time. Okay, I'm not seeing any other hands. Why don't we get to it then, we've got the motion on the board? Move to postpone action on Lobster Draft Addendum XXIX and Jonah Crab Draft Addendum IV until the next meeting of the American Lobster Management Board, which will be held before the ASMFC Spring Meeting. Motion by Ms. Patterson, seconded by Mr. Borden. All of those in favor, please signify by raising your virtual hand. Toni, I assume you're keeping track of this part.

MS. KERNS: Yes, I'll read the states out loud. I just want to give it one second to settle. I have New York, Connecticut, Rhode Island, Delaware, New Jersey, Maine, Maryland, Virginia, New Hampshire, and NOAA Fisheries. I will clear the hands. All right, I'm ready.

CHAIR McNAMEE: All those opposed to the motion, please signify by raising your hand.

MS. KERNS: I do not have any hands up for noes.

CHAIR McNAMEE: Okay, thank you, any abstentions, please raise your hand.

MS. KERNS: I don't have any hands up in abstentions.

CHAIR McNAMEE: Finally, any null votes, please raise your hand.

MS. KERNS: I don't have any null votes, and I think I counted 10 states in favor, Jason. Caitlin, can you confirm that?

CHAIR McNAMEE: I have 10 as well.

MR. RAYMOND W. KANE: Pardon me, Mr. Chairman, this is Ray Kane from Massachusetts. I was just informed that I was asked to vote for the state, and we vote in favor.

MS. KERNS: Thank you, Ray, then that would be 11 states in favor.

CHAIR McNAMEE: Thank you, Ray. Okay, so the motion passes. Thank you all very much for that. Motion passes 11 to 0 to 0, to 0. Great. With that, thanks everybody, nice job getting that set up. Now, without further ado let's launch into the questions. Again, the intent here is to sort of look at the questions that came up.

We kind of collated all the questions that came up during the hearings, as well as conversations folks had afterwards, collected all of those and have attempted some responses to those questions. That is what we will step through here. Let's pace ourselves, we don't want to spend, there is I think about 10 or 12 questions, so just kind of keep that in the back of your mind.

It may come to a point where we'll just need to move on, understanding that we'll need to kind of flesh out the answer a little more before the next meeting. Very first question, I think a very important one that came up at a lot of the hearings is, who will pay for the tracking devices. Just to be up front.

At this time there is no dedicated funds to pay for the trackers. I think folks generally understand that. However, there is some reason to be optimistic. There are investigations that are underway to find dedicated funds to assist with at least paying for part of the cost associated with the trackers, something like the device and then a year of the service kind of a thing.

Further, the trackers are eligible for funding under the House and Senate Report Language for the 2022 budget. If that budget is approved, it could help subsidize these devices. But we're not going to know the result of that until later in the winter or early spring here, March thereabouts. That is where we're at on the tracking devices. There is nothing we can commit to at this time, but some reason to be optimistic. Looking for hands to make comments or questions or anything on this particular question, please raise your hand. Dan McKiernan.

MR. McKIERNAN: I guess I would want to reframe this by being more clear, to say that it's the expectation that the permit holders would be paying for the trackers, but many of us in the various agencies are seeking costs that would defray that. I imagine that even if there were a grant program it would be a reimbursement.

But I think to be clear to the public, I think the expectation is the vessel would pay for it, and again if there was funding available, I think it would be a reimbursement. Maybe others have a different view of how a grant program would be executed, especially with this language about partial costs.

MS. KERNS: Dan, I think it could be, sorry Mr. Chair, is it okay if I respond to Dan?

CHAIR McNAMEE: Yes, please.

MS. KERNS: Dan, I think it could be one of two things, as you said, either a reimbursement through a grant program, or it could be that a state would take the funds and pay for the trackers themselves, and disburse the trackers. I think it could go either way, if there was enough funding to cover the tracking device itself.

MR. McKIERNAN: Right, but Toni, ultimately this is going to be a multiyear program, and I'm expecting that even if the upfront costs were supported with some kind of a government funds, it would still be a contract between the vessel owner or the permit holder, and the vendor, which then has to be continued to be paid even beyond whatever funds might be made available temporarily. I just want to be clear, because it's kind of a dodged. If the question is, who will pay for the tracking devices, in my mind it is the permit holders.

MS. KERNS: Agreed. Jason, the other thing that I just wanted to make sure that is also clear about cost is that during the hearings, I think a lot of folks equated the cost of trackers and the service fee for trackers to be very similar to VMS devices. I just want to make sure that the Board understands that these trackers are a fraction of the cost of VMS devices and the service contract fees, the annual fees are also a fraction of that as well.

CHAIR McNAMEE: Yes, good point, Toni, thanks for that. Okay, another hand, Dave Borden, go ahead, David.

MR. BORDEN: I agree with Dan's point that we should have some language in here about reimbursement, and would just say that my own view is, if this moves forward, I could even see the Commission paying for some of the cost for tracking devices in certain areas. I would just cite an example. There are so few fishermen that fish south of Rhode Island that the Commission could cover that cost out of its current operating budget, in my own view, for a pretty insignificant amount of money. Given the fact that we're not traveling to meetings, and we're saving all this money on travel, there has got to be some surplus money. As far as up north, I think the language about reimbursement covers my concern, because I have every expectation that some of the people that are working on this issue are going to try to provide reimbursement in the next budget. Thank you.

CHAIR McNAMEE: Toni, response to that?

MS. KERNS: Thank you, Jason. David, the Commission's operating budget doesn't have extraneous dollars to pay for research and funding for such things as trackers. The money that has been saved through the lack of travel has gone back to the states. We've disbursed those funds.

If there were extra dollars to be spent on something, it would be up to the states themselves to decide how that funding would be utilized. I can't make any commitment to say that we would be able to pay for those trackers for those individuals. We just don't have those extraneous dollars in our budget.

CHAIR McNAMEE: Thanks, Toni, and thanks David for the thought there. Okay, so we've had a couple of comments to modify this a little bit. We've recorded that. Timothy Field, I do see your hand. I want to get like a couple of questions under our belt here, and then I promise to come out to the public. You can keep your hand up, and I will come to you, but I just wanted you to know why I'm flipping to the next question here, try and batch these a little bit.

There were a lot of questions about the research that went into the tracking devices, how many vessels were involved, that sort of thing. This one is a pretty straightforward one, we're just kind of providing the results or the numbers from the various states. There is a little bit of nuance in here, so for the state of Maine, they have looked at

tracking devices from three different vendors, tested them on 18 lobster vessels, and they also had several vessels (20) that had trackers on them that are in the urchin fishery.

Then, as was the case for most of the states, they also tested them out on some of the state vessels as well. In the case of Maine, it was the Marine Patrol vessels. Massachusetts, they deployed trackers on five vessels, and some of their state research vessels, as well as a recreational vessel or two. Then in Rhode Island we had, from 2019 through 2021 we had some different cellular tracking devices that got tested on three of our state-owned research vessels.

That was part of an ACCSP project. Then we've also been running a pilot program with commercial vessels, some of them are lobster vessels, but not all of them. That was 25 different commercial fishing vessels that we tested the trackers out on. That is basically what we have, so is there any comments or additional information from other states that they want to add into the list here? Looking for hands. Ritchie White, go ahead.

MR. WHITE: Are there any results from these tests? Can we provide how these devices held up? Was the data supplied, the type of data that we're looking to accumulate? What were the issues? I think that those are what the industry is going to want to see. I mean they also want to see how many, but also what were the results?

CHAIR McNAMEE: Yes, Caitlin, do you want to take that one? I'm guessing it exists already in a PDT or a TC document.

MS. STARKS: There was one analysis report provided actually as an appendix to the Addendum, so that is in there, the ping rate analysis from Maine's tests on these devices. Then previous to this, the pilot electronic tracking projects were presented to the Board last year, I believe, or potentially even before that. Again, there was a pilot project that was implemented through Addendum XXVI, and that project has been presented to the Board previously. There is a report for that as well. I can always follow up and send those out if needed.

CHAIR McNAMEE: Follow up, Ritchie? Is that good?

MR. WHITE: Just that that be provided, you know as part of our response to the questions, I think, so that industry sees it as part of this response.

CHAIR McNAMEE: Got you, thanks for that. Ray Kane, go ahead, Ray.

MR. KANE: Yes, and also included in results on this testing. I think what the harvesters might be looking for are price controls, price concerns. I realize three vendors, a limited number of vessels. But as this gets implemented and you've got thousands of lobstermen, prices should come down. But I would like to see that included in this document, you know a ballpark figure of some sort.

MS. STARKS: If I could ask for clarification, Mr. Chair.

CHAIR McNAMEE: Yes, please do, go ahead, Caitlin.

MS. STARKS: There were prices provided, again in the initial report from the Pilot Tracking Project. That was a couple devices that were tested, and ranges of those prices were provided previously to the Board, and we did provide that information in the public comments, during the public hearings as well.

We did not want to include that information in the actual document, because we didn't want to kind of, I guess identify particular vendors and hold them to any prices that may change over time. I guess I'm trying to figure out what specific price information would be helpful, because we have already provided ranges of prices on the various devices that were tested.

CHAIR McNAMEE: Follow up, Ray.

MR. KANE: Well, I'll reiterate. These prices, I presume, were on a limited number of trackers. Now, mandating this through a management action, you're going to have thousands of people who need to go to these vendors. I should think the price would drop substantially. But I think that's got to be included in this document some place.

MS. STARKS: If I could. I just, Toni, maybe you have something. I just don't see a way that we're going to be able to get these vendors to give us prices, when we don't have an actual mandate in place now. Toni, you've probably talked to some folks about this as well.

MS. KERNS: I think Ray, the tricky part is that depending on the number of devices that get approved and how the states decide how they're going to work with vendors. It may be that say, 60 percent of the folks go with one vendor. Their price then may come down significantly. Whereas, another vendor may hold on to their price. We can ask what their pricing would be.

But again, the prices have dramatically changed, I shouldn't say dramatically changed, but they have dropped since we started these projects two and three years ago. I just don't know if it's going to be all that telling, because it may be their price may be one thing if you order ten devices, it may be a different if they get 300 devices. Without knowing how many devices will be ordered from that particular vendor, it's very difficult for us to get a solid price.

MR. KANE: All right, thank you.

CHAIR McNAMEE: The response to that is, I think we do have some kind of preliminary information that will give folks a sense of what they're looking at, and hopefully it will be better when it actually comes time to buy it. But there is a lot of uncertainties there that none of us can, including the vendors, can kind of control. I think that's the best we're going to be able to do there. Next up I have Dan McKiernan. Go ahead, Dan.

MR. McKIERNAN: I would like to follow up on Ritchie's question, because I find it interesting that there have been trackers on a number of vessels over four or five years. I think it would be useful to describe the failure rate for the skeptical permit holders. I see here 25 on commercial vessels in Rhode Island, and I don't know what the failure rate has been on that.

But I think that would help clarify the potential problems or the non-problems of the devices. Could someone speak to that, or could that be added to this answer, not only how many vessels were involved, but what was the track record. What was the success rate of the testing? Maybe that's in another slide, so I'll take my answer after I mute.

CHAIR McNAMEE: Yes, I don't think that one is in another slide, Dan, so I think the comment is a good one, with respect to, okay what is it that we want to see from these vessels. That's a good kind of metric that you offered, and I think it kind of gives us a sense of the types of things folks might be interested in knowing. I'm sure we could collect that from the various states that were kind of running these. Caitlin, anything to add to that?

MS. STARKS: I was just going to say that yes, I think we can collect that information to the best of our abilities from the folks who were testing the devices. I don't know for certain that they have a data-proved way of recording that. We will do our best to track that information down.

CHAIR McNAMEE: Okay, let's flip to one more slide, and then I will take comments from the public, as well as the Board. The next slide I think is another kind of straightforward one. The next question that came up a lot was when the trackers would be available for the entire industry that's when they need them, so they have time to plan ahead a little bit, to get them ahead of that deadline date. Of course, the answer depends on the action taken by the Board. If the program is approved, the

implementation date could be adjusted to account for any, like supply chain delays, things like that.

However, there was some indication, just from speaking with folks who have been thinking about these things for a while now that they have been talking to vendors, and there is at this time plenty of stock to the numbers that we are kind of looking at. Those types of delays are not necessarily anticipated. Some of the things we hear about in the news, and things like that. There is confidence that we'll likely be able to get these things. Now, you know the installation and the techs to do that installation and all of that stuff does take time.

It's a fair question. Anyways, that's the question, there is the response, so far anyone from the Board wishing to comment further on this? Okay, not seeing any hands, I would like to make a little time now for the public to ask some questions or make some comments on the slug of questions that we've gone through to this point. Timothy Field, I see your hand up and go ahead and unmute, and ask your question.

MR. TIMOTHY FIELD: I'm a lobster fisherman, I'm located in Massachusetts. I would like to say that I did not attend any of the prior public meetings, strictly because I was out fishing while I've been able to. I did however submit a written public comment, and I just have a few additional things I would like to add to that.

I'll try to keep it quick here. I would like to say first of all, regarding the cost. I mean that is a big part of the opposition here, because obviously the problem with this industry is we don't have the ability to pass along the cost to our consumers if we have an increased cost. But I don't really see asking the federal government to pay for this as a good alternative either.

We all know the federal government is broke, and I for one, myself, don't want to burden future generations with any more debt. The best suggestion I may come up with here is, maybe we should solicit the environmental groups, some of the groups that are pushing for this data, for them to raise money and donate it towards the fishermen, to provide for these trackers. I'm sure they have the means and the ability to do so.

It may solve that problem, and it may get the two groups working together instead of against themselves all the time. Another thing I would like to say is the lobster, we went to area management and we did that a long time ago, because most regulations are not a one-size-fits-all. This tracking may be good for some areas, but it may not be good for other areas, so that is something to be considered.

Then the other, the idea that if managers had this data already, that any decisions would have been made differently. I find myself, I see that idea as ridiculous, because BOEM controls, specifically regarding wind lease areas, energy development. BOEM controls those areas, they are the ones that define them and make the decisions for that. No input was asked from fishermen until the lease areas were already defined, and the leases were already granted. As far as I know, no fisheries management bodies or state agencies went to bat for the fishermen, and at least tried to change some of the areas or whatever. Then we're shot down, because they did not have the data to support it. I would like to say, I mean the lobstermen weren't the only ones effected by the wind farm lease areas.

A number of the mobile gear guys in Rhode Island, like the squid fishermen were, and they've had tracking requirements and all that data for years. See that obviously wasn't taken into consideration for that. Then regarding the use for the data, as far as the whale interactions. I would say we would be more willing, or it would be better useful if we knew where the whales were, and not specifically where the fishermen were.

I mean unless the fishermen's data is going to be given priority over other things, specifically meaning that areas will not be closed because it's an area

that is of high priority to the fishermen, even if it leads to an entanglement here or there. But I don't see that as a something that would happen anyway.

It seems like the fishermen's needs are always given a backseat to other matters. To me it seems like if the managers had this data available, I don't see what good it would be used for. Then for the enforcement, granted there is a need for the enforcement, but one thing that has not been mentioned is that there needs to be a very specific process.

If they're talking about our gear being hauled and inspected by NOAA or the Coast Guard or state agencies for that. I know it's done inside of state waters, and inshore areas, and you know that's different. But when you're talking offshore, it's a different thing, and the most troublesome thing that I see is what will the enforcement agencies do with the product that is currently in the traps while they inspect the gear? I'll just give you an example. Where I fish.

CHAIR McNAMEE: Tim, sorry, we've got a lot to get through here. I think you noted that you've submitted some of this in a written comment, so I would just ask that you not sort of rehash those. Is there any way you can wrap up here, so we can get to some other folks?

MR. FIELD: Okay, well, yes. One point I did not make to my written comment is that any fisherman that would like to submit his data, I mean I'm sure they can voluntarily submit it. I know a lot of guys use, I myself use a time zero, it's a plotting software, and that plots your location all the time.

Whether you save tracks or not, and that can be easily put on a USB stick and sent to anybody, if there is any need to prove where we were fishing, where we have been for the past few years or anything like that. I think that's about it for now, so thank you for your time.

CHAIR McNAMEE: Thank you, Tim. I've got one other hand from the public up, Greg Mataronas. Greg, go ahead, I'm going to be fair here. I'm not going to put a timer on you, Greg, either, but I think from here on out we may have to use the timer, just to kind of keep the meeting rolling. Greg Mataronas, please feel free to unmute yourself.

MR. GREGORY MATARONAS: Yes, thank you, Mr. Chair. Yes, so I guess I'll start with this, we went through the slides that had the public comments, and what they were in favor of, and also the AP, and both of those were in favor of status quo, but it appears from the gist of this meeting that things are just going to be moving forward regardless of the public comments and the Aps input.

I understand the need for this data, but that doesn't give a great, it's not a great look to be putting out to the industry and the public. I believe it was, whatever it was 27 to 3 in the public comments, and the AP was 5 or 6 to 3, something like that. It's just not a great look. It appears this is going to steamroll through, but just a little bit concerning.

With regards to the public hearings, they were all virtual, and I completely understand the world that we're living in right now that was necessary, but the attendance was severely limited because of that. When we went out to public comment for the Large Whale Take Reduction Plan there was, I believe about six meetings there as well, four or five up in Maine, and there were hundreds of attendees from the industry.

Some meetings had over a hundred. I attended two in the Maine area, also the one in Rhode Island, and you know the auditoriums were pretty full. I think we lost a lot of the good public input, based on the fact that it was virtual. Here we are trying to put more electronic requirements on people that don't feel comfortable attending a meeting virtually.

You guys were talking about maybe adding language, and then it has to go out to public hearing again. I actually don't think that's the worst idea in the world, because hopefully, based on the way things are looking right now, maybe we will be able

to have some in-person meetings. If we need to add this language, which is going to make the industry more comfortable, going back out to public comment may get more input from people that didn't have a chance to.

That also leads into, I believe it was Mr. White was talking about having these questions answered, and put in writing. I think that's super important, especially after hearing Ms. Kerns speak. She used the words intention and good faith effort multiple times, and as was discussed with VMS, the intention is not necessarily what is going to be the end product.

That's where we're looking for a little bit of protection, so to speak, so that way, it's nice to say the intention is not to keep us at the dock, but next thing you know we've got EPOs coming down to the dock because we left, thinking that okay, we're going to get fishing, it's 2:00 a.m. the thing is not working. We're going to go fishing, and we'll get this repaired as soon as we can when we get back.

But then we've got EPOs at the dock saying, oh, well you didn't make a good faith effort, when at 2:00 a.m. there is nothing that I can do if that unit is not working. There was the EVTRs are coming online for lobster as was mentioned. I think that seeing what type of data and the volume of data and the improvement in data is going to be very important.

This industry tracking becomes less important. It will be less reliance upon it once there is that. I am not against having this take a little longer and delay, just based on let's see what comes from those EVTRs. With regards to having the rule in place for May 1, we know how rulemaking goes, and it's very thorough, it takes a lone time. Everything has to be vetted, go to General Counsel. Suppose this announcement comes out April 1, and the vendors have all the stock.

We still have to install that. Some people may not be able to install it themselves. There are only so many electronics places. We're going to need more time than just hey, that rule is in, you have 30 days. We're going to need more time, not to mention some people may have an issue coming up with the money up front to buy these things.

Then, my final thing is with regards to using the data to identify high priority areas for fishermen. Right now, in Area 2 we have a massive closed area that, so when we have these trackers, it's going to show no usage of that area. We also know that the largest wind energy area on this coast is right off of there, right smack dab in the middle of that closed area.

The hypocrisy of it all that that is going to be allowed for whale purposes, while we're off the water with our three-eighths endlines, very limited use, but to each individual fishermen it's a significant part of our year that we're kicked out of that area, and I just don't see where this data would help us, basically.

You know we're not going to have; some guys would be fishing right in the middle. Actually, Tim Field's boat might be right in the middle of that right now, but he was forced to take his gear home, so now he'll show no effort in that area, which means that the wind farms have their clear way. I only see it as, if there is minimal effort in an area, it's ultra-important to that one or two or three fishermen.

But if they say, okay, well there is normal effort there, we're going to make this a wind energy area. It's only going to work to take areas away. I apologize for being so pessimistic, but things are not getting better for fishermen, let's just say that. I appreciate your time, Mr. Chair, thank you.

CHAIR McNAMEE: Thank you, Greg. Okay, let's keep rolling here, I have quite a few slides to get through. The next one is, how will harvesters choose an appropriate device? If we were to approve this program the next time we meet, the Commission will issue an RFQ or a request for quote, to identify available technology.

Then a working group will be formed to review and approve devices. Basically, they're going to be putting out an RFQ with criteria in it, and then seeing which vendors kind of come forward. That is how we will generate the list of appropriate devices. Then this gets back to some of the public comments we're discussing.

This nuance of what's required, and where do the states have some flexibility? Here is one of those areas. Some of the states may choose to require a specific device, while some might allow options. In that scenario where a state might allow multiple options, the Commission will provide the states information on each of the approved devices, and so a harvester can kind of look through the list and kind of understand what each tracker does, and they're all going to have to do sort of the core things that you need from the tracker. Looking to the Board, any hands on this one for clarification, additions, modifications? Alli Murphy, go ahead.

MS. MURPHY: In looking at the answer to this question, I'm definitely supportive of the first bullet about the RFQ and forming a working group to review and approve devices. That all matches with my memory of the PDTs development of this action. I guess I was a little surprised by the second bullet.

My recollection was that the full suite of approved devices would be available and used by all of the states. I guess I raise this in that it will be really hard for us to do complementary federal rulemaking, if all of the states are doing something different. It also potentially brings up some National Standard 4 concerns about treating folks from different states differently. I guess I'm wondering, is it maybe worth getting the PDT back together to hash through some questions like this?

MS. KERNS: Jason.

CHAIR McNAMEE: Yes, go ahead, Toni.

MS. KERNS: Follow up. I think what this is getting at is that we heard from some states that if they can find the appropriate funding that they may try to strike a deal with one of the tracking devices that gets approved, and say we're going to order, I'm just making something up, 500 trackers from you, to get a discounted price. Then they'll say to their industry, we're going to pay for trackers from this vendor. If you want the state to pay for your tracker, then you will need to use this tracking devise.

If you want to choose a different previously approved tracker that is not this device, then you would need to pay for it yourself. I think that is what that's getting at, Alli. It's not to say that a harvester can't choose a different device, it's just that the state would pay for that one particular one, in order to get a better deal per price. That is what we were hearing.

CHAIR McNAMEE: Response, Alli?

MS. MURPHY: Yes, thanks for that explanation, Toni. I understand that. I guess just the phrasing on this slide that some states may choose to require that all harvesters use the same device runs afoul of what you just said.

MS. KERNS: We can fix that.

MS. MURPHY: In more discussion, or at the PDT or some wordsmithing of this I think would be helpful.

CHAIR McNAMEE: Okay, good discussion. Thanks for that, Alli. A couple more hands here. David Borden, please go ahead.

MR. BORDEN: I agree with Alli. I was a little bit troubled by that statement also. I just point out that one of the difficulties in trying to deal with this is, there are quite a few different tracking devices. All the different tracking devices have different capabilities, and to some extent, what you're going to find if the Commission goes down this road, is that some individuals are going to want more capabilities on individual tracking devices.

There are all kinds of engine monitoring, bilge alarms, all that kind of stuff. If you want to spend a lot of money you can spend a lot of money on a fairly sophisticated tracking device. If you don't want to spend a lot of money, some of the states have already gotten estimates from some of the providers that the cost would get down in the $150.00 to $200.00 range for a tracker. I think you've got to be somewhat cautious about the language in this section.

I also, as a final note, I think it would be a good idea to just have a virtual meeting with the providers that manufactured these things, and let the technical people and the providers and any industry members that are interested just listen in on the discussion, talk about capabilities and so forth. We're going to get into some of those issues that would come up in that type of discussion here soon.

CHAIR McNAMEE: Next up I have Megan Ware. Go ahead, Megan.

MS. WARE: Yes, maybe to Alli and David's point. I think Maine is a state we're maybe alluding to on this second bullet here, where we've talked about if we're able to secure funding doing a bulk order of trackers, and being able to distribute those to industry at a reduced cost, in terms of per unit cost of trackers. I think that's what this is getting at.

But Alli, maybe you and I can have a conversation between now and our next meeting, or the PDT, or both, because I think in that type of situation potentially many Maine fishermen would be using the same device. I do think there are some advantages there, just in terms of getting that data with harvester reporting data and all the pathways that are needed to submit that data. But Alli, I'm happy to have an offline conversation with you to sort that out more between now and our next meeting.

CHAIR McNAMEE: Okay, thanks, Megan. All right quick note that we have five minutes left in our allotted time, and I assure you there is more than five minutes left of slides here. I will try and tick through as expeditiously as possible. I'm hoping folks can hang in, you know for a little while longer, and I'll try and get through. But I don't think there is any chance that we're not going to go overtime at this point.

Just to sort of call your attention to that. With that let's flip to the next slide. There were a lot of questions about a grace period, and this notion of kind of learning the tracker. I think the cliff notes response here is that you know once the tracker is installed it's not like EVTRs or some sort of new electronic reporting. These things are just sort of operating in the background.

There won't need to be necessarily a lot of interaction between the harvester and the device itself, and then if support is needed, for instance if it stops working or something to that effect. Between the state and/or the vendor, that is where that support will come from. You're not going to have to go to, for instance the Commission, to try and sort out your tracker issue. You will be able to do that locally between the vendor and your state agency. Any comments from anyone on this slide, this question? Okay, not seeing any hands there, let's move on to the next slide. How will states certify that vessels required to install tracking devices have done so?

The states are going to develop a process by which they will certify that installation and the activation of the approved device. That will be required for the principal port listed on the federal fishery permit, so that's how you will know which state you are supposed to kind of do that part with. There will likely be an affidavit. The affidavit will have uniform language.

That will be distributed to the states to their permit holders, and can be used to certify and approve those tracking devices. Again, for initial implementation, the states will collaborate to define a deadline by which the permit holders will need to have that tracker installed, and then finally the ACCSP, who is the sort of collector, the receiver

of the data, will be able to confirm that the trackers are activated and working properly, because they will receive that information. Any questions? Pat Geer, go ahead, Pat.

MR. PAT GEER: In Virginia we're a very small player in this, and we only have eight federal permittees that may require a tracker. Only two of them have qualifying landings, and those landings are less than, it's minimal, less than $1,000.00 a year, roughly like that. Talking to the folks in our state that may be impacted.

They have said that they would basically stop fishing for lobster if they were required to do this, because the cost of the devices is going to be more than what they land. How would I verify that they're not fishing for? If they decide they're not going to fish for these species, they won't be required to have a tracker. But how do I verify that?

CHAIR McNAMEE: Good question, Pat. Caitlin or Toni, do you want to take a crack at that?

MS. STARKS: I guess, Mr. Chair, I can try to answer that. My understanding is that if a person is fishing for lobster, and therefore reporting landings of lobster on a trip report, then they should be, from trap gear, then they should be required to have this tracker. If you see that coming in to your trip reports, then that is how you would see if a person is meant to have a tracker, and if they don't have that data going to ACCSP, you would get that report from ACCSP, and be able to see that as well. I don't know if that completely answers it for you, Pat.

MR. GEER: That was kind of, I didn't know if there was something else besides the trip reports. That's what I was thinking as well. Okay.

CHAIR McNAMEE: I don't see any other hands, so why don't we go ahead and move to the next slide. The next one is, what will be required of harvesters if their tracking device stops working? Folks were worried about having to kind of stay tied up and things of that nature. In the Addendum it indicates that upon receiving information that the device is not working, you know the first step is for that harvester to contact the state authority to report that failure.

Then once that's reported, the intention is that the harvester, making a good faith effort to repair the device, would be allowed to continue fishing while the device is under repair or being replaced. The notion of tying up to the dock because your tracker is broken, that kind of speaks to that point.

That is standard procedure for how the states will receive reports from harvesters with device failures. Whether they'll have a dedicated phone line, or if e-mail will suffice, that will be established. But in the end, the intention is to allow flexibility for these types of procedures in a way that makes sense for the states, you know whatever works for their fishermen or the facilities that they have in those states.

Finally, the procedures will take into account that harvesters may need to report device issues outside our normal business hours, so something like an e-mail can be sent whenever, and will be sort of queued up. That is the response to that one. I've got some hands there. The first one I saw was Dave Borden. Go ahead, David.

MR. BORDEN: I think this is a good example of a section of this Addendum that really needs a lot of work, and a lot of discussion by the technical people. As I indicated before, I listened to a lot of the hearings, and this issue came up at almost every hearing from a variety of different perspectives. Candidly, I'm not sure that it was well thought out, in terms of the process.

I think the reality is, with a fisherman and a tracker, the only thing that the fisherman can guarantee is that there is a tracker onboard, that it's been connected to a power source, and that it's operating. The individual will never know, unless there is some kind of light system on the tracking

device, when it's transmitting data over the phone lines.

I just conclude by saying, I think this needs a lot of work. I don't think that we should necessarily spend a lot of time on the part of the Board trying to refine this. This is an issue that should go to the technical people, and take the industry comments and try to come up with a better way of handling this. Most tracking devices have lights on them, so when a fisherman is on their boat, they start the engine, they can look into the wherever it's being housed, and look at a light that indicates that the device is on.

But the rest of this is beyond their control. In terms of the notification process, I think it would be much better to have a notification process whereby the individual is responsible with the state agency of getting the device installed, which is relatively simple, I would point out, having used one. Then thereafter ACCSP and the state agency work on a notification, where once that device stops transmitting there is some notification that goes from ACCSP to the state agency and the fisherman, telling them that rather than going the other way. Sorry to take so long.

CHAIR McNAMEE: That's okay, thanks, David, and you started in on the next slide as well, so maybe that one will go a little quicker. I do have some other hands. Next up is Ritchie White, go ahead, Ritchie.

MR. WHITE: Yes, so I think standard procedure, so that is just within the state or is that going to be Atlantic states determined standard procedure? I think a big part of this is, what is the definition of a fishermen's showing good effort to get this fixed? I think that needs to be defined specifically, and I agree with what David said. Unless there is a light on the box, and if the light is off then they have to call in or e-mail or whatever. As Dave said, this needs a lot of work.

CHAIR McNAMEE: Yes, good points, thanks, Ritchie. Next up I have Steve Train. Go ahead, Steve.

MR. TRAIN: I don't want to say the same thing that's already been said, I can echo the sentiment. You're talking about a lot of small boats in this fishery. Even though they're a little bit bigger once they get outside the three-mile-line into federal waters, they are still small boats, they're open boats.

People tend to put sensitive electronics someplace that they aren't going to get wet, and they probably can't see them. You could start that boat in the morning, see the light go on and take off, and you could be nine hours into the day and find out it shut off an hour in. You haven't reported it.

The next thing you know you're getting bordered by Marine Patrol, because you're active and you weren't supposed to be out there, because your tracker is off, and you didn't even know it. That will be a lot of boats that keep these things out of the way. That type of thing really needs to be taken into account.

MS. STARKS: If I could follow up, Mr. Chair.

CHAIR McNAMEE: Yes, go ahead.

MS. STARKS: I just want to hopefully provide some more clarification on, I think what has been envisioned by the folks who tested the trackers and ACCSP, as we were working with the PDT to develop this document. These data are not going to be going to enforcement in real time. The likelihood is that the trackers will collect data as lobstermen are heading out, and they may stop transmitting the data back to the vendors while they are out of network, cell network range.

Then when they come back into cell network, they'll transmit the data to the vendors. That data will then get transferred to ACCSP, and that may not be an immediate thing. Then ACCSP will have to get a trip report, which also may come in later, and match that to the vessel track. ACCSP has indicated that they would be able to make some kind of

algorithm to identify an issue where, say a tracking device does get shut off or stop working mid trip, and they see that in the track. It just ends half way through a trip.

They can make an automated way to report that type of issue to the state. I do think this has been thought through, maybe more text could be put into this guidance document that we've discussed, but the idea is that the states would get notified of an issue, and potentially then they would reach out to the harvester, and let them know that there is an issue, and then the harvester would be contacting the vendor to get that issue resolved. That is written in the addendum in Page 11, under the tracking, some of the specifications do kind of describe that process. I hope that provides some clarity that I don't think there is an expectation that the harvesters would know for sure at every minute whether their device is transmitting the data.

CHAIR McNAMEE: Thanks for that, Caitlin. I think that the comments are good. It seems like we need a little more fleshing out of this. I think some of it has been thought through already, as Caitlin noted, but just kind of packaging it now, so folks' kind of understand a little more of the detail is the next step here. Good discussion.

MS. KERNS: Jason, one other thing I think that I've heard people say, and I think what Caitlin and I need help from. The state itself are the administrators. I'm not necessarily sure if the technical folks that need to determine how that fisherman reports that their device isn't working, for those that can see that.

They see that the light isn't on, and they're getting ready to go out, but they do. I think that's an administrative procedure that we need the states to tell us what their plan is, in terms of setting up a reporting system. You know Caitlin and I can say that a reporting system will be established, but I can't tell you exactly what that would be for each state. We would need you all to tell us that, in order to give a response for that. We'll need some help there.

CHAIR McNAMEE: My interpretation of, I think what you said is spot on. My interpretation going back to David Borden's comments, who sort of indicated the Technical Committee, is that they are just the kind of point of contact, right? But it would be their responsibility to kind of work with their bosses or whoever, to kind of figure out what you just referred to. That's kind of how I interpreted that, just a procedural thing, rather than this is being a technical issue. Okay, I've got a few more hands here. Dan McKiernan, go ahead, Dan.

MR. McKIERNAN: I'm not sure if it's germane to this slide or a future one, but I think in this same topic there needs to be some clarification about vessel breakdown/replacement. Sometimes we get calls for a permit holder to want to use an alternative vessel temporarily, if they blew the engine and someone else is going to loan them the vessel. There needs to be a way to accommodate that, and so some language needs to be initially agreed upon by maybe the state directors, about how we would like to see that go forward, especially in consultation with NMFS.

CHAIR McNAMEE: Yes, good point, Dan. Having gone through all the questions here, I don't think that one has come up at all, so that's a good one that needs some work. Caitlin can correct me if I'm off on that, but I didn't see that in the questions anyways. I've got a couple more hands. Alli Murphy, go ahead.

MS. MURPHY: Again, I don't need to speak too long to this point, I've said it before. But I think to the extent that the states can implement consistent programs, that would certainly make rulemaking easier for us. I'll also point out, and I think I pointed out to the PDT that this is another information collection thing, that if we were to go through federal rulemaking would require Paperwork Reduction Act approval. You know that potentially could delay the rulemaking from taking place, for not having a lot of these details fleshed out.

CHAIR McNAMEE: Dave Borden, go ahead, Dave.

MR. BORDEN: Yes, thanks, Mr. Chairman, I'll be really brief. Alli just made the point about consistency, and I think it's really important for the Board, and whoever is going to work on this, to keep in mind that you've got fishermen, Maine fishermen fish out of Massachusetts ports. Maine fishermen fish out of New Hampshire ports, and vice versa. Consistency in a policy would be really beneficial from a communications perspective.

CHAIR McNAMEE: Okay, we ran out of hands, so let's flip to the next slide, please. We've kind of started in on this already, but as mentioned by a couple of folks, how will the harvester know if the tracking device is working, as mentioned by a couple folks. They are kind of device specific, but a lot of them have indicator lights on them.

Then finally, it won't be the sole responsibility of the harvester to know that the device is properly transmitting data. The vendors and the ACCSP will also be on the team there to sort of notify folks if something seems to be not working correctly on their device. I think Caitlin, you sort of spoke to this a moment ago.

But if there is anyone else who has any remaining comments they want to make on this aspect, please raise your hand. Okay, not seeing any hands, so let's flip to the next slide. This one had to do with some of the technical aspects, so one question that people had was about the power draw from the devices, people concerned about burning their battery out and the bilge pump not working and things like that.

In general, the tracking devices, the ones that were studied, consume very little power, even at the kind of high ping rate that we're requiring. There is a little bit of technical information there, as far as the exact draw, so folks can make a judgment there. But it's generally a very low draw. Another thing is the tracking device will not require power from the vessel when the vessel's engine is off.

Therefore, it's not drawing from the vessel battery, because many of them include an internal battery for those periods. Then when the vessel is in port, the proposed requirements stipulate that it will drop down from a high ping rate to one ping per day, just to kind of check in on your boat, to make sure it's still there.

That is this kind of sleep or low-power mode. Then I would just add in here the second technical question was, how do the trackers perform in cold weather. All of the devices tested were run on lobster vessels throughout the winter months. I think this gets back to one of the earlier slides, where we said we'll try and capture some of these other metrics from the vessels that did use them. But this is one of them.

We do have information from them on vessels that were run during the cold months, so we have that information. I think the implication is that they performed perfectly fine and the cold weather wasn't an issue for them. Any hands on these two items here, which are technical in nature? Dave Borden, go ahead.

MR. BORDEN: Yes, this is a question, thank you, Mr. Chairman. On this fourth bullet, the home port. I completely support that concept, but if a tracker is only going to ping itself once a day, how does it know at that rate that it hasn't moved? I think that is a technical question for someone like Bill DeVoe.

CHAIR McNAMEE: Maybe I'll start with Caitlin, to see if she has a response first.

MS. STARKS: I can try, Mr. Chair, but I really do think Bill might be a better person to answer it. I think that even if it's not actively recording the location with a ping, it still knows where it is. It still knows its location, and would be able to turn the ping rate back up as soon as it leaves that berth location. I'm going to leave it at that and see if Bill can maybe add some finer detail.

CHAIR McNAMEE: Yes, Bill, I see you in the queue there, please feel free to jump in.

MR. WILLIAM DeVOE: Yes, to answer David's question. Caitlin is correct that in some implementations, you know if the device was actually still on, it would know its location but know when it was moving. The other concept that we're piloting is that when the device, particularly if it has a battery internally like many of them do.

If the device is not on external power, then that's a pretty good indicator that it doesn't need to be pinging. The expectation is that while the boat is running, while the engine is running and fishing operations are taking place, that the tracker will be powered externally. The loss of that external power is a pretty good indicator that the tracker doesn't need to ping at that faster rate.

CHAIR McNAMEE: Thanks for that, Bill. A couple of variations, depending on the tracker there. But good response. Dave, follow up?

MR. BORDEN: Thank you, Mr. Chairman this is another quick one. Bill, in the case of, and this is just an example for the question. In a port situation like New Bedford, where some of the boats are on the Fairhaven side, and they get bait and fuel on the other side of the harbor, which in some cases might be a mile and a half. They will be able to move in that area before the ping rate goes up, or would the ping rate go up and then go down again?

CHAIR McNAMEE: Bill, if you have a response, please feel free.

MR. DeVOE: Yes, I think that depends on which sort of scenario or throttling the ping rate back using. If the ping rate is being slowed down within a certain distance of a location that has been determined as home port, then yes, what you're saying David, the ping rate will be slower within that entire bubble is absolutely correct. The other scenario, if it's just that you're doing a slower ping rate when you're on battery power, which is obviously the scenario that I'm leaning toward more and more, or some combination of the two.

We've had really good results with the home port detection, in terms of it's really nice to get an alert when the vessel is going in and out of port. In terms of actually managing the ping rate, it seems like the easier solution is to have the tracker connected in such a way that it perceives external power when the engine is on. In that scenario, as long as the engine was on it would still be pinging at a one-minute rate when they were going for fuel and ice and so forth. Thank you.

CHAIR McNAMEE: Good discussion. I'm not seeing any more hands, so let's flip to the next slide. This was a question about VMS devices being acceptable as an alternative for buying a second track, you know one of those cellular devices. The Addendum doesn't specify that VMS devices can't be used.

There are some considerations that make VMS devices undesirable for this program. You know these are satellite technologies, so the cost is higher, and so that could be if they are in the groundfish fishery or something like that, that is the reason they have a VMS. If the ping rate is something less, they would need to ramp that up.

That would add to what is already a pretty expensive device, so it may in fact be cheaper to just sort of purchase the second device. Additionally, the data collected from the VMS won't be going to ACCSP, that gets stored at NOAAs Office of Law Enforcement, and so that increases the bureaucracy around the data access to some degree.

Then finally, if a VMS device were approved by the Commission Work Group, in other words it meets the required criteria for the program, then it would be accepted, it would be a viable device to use, but it would still have to have that one-minute ping rate, so that part would have to match up. That is the discussion on VMS. Does anybody need anything further there, other questions on the

swapping in of a VMS or the use of an existing VMS. Dave Borden, go ahead.

MR. BORDEN: I apologize for talking this much. This is one of the issues that we raised in our letter. It was raised to my attention, to the Association's attention by one of our members in New Hampshire, who has VMS on all their vessels as a communication service. The VMS provides a number of other services other than location information.

For instance, up-to-date weather reports and the like. He raised the question of being able to use his existing VMS, and just having a higher ping rate. I explained to him that that would cost him more money than just putting a tracking device. His basic reaction was, he didn't want to have duplicate electronics if he could avoid it on the boats.

He has expressed a willingness to work with whomever, New Hampshire Fish and Wildlife, the technical people or whatever, and do a little experiment using his own money to try different ping rates with his VMS, if that would be something that would have appeal. I would also note as a final point, that Maine Lobster Association raised this same concern.

CHAIR McNAMEE: Megan Ware, go ahead.

MS. WARE: Yes, I saw this comment a couple of times in the public comment record. I guess the question I would have, and maybe this is for Alli Murphy is, if there was a situation where VMS was used with, I'll say a 10-minute ping rate, something faster than the 30 minutes for scallops or the hour for groundfish.

I'm curious what NOAAs thoughts are on the implementation of that. I mean would that require a different declaration code for the lobster fishery, so you would have to declare into the lobster fishery? Would that ping rate apply to all trips, kind of as like a most restrictive rule, or would it just apply to lobster trips? I'm curious if NOAA has any thoughts on that.

CHAIR McNAMEE: Good question, Megan. Maybe a little technical for an on-the-spot response, but I'll give a shot. Alli, if you want to jump in on that.

MS. MURPHY: Yes, Megan, those are certainly good questions. I guess on the applicability of the ping rate. I wouldn't necessarily put it all on NOAA Fisheries, I would say, you know it might be up to the Board or the PDT to review whether that meets the goals of the program. I haven't really workshopped any ideas around with modifying our regs for VMS.

I think you make great points that typically we, when implementing regs for a program, that the most restrictive rule applies so that fastest ping rate would apply to everything. I haven't brought this idea up to VMS folks yet, but I think it would probably lead to some heartburn. But I'm certainly happy to have some conversations going forward.

CHAIR McNAMEE: Okay, thanks, Alli, and yes this could be another area where we kind of use this time between now and when we meet next to flesh this out a little bit more, so thanks for that. Okay, I don't see any more hands, so let's move on to the next slide. There were a lot of questions that came up about the data itself.

The first was, who will be able to view the vessel tracking data, and the response to that is the vessel tracking data will be protected under state and federal confidentiality laws, and that prohibits the disclosure of that confidential data, or any data that can lead to the identification of either individuals or individual contributions to the dataset.

Access to confidential data is closely controlled. There are all sorts of systems that need to be followed and waivers signed, and things of that nature, to be able to gain access to confidential data. However, the harvesters themselves won't be able to access and distribute their own data as they desire, it's theirs, or yours. Of course, you would be

able to get your own data, but as far as anyone else getting that data, it will be tightly controlled.

That's the response there, questions on this one? Looking for hands. Okay, not seeing any hands, let's flip to the next slide. I can't believe we are getting close to the end here. Two more, and then I will go back out to the public at that point as well. I've got two on here, first is, how will these data be used by law enforcement.

The tracking data won't be available to law enforcement in real time, and it won't be a primary source for making a case. In other words, it's not envisioned that somebody is going to go to court holding the dataset, and trying to use that to make a case. However, law enforcement may use the data to support investigation.

This is the notion that they see odd going on in the data, and then sort of use that as information to then go out on the water to investigate. Access to data by law enforcement personnel is exactly the same as access by any other individual, in that the data are protected by the state and federal confidentiality laws, and require relevant, nondisclosure agreements for release. There is some information on data use by law enforcement, and then a kind of subsequent question is, how will data be presented while still maintaining confidentiality. The ACCSP, they have a policy for confidentiality that requires that any data summary that is publicly disclosed, must include information from at least three dealers, three harvesters, and three vessels to be considered nonconfidential. It gets pretty aggregated before it can be released per the ACCSP rules, which are all very clearly defined to folks when they sign those agreements. Looking for hands, questions on these two questions. Megan Ware, go ahead.

MS. WARE: I'll start by saying I appreciate kind of the first answer here under the first bullet, about how tracking data is going to be used. I think it's really important to note that this is a tool for patrol agencies. I think maybe there is a perception that enforcement is going to be behind their computer watching tracks, and I don't think that is a reality of what is going to happen. I know that's not a reality of what's going to happen, so I think it's just important to be clear on that.

I did have a question about the third bullet under the first one, access to data by law enforcement personnel. I'm hoping for a little more information about how that's actually going to work, or if that hasn't been discussed, maybe this is something the PDT could work on. For example, is law enforcement personnel going to have to have an ACCSP account that they log into to access this information, or what is the vision here for how enforcement will actually access tracking data?

CHAIR McNAMEE: I will look to, just to make a quick comment, my guess is it would be similar to like how a Technical Committee member sort of interacts with ACCSP data, the waivers they have to sign and all that sort of thing, but I'll look to Caitlin maybe to give a little more detail on that.

MS. KERNS: I'm actually going to step in for Caitlin, I think I did a lot of this research on my end, Jason.

CHAIR McNAMEE: Yes, go ahead.

MS. KERNS: I actually will ask Julie DeFilippi to answer this. But to my understanding, law enforcement, in terms of accessing other state data. They already have to sign. I think you have reciprocal agreements with the JEAs, and other NDA forms as a law enforcement officer that they undergo.

It is my understanding that through their law enforcement positions that they've already somewhat signed confidentiality agreements, but Julie, you can correct me if I'm wrong. Then once Julie answers that question, Jason, I just have an updated bit of information about FOIA requests that the Board had asked about as well.

CHAIR McNAMEE: Thanks, Toni, Julie, please jump in. Yes, I see you there. Go ahead, Julie.

MS. JULIE DeFILIPPI SIMPSON: Toni is right that there might be additional forms that law enforcement may sign, but ACCSP sees law enforcement as with no ill intent, just like anyone else, essentially. The law enforcement agent would have to have nondisclosure agreements on file with the agency that owns the tracking data. There would have to be an additional NDA signed similar to how any states data manager, even if they have a form signed locally with their agency, will still need to have one on file with ACCSP in order to access the data. Essentially, there has to be a form on file with the ACCSP, in order to have access to the data, similar to anyone else that would want access to the data. Does that answer the question asked?

CHAIR McNAMEE: I thought that sounded like a good answer, Julie, thank you for that. Toni, did you want to jump back in?

MS. KERNS: Yes. Just really quickly. I just wanted to let folks know that the Commission itself is not subject to the same rules as federal agencies are under FOIA requests. But I did check for both agencies about FOIAs or what the Commission calls information requests.

Neither body would give out any information that is confidential to a FOIA request. It still would have to hold within the standards that we follow under through the different confidentiality laws, either through the states or the federal government. It was one of the issues that have been raised during the meetings.

CHAIR McNAMEE: Okay, thanks for that, Toni, and sort of looping back, I think it was Megan who sort of initiated the discussion. Megan, are you good with all of that?

MS. WARE: Yes, I am, thank you.

CHAIR McNAMEE: Okay, I've got another hand, Maureen Davidson, go ahead, Maureen.

MS. MAUREEN DAVIDSON: I think I'm listening. I appreciate the effort that's being made before final action is taken on this issue. I'm also looking at the end results of all of this effort, not just us coming to a final action and we're putting the trackers on the vessels and requesting the information. What I would like to know is, at the end, who is going to take the data that we're collecting at the end of some specific time, and use the data to get a final analysis on.

More details on just where our lobstermen are fishing. Is it going to be the state? Is it going to be NOAA? Is it going to be ACCSP? I just would want to know like, what do we see happening in the future with this information, when we're going to make a decision about critical lines. We're going to make a decision about turbines in the ocean. Who is going to get this final data that we collect?

CHAIR McNAMEE: Yes, thanks Maureen. Maybe I'll start with Caitlin for a response.

MS. STARKS: My understanding, Maureen, is that the data would be used for all of those purposes that you mentioned. I think similar to when we have a stock assessment, there would have to be a data request for a certain set of data, timeframe, geographical frame, what have you, and that request would be made specific to the purpose for which it's going to be used.

If we use the stock assessment as an example, the Stock Assessment Subcommittee would, the states would rather, provide their state data for that purpose. I think for any of those issues that you brought up, we would have a similar process, where the states are requested to provide their data for that use. The states would be the owners of the data, and would have the ability to provide it.

CHAIR McNAMEE: Are you good with that response, Maureen?

MS. DAVIDSON: If I may follow, or just a comment. I guess when I was thinking about the data that we're collecting here, and the effort that we're putting in with our fishermen. Then what we're doing now is just really establishing a new means of collecting more detailed fishing effort, without necessarily having a specific project in mind.

I mean we have projects in mind, but it's not like at some point we are going to make some sort of decision based on this extra data that we're collecting. It's just sort of like a VTR or a vessel monitoring system or something like that. I guess I was imagining that we would say something about the northern right whale or you would say something about, well specifically the whale, I guess is what I'm thinking about. But I guess that's not really the purpose of this?

CHAIR McNAMEE: Maybe I'll defer. I appreciate your comment, but I'll defer to Caitlin, and maybe Caitlin, I might have a comment too, but I'll go to you first.

MS. STARKS: It does say, it describes in the Addendum the various purposes for which this data was imagined to be used, and the right whale issue is among those. It's one of the important reasons that this Addendum was initiated, to collect these data. I don't know if I agree with the sentiment that there was no project in mind for the data.

I don't think that we put the details of exactly how those data would be used in the risk reduction models, or exactly how they would go into the assessment, because those processes are very complicated and hard to flesh out, and I don't think there is any way the PDT would be able to actually put those specifics in there. But those are the projects for which the data were originally envisioned, and I'm sure there are more applications that they could be used for in the future, if that is the will of the Board or state agencies.

MS. KERNS: Jason, if I could just add to that. It's not that, you know Caitlin is correct that these models that get used are complicated, but the enhanced data that the trackers would provide, will provide an opportunity to improve the models, so that we'll have perhaps new models, new applications of the data that we can't foresee until we have that information, the modelers can look at it and make decisions about exactly how they would be used. We just can't foresee that at this moment, to be able to put the exact application in the document as well.

CHAIR McNAMEE: Maureen, that may be, this one was something that came up during the Rhode Island hearing that I attempted to address. This question came up, and I attempted to address it. I don't think I did a very good job, for all the reasons that Caitlin and Toni just offered.

But I do think while we absolutely cannot create an exhaustive list of exactly how this data would be used. I think we could do a little more there to kind of give folks some confidence that we're not just sort of collecting the data, I don't know, building the airplane as we're flying, I think is the sort of common term. I think we have thought about this. There are uses that people envision for the stock assessment or the risk model for right whales, for spatial planning. Maybe that's another element that we could kind of flesh out a little more between now and when we revisit this. Good comments. Anything further there, Maureen?

MS. DAVIDSON: No, thank you. Actually, you clarified the issue a lot more in my head. I guess I was always thinking of some sort of end plan, end point, end purpose that we would sort of get an answer on something. But I understand, I appreciate everyone's explanation and the discussion. It has clarified the point for me, thank you.

CHAIR McNAMEE: Great, thanks, Maureen. David Borden, go ahead.

MR. BORDEN: A quick point on the last bullet. Having had to live by that rule in a prior existence I

had. It works well, it protects the industry. But in this case the data that is going to be collected, some of this data is going to be so sensitive that you could find a situation where, even if the technical folks adhered to that last bullet, that it would be releasing too much information.

In other words, I can give you a simple example. If you had a 10-minute square where you had 10 dealers and 50 fishermen that were fishing in it that met that requirement. You would not want to put out a heat map of catch per unit of effort that showed the catch in that, and contrasted it with two abutting 10-minute squares. I think we've got to be sensitive to that going forward, and maybe be overly conservative on the release of any information.

CHAIR McNAMEE: Good comments, David, thanks. Okay, no more hands so let's flip to what is the last slide, thankfully. In this one, these were a series of questions that we didn't necessarily have responses to, but we just wanted to kind of round out the list here, and note that some of these probably need further interaction with the Technical Committee, the PDT or the Law Enforcement Committee.

The first one is the one we were just talking about with Maureen, so I won't harp on that one. But it's how the data will be used, with a little more specificity, and I think we can do that, at least by way of some examples. How do fishermen get access to their data, like what data products will be available to them?

I don't know how useful it would be for them to get a big matrix of latitude and longitude information, and so we should probably think through what types of data products, and maybe find out what types of data products the fishermen want. That doesn't need to be resolved immediately, but we can work on that and that can evolve through time.

What determines if track data meet the requirements once tracks are matched with reported trips. I'm sorry, who determines that. It's kind of a governance question there. What is the process when an issue with tracking data, in other words data inconsistent with specifications is identified? Who enforces the regulations, the states or the federal government? Finally, what are the consequences of individuals not adhering to the regulations. In other words, if they aren't using a tracker. Those are some final questions that we heard, didn't necessarily have responses to immediately, but we can refer those out to some of these other committees that can help us flesh those out a little bit. Just looking to the Board right now, anything you want to add to any of these? Have we missed any other things that you heard? Anything else anyone wants to add at this point? Looking for hands.

MS. KERNS: Jason, since there aren't any hands, I think that moving forward here, it's the expectation, from what I'm hearing from you all is that you want to come back and meet again in roughly a months' time, in order to reconsider this document. There are a couple of questions in particular on this slide that we haven't really discussed too much, that I think they are more administrative questions than PDT, TC or Law Enforcement Committee questions.

Maybe that we'll get a little bit of input from some of those groups, but that these are things that we're really going to need the state administrators to help us with. Caitlin and I probably will ask for a call with you all relatively quickly, so that we can try to flesh out some of these questions that are administrative procedures versus technical things that we can work on with the various committees. I just wanted to kind of put that heads up out there, and so for you all to be thinking about some of these things prior to us reaching out, but to have it on your radar.

CHAIR McNAMEE: No, that's awesome, Toni, really good point. I think that's a great approach, because like you said, I think it will take a little bit of discussion, like we were talking about earlier, trying to bounce that to a Technical Committee representative. Let's just go straight to the

administrator themselves. I think that's a great idea. One other thing I thought I would mention. Well, actually let me go, Roy, you haven't had your hand up yet, so go ahead, Roy Miller.

MR. ROY W. MILLER: Very quickly. How will these hearing questions and responses be incorporated or disseminated to the public? Will they become an appendix to the addendum? What is the plan for that? Thank you.

CHAIR McNAMEE: That is awesome, Roy, that's exactly where I was just about to go. Right, I think we've gone through now 15 minutes over time, kind of working through these, and we know there is some work that is going to occur between now and the next time we meet. Some of that work is going to have to happen at the state level.

I can ask Toni or Caitlin to kind of check me, but what I envisioned happening was everything we talked about today and that subsequent work, is going to go into a document. That document will then be distributed out to the states, and then the states can interact with their constituents in whatever manner they think is most appropriate. It might be a workshop.

Again, sponsored by the state and not the Commission, but a workshop or posting on a website or something of that nature. But what I envision is there is a step in this process for the states to kind of grab a hold of this and get it out to their folks. You know they've gone through the trouble to kind of get these questions in front of us. We're now going to try and do a better job of getting direct responses, clear responses to these questions, and getting it back out to them so they can see that. I don't know if anybody has a comment on that, but that is what I envision. Maybe I could start with Toni or Caitlin, is that kind of what you guys were thinking would happen as well?

MS. KERNS: Jason, Caitlin and I will update the FAQs. We'll add these additional questions that are here, to the extent of some of them we can answer, and add some things to the other questions that were here. Then if it is the desire of the Board, we could post the questions on the lobster page, the FAQs, as well as obviously post responses as part of the meeting materials.

WE didn't do that before, because we weren't sure what the states wanted us to do. If that is the desire of the Board to post the answers to these questions in meeting materials, we can. But in order to have additional discussions or engagements with fishermen, we envision that to be up to the individual states.

CHAIR McNAMEE: Great, thanks, Toni. A couple of hands up here. Ritchie, go ahead, Ritchie White.

MR. WHITE: Yes, I kind of envision pulling this document together, then providing it to the Board, to see if the Board then, if there are any Board members that have any additional clarification. The states then that want to hold some kind of public meeting then can do that. Then listen to questions and input from the fishermen, and then after that then a meeting would be scheduled. I guess my question would be to staff. Does that look that that process could be doable in a month?

CHAIR McNAMEE: Toni or Caitlin.

MS. KERNS: Caitlin and I can turn around the questions as they are today. How fast some of these additional questions that require administrative processes. That is a little bit back to the Board. We can't answer those questions, we need the states to help us. I don't know how fast the states can turn around those questions.

We would like to try to get a meeting on the books sooner than later, so that we don't miss opportunities to save your dates in your schedules. Early April we start to overlap with some of the Councils, so we would just need to get a date on the books relatively quickly.

CHAIR McNAMEE: Is that okay by you, Ritchie?

MR. WHITE: You know I guess it will depend on how fast we see the new document. I mean I think we are going to need, I'm kind of speaking for Cheri, but I would think we're going to need a couple weeks to pull together a date to meet with the fishermen. Maybe it can work. It seems pretty tight, but hopefully.

CHAIR McNAMEE: Thanks, Ritchie, agreed. Cheri, go ahead, Cheri.

MS. PATTERSON: Yes, it will be a tight fit. But I think we can make it work, if we can get the information back as soon as possible. Thanks.

CHAIR McNAMEE: All right, I would like to offer another opportunity for any public that might still be hanging on out there, to offer any comments. I kind of took a pause in the middle there, and now I'm taking another opportunity. I think we will, you know I would love to end this as close to four as possible, so I think we will pull the timer up for folks.

But I do want to offer another opportunity for any public that wants to offer if we've missed something here. I'm looking for hands from the public. Okay, maybe the fact that this is going to come back out to the states, and then we'll be convening again is good enough. All right, so that is all of the questions everybody.

I think we are pretty close to wrapping here. We've talked a little bit about next steps. I think we have a decent sense of that. Is there anything anyone on the Board wants to clarify before we start to think about adjourning? I'm not seeing any hands. Why don't we go ahead?

ADJOURNMENT

CHAIR McNAMEE: Is there anyone who wishes to make a motion to adjourn? Cheri.

MS. PATTERSON: Yes, Sir.

CHAIR McNAMEE: There is a motion to adjourn, is there a second? Ray Kane seconds, I'm guessing. With that, are there any objections to adjourning the meeting, and thanks from me to all of you for hanging in for so long. Not seeing any hands in objection, that's a wrap. Thanks everybody, meeting is adjourned.

(Whereupon the meeting adjourned at 4:00 p.m. on February 22, 2022.)

Atlantic States Marine Fisheries Commission

FAQs on Electronic Vessel Tracking for American Lobster and Jonah Crab

March 15, 2022

This document responds to questions raised during the public hearings on American Lobster Draft Addendum XXIX and Jonah Crab Draft Addendum IV (henceforth referred to as the Draft Addenda).

1. Who will pay for the tracking devices?

Industry members will be responsible for covering the costs associated with trackers, including the purchase of the tracker and service fees.

At this time, there are no dedicated funds to pay for trackers. Commission staff have been working to find dedicated funds to assist in paying for a part of the cost associated with trackers (device and/or a year of service funding). In working with Congressional staff, trackers are eligible for funding under the House and Senate Report Language for the FY 2022 budget. Congress is scheduled to approve the FY22 federal budget during the week of March 14th. The tentative budget language (below) includes the following support to help defray the costs of electronic vessel tracking:

$14,000,000 shall be provided to States through the Atlantic States Marine Fisheries Commission to cover costs incurred by the fishing industry to comply with the final 202 l rule to modify the Atlantic Large Whale Take Reduction Plan (ALWTRP) (FR-210827-0171), as well as additional uses outlined below. This assistance may be used by the relevant States to help defray the cost of compliance with new regulations, including for gear modification, configuration, and marking within the Northeast lobster and Jonah crab fisheries, both in Federal and State waters. Additional eligible uses of the funds may include implementing electronic tracking requirements within the Northeast lobster fishery and research to inform future management actions, including in preparation for potential subsequent modifications to the AL WTRP. Funding to the States shall be proportional to the number of active federally permitted lobster trap harvesters in each State, and no State with at least 20 active federally permitted lobster trap harvesters shall receive less than 4 percent of the total funding.

2. How many vessels were involved in the testing of tracking devices?

In Maine, tracking devices from three vendors were tested on 18 lobster vessels. In addition, Maine has also maintained trackers on 20 urchin vessels since 2017, as well as several Marine Patrol vessels. In Massachusetts, tracking devices were deployed on five vessels during pilot testing. Vessel trackers were also deployed on a research vessel and recreational vessel to test the integration of tracking devices with eTrips Mobile. In Rhode Island, from 2019 through 2021 multiple cellular tracking devices were tested on three state-owned research vessels as part of an ACCSP-funded research project. Additionally, since 2019 over 25 cellular tracking devices have been deployed on commercial vessels in

Rhode Island as part of a pilot aggregate landing program. This program includes lobster vessels as well as trawlers, gill netters, fish potters, and rod and reel commercial vessels.

The Electronic Tracking Pilot Programs established by Addendum XXVI tested several types of cellular tracking devices (the final reports for the Maine/Massachusetts and the Massachusetts/Rhode Island are attached). The costs associated with cellular tracking devices tested during the pilot program ranged from $150 to $650 for the initial purchase of the tracking unit, and annual data service plans that would meet the proposed tracking requirements ranged from $191 to $420 per year. These costs are provided as examples only and may change dependent on which devices are approved for use in the fishery, as well as any volume-based purchasing plans provided by those companies after approval. The pilot programs are discussed on page 3 of the Draft Addenda.

3. What was the failure rate of the devices during the testing period?

Malfunction or failure of the tested tracking devices was rare. States provided anecdotal information on device issues that occurred during testing, summarized below.

In Maine during the original pilot project, no units failed in terms of being rendered inoperable. One Rock7 unit locked up, but it reset after the boat was turned off for long enough for the internal battery to drain and self-reset. The biggest cause of devices failing to transmit data was failure of the harvester to provide power to the unit while fishing. In the Blue Hill Bay mandatory tracking area in Maine, around 30 tracking devices (older model Faria-Beede trackers) have been used since 2016. These units do not have batteries but rather depend on an external power supply. The harvesters would routinely switch them on and off as they crossed in and out of the mandatory tracking area. Several units completely failed over the course of the project, and during the first year there were some issues with the wiring harnesses not being marine grade. Conversations with Faria Beede show that modern units are capable of operating successfully in the marine environment.

In Massachusetts, five devices were deployed on commercial lobster vessels during the pilot project. One device had a failed installation, and the problem was unable to be remedied by the vendor. Additionally, three devices were deployed on a research vessel and recreational vessel with no device failures. One device in the latter study stopped transmitting temporarily when crew removed the power from the device and the battery eventually died after several trips. This was a user error rather than device failure.

In the pilot aggregate program in Rhode Island, about 25 captains were required to have cellular tracking devices. Anecdotally, there were no reports of failures of devices once the devices were properly installed on each vessel. Captains were responsible for the purchase and maintenance of their own cellular trackers, so Rhode Island state managers only would have heard from harvesters if they had self-reported failures.

In response to this information, it is recommended that harvesters confirm with device vendors that their tracker is properly transmitting information after installation of the

tracking device. This would ensure that the device is properly installed prior to beginning fishing. Secondly, as described in question 6 below, vendors will be required to provide customer service plans that include both basic troubleshooting assistance (i.e. power supplies, device location) and complete failure replacement plans.

4. **When will the trackers be available to the entire industry so they have plenty of time to obtain them prior to the implementation deadline?**

   This answer will depend on the action taken by the Board. In approving the program, the Board has the prerogative to set the implementation date while keeping in mind the time needed for the working group to request and approve vendors, ACCSP to complete development to support the program, and to allow harvesters enough time to obtain and install devices.

5. **How will harvesters choose an appropriate device?**

   If the Board approves this program, then ASMFC will issue a request for quotes (RFQ) to identify available technology, and will form a work group to review and approve devices that meet the required criteria for use in the fishery. It is possible some states may offer financial assistance to harvesters using a particular device. However, harvesters will ultimately be able to choose from the list of approved devices. ASMFC will provide the states with information on each of the approved devices to inform harvesters' decisions. Information collected by ASMFC to help harvesters choose the device most appropriate for their needs will include complete device specifications, complete costs, cellular providers and bands, power supply specifications, installation instructions, customer service policies, accessibility of viewing personal tracking data, etc. This topic is discussed on page 10 of the Draft Addenda.

6. **What level of customer service will vendors be expected to provide to harvesters?**

   Page 9 of the Draft Addenda describe the basic customer service requirements that vendors will need to meet to be approved for this program. For responding to customer service inquiries regarding devices, power issues, API data needs, among others, vendors must be able to respond to the customer, including harvesters, state managers, and ACCSP, within 24 hours. ASMFC will request information from vendors about their customer service capabilities as part of the RFQ. If a device malfunctions, it is recommended that vendors be able to replace or repair devices within a reasonable timeline. It is also recommended that vendors be able to provide support to harvesters in viewing their personal tracking data using available online platforms or applications provided through the vendor.

7. **Will there be a grace period for using trackers to account for the learning curve needed to use the trackers?**

   Harvesters will not have to operate the devices so a learning curve would not be necessary, after the installation process is complete. Devices would be installed on the vessel following detailed instructions provided by the vendors, and then would operate automatically.

Device vendors can provide harvesters with a confirmation during installation that devices are properly transmitting data to the vendor.

8. How will states certify that vessels required to install tracking devices have done so?

Page 11 of the Draft Addenda discusses certification of tracking devices. States shall certify the installation and activation of approved vessel tracking devices for permit holders whose principal port listed on the federal fishery permit is within their state. Principal port is contained in NOAA Fisheries Greater Atlantic Regional Fisheries Office (GARFO) permit data which will be made accessible to states. An affidavit with uniform language will be distributed by the states to permit holders (see Appendix B for affidavit language in the Draft Addenda). This affidavit will be used to certify an approved tracking device is installed on each vessel and is activated for transmitting spatial data. Each affidavit must be signed and returned to states prior to departing on the first fishing trip (regardless of landing state, trip type, location fished, or target species) after the program implementation date. For initial implementation of this project, states will collaborate to define a deadline by which permit holders will need to have a certified tracker installed. A state may require additional information to certify installation such as photographs, notarized affidavits, or inspections, but this is not required by the Draft Addenda. States will be able to confirm that trackers are activated by reviewing vessel location data in the ACCSP database.

The following process for certifying device installation is recommended:

1. Permit holders required to use a tracking device would be notified by the state of the requirement to install a tracking device and the effective date.
2. Notified permit holders would be required to return a signed affidavit to the state which indicates that either an approved tracking device is installed on the vessel and is activated for transmitting spatial data, or that the harvester will not fish with trap gear for the duration of the fishing year. Permit holders will be allowed to fish once they have submitted this affidavit.
3. Once the affidavit is received, if appropriate, state staff will verify device connectivity and/or signal transmission.
4. The state will send notification to the harvester to confirm that the device is functioning and spatial data is being received. However, fishing will not necessarily be contingent upon receipt of this notification.

9. How will states determine if a harvester is not required to have a tracker?

GARFO will provide the states with up-to-date information on American lobster trap gear area permit ownership, enabling states to identify permit holders required to have trackers and complete the process of installation certification. If a vessel that is required to have a tracking device reports American lobster or Jonah crab landings with trap gear, but has not yet provided certification that a tracker has been installed, the state will be able to identify an inconsistency with the addendum requirements. Communication between states will

need to occur to identify lapsed vessels. This is especially true where vessels may not land in their principal state.

All permit holders who are required by their permit to have a tracker will be notified of this requirement and the effective date, and must submit an affidavit to the state to indicate that either they have installed an approved tracking device on the vessel, or that they will not fish with trap gear for the duration of the fishing year. This will allow states to identify permit holders that are not permitted to land lobster or Jonah crab taken with trap gear during the fishing year.

10. What will be required of harvesters if their tracking device stops working?

The Draft Addenda indicate that if a harvester recognizes that the device is not working (e.g., indicator light is off and they cannot resolve the issue), the harvester must contact their state authority to report the device malfunction/failure. In other cases where a harvester in unaware of a device malfunction/failure, the state will inform the harvester that the device is not working. In either case, once the state and harvester are aware of the device failure, the harvester may continue fishing without a working tracker for up to two weeks while the device is under repair or being replaced. If the tracker has not been repaired or replaced after two weeks the harvester would not be permitted to land lobster or Jonah crab without authorization from the state via a letter of authorization or state equivalent.

Each state will establish a standard procedure harvesters must follow to notify the state of device failures. For example, a state may establish a specific phone line, text line, or email for contacting the state authority about a device failure. However, the intention is to allow flexibility for procedures to vary among the states, recognizing that each state has a unique administrative structure and capacity. Procedures will take into account that harvesters may need to report device issues outside of normal business hours.

11. How will a harvester know if the tracking device is working?

This will depend on the specifications of each device. Most devices will have an indicator light showing that the device is receiving power. It will not be the sole responsibility of the harvester to know that the device is properly transmitting data. Device vendors and/or state staff will identify device failures and contact permit holders as needed.

12. What is the process by which states would be notified of a device failure or issue with vessel track data by ACCSP?

ACCSP will compare and match received trip reports and tracking data on a routine (likely daily) basis and generate reports on non-matched trip reports and tracking data that are accessible to state managers. This will include a report that displays trip reports without tracking data and a second report with tracking data that does not have an associated trip report. A buffer window will be included to accommodate reporting requirements that may allow for a slight delay in submission of trip reports.

13. Will the tracking devices draw power from the vessel battery?

The tracking devices consume very little power even at the required one minute ping rate. None of the devices tested had a maximum current draw at 12 volts greater than 500mA, and average nominal running current was much lower, with average running current around 150mA. However, the ideal situation is that the tracking device will not require power from the vessel when the vessel's engine is off (and thus draw from the vessel battery). Many tracking devices now include an internal battery that can power the tracker after external power is lost. Since the proposed requirements stipulate that only one ping per day is necessary when the vessel is at berth, the tracking device will ideally enter a low power state and "sleep" between daily pings. There are at least two tracking devices available at present that have this capability. For these devices, the harvester would connect the device such that it only receives power when the vessel engine is running. Power losses during fishing would be detectable by the resulting decreased ping rate in the vessel track, and repeat power losses during fishing could result in further investigation or enforcement action.

14. How do the trackers perform in cold weather?

All devices tested were run on lobster vessels throughout the winter months in New England states.

15. Would VMS devices be accepted as an alternative for a tracking device for this program?

The Draft Addenda do not specify that satellite VMS devices may not be used for this program. However, currently no VMS device meets the required specifications for tracking devices as presented in the Draft Addenda. Current Federal VMS type approval regulations limit the reporting interval (or ping rate) for VMS devices to between five minutes and 24 hours, which would preclude devices from using the one minute ping rate proposed in the Draft Addenda. Data costs for using a VMS device with the one ping per minute data collection rate are expected to be prohibitively expensive. Additionally, data collected from VMS devices are stored with NOAA's Office of Law Enforcement, which would create data access challenges for Commission and state management staff to address the goals of the Draft Addenda. The Addenda also require that an API will push data to ACCSP, and current VMS data systems may not allow for this.

16. Who will be able to view vessel tracking data?

Vessel tracking data will be protected under state and federal confidentiality laws that prohibit the disclosure of confidential data. Confidential data are data that can lead to the identification of either individuals or individual contributions. Only those individuals who have been granted confidential access by state or federal agencies may view confidential data. As a result, individual vessel tracking data will only be accessible to managers, ASMFC staff, and law enforcement officials that have signed the relevant non-disclosure agreements. It should be noted that harvesters will be able to access and distribute their own vessel tracking data, as desired.

17. How will harvesters be able to view or access their own tracking data?

This will depend on the type of tracking device chosen. Tracking vendors typically have a platform which can be used to view or access data or a process to request their data, but the specifics of how the data are presented and how much information is included can vary. The Commission work group will collect and distribute this information on the approved tracking devices/vendors so that harvesters are informed about how they could access their data if they choose a particular device.

ACCSP does not currently have an independent platform through which all harvesters could view their individual track data displayed on a map. This feature does exist in eTrips Mobile but only for harvesters reporting through that application. Harvesters would be able to request their personal tracking data in table format.

18. How will these data be used by law enforcement?

Tracking data will not be available to law enforcement in real time in order to initiate an investigation. Law enforcement may use data to support operations, law enforcement investigations, and prosecution efforts. From the perspective of ACCSP, access to data by law enforcement personnel is exactly the same as access by any other individual. The data are protected by the state and federal confidentiality laws and require relevant non-disclosure agreements for release. State Law Enforcement Agents will have to apply for and be granted confidential data access to review tracking data.

19. How will data be presented while still maintaining confidentiality under federal law?

The ACCSP policy for confidentiality requires that any data summary that is publicly disclosed must include information from at least three dealers, three harvesters and three vessels to be considered non-confidential. This policy is applicable to anyone who has a signed non-disclosure agreement on file with ACCSP, including Commission staff.

Additionally, confidential data would not be released by the Commission in response to information requests, nor by states or federal agencies in response to Freedom of Information Act requests.

20. How will vessel tracking data improve the stock assessment?

For the lobster assessment, two spatial assumptions are currently used in the process to generate fishery catch length composition data for the stock assessment model. This is a key data set informing fishing mortality and abundance estimates from the model.

The first assumption is that lobsters come from a uniform length distribution within a statistical area. Length sampling data, which are recorded with spatial coordinates, are used to characterize length distributions of the catch. Landings are assigned to a statistical area through a combination of data sources like spatial proportions of harvest from harvester logbooks and VTRs and, therefore, these landings data remain the limiting spatial factor in characterizing length compositions. Some preliminary analyses during the course of the last

assessment indicated length compositions differ within statistical areas. Though work remains to be done to finalize the process for using spatial data from trackers to partition landings during the next benchmark assessment, breaking down landings to a finer resolution using spatial data from trackers and pairing those data with length composition data at the currently available finer resolution (spatial coordinates) is anticipated to improve accuracy of the length composition data in the assessment.

For example, if the same number of length samples (which are often collected opportunistically and not proportional to landings within a statistical area) are collected from two halves of a statistical area and indicate different size distributions between these halves, but effort (and harvest) occurs disproportionately between these two halves, the current process would produce biased length composition data. If finer scale spatial data became available to inform and validate how harvest from a statistical area is distributed over the statistical area, the harvest could be split into the two halves, paired with the appropriate length data within the statistical area, and the bias in length composition data would be reduced.

The second assumption is about the legal sizes applied to the lobsters observed for length (legal proportions) to split the length compositions into the discarded and retained components. Because the Lobster Conservation Management Areas (LCMAs) have different boundaries than statistical areas and we have to use uniform legal sizes within a statistical area, the assessment currently assumes the wrong legal sizes for some proportion of the catch in some statistical areas. Much like the assumption above, this results in biased length composition data and finer scale spatial data to inform/validate catch distributions among LCMAs within statistical areas would reduce this bias.

The first stock assessment for Jonah crab is scheduled for completion in 2023. While data from electronic tracking would not be available for the first assessment, they will be useful in updating the assessment with more precise spatial information in the future.

ACCSP Collaborative Electronic Tracking Pilot Program in the American Lobster Fishery – Final Report

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Story Reed, Massachusetts Division of Marine Fisheries (MADMF)
September 4, 2020

Objective

To improve the spatial resolution of data in the American lobster and Jonah crab fishery by conducting a one year pilot program to test a suite of electronic tracking devices in the Gulf of Maine, Georges Bank, and Southern New England regions.

Approach

This project was initiated by the adoption of Addendum XXVI to the American Lobster Fishery Management Plan, which established a one-year pilot electronic tracking program, and by the recommendations of the Atlantic States Marine Fisheries Commission (ASMFC) Lobster Electronic Tracking Subcommittee (Subcommittee) that was formed to help design the tracking program. The Subcommittee was made up of representatives from multiple state agencies, industry, ACCSP, and ASMFC. Through the guidance of the Subcommittee it was determined that multiple devices should be tested in a variety of geographical areas from Southern New England to the Gulf of Maine.

Devices

Tracking devices were acquired by ACCSP from three vendors and placed on volunteer lobster vessels in Maine and Massachusetts. Vessels with federal lobster permits were specifically chosen. The three vendors utilized were Succorfish, Rock7, and Pelagic Data Systems. A fourth vendor (Faria-Beede) had been included in the initial proposal. Due to ongoing issues MEDMR has had with Faria-Beede devices, testing of these devices was dropped in favor of the Rock7 trackers.

This project proposal had initially planned to test tablets running eTrips Mobile. However, this testing did not occur for several reasons. First, a second VMS project being carried out in MA and RI is testing eTrips Mobile on tablets and is working to integrate VMS provider APIs with eTrips. Secondly, as MEDMR is developing a different harvester reporting application, having Maine fishermen test eTrips Mobile would have been confusing and mostly inconsequential.

Deployment

Initial deployment of devices occurred in June 2019 in Maine and November 2019 in Massachusetts. The Rock7 RockFleet devices were the first to be acquired. The Succorfish and Pelagic Data Systems devices were not available for deployment until September and November 2019, respectively.

For devices requiring a direct connection to the vessel's power system (Succorfish and Rock7), installations were completed by the captain or the primary investigators. Several devices in Maine were also outfitted with 12-volt cigarette-lighter style adapters to facilitate easy connections to vessel power systems where these outlets were available.

The COVID-19 shutdown in March 2020 impacted the deployment of some devices in both Maine and Massachusetts. Agency personnel were not able to install some devices due to COVID-19 protocols. Additionally, the seafood industry was severely impacted by the COVID-19 shutdown and many lobster boats fished less than planned during the spring and early summer.

Ping Rate

All devices tested were set to report data at a one-minute ping rate. This rate is necessary to distinguish lobster fishing activity from transiting activity. Faster rates, while possible with these devices, do not generally improve the track resolution as the expected distance between points in the track falls below the horizontal accuracy of the GPS signal.

Results

Device Features & Performance

Rock7

Rock7 is one of the largest distributers of Iridium satellite-based tracking technology. A large portion of their sales seem to come not from VMS devices, but from Iridium modems for use in satellite-connected embedded systems. The company produces VMS devices in both Iridium-only and hybrid Iridium/cellular modes. Rock7 VMS devices are currently required for use in several Australian fisheries; however, it should be noted that a 3rd party vendor handles the installation and data stream management for these units, and that Rock7 is essentially the hardware vendor.

MEDMR tested Iridium-only Rock7 RockFleet devices in 2016; for this project, the dual-band devices were tested. RockFleet devices were set up to report over cellular every minute when in range and every 15 minutes over Iridium when out of cellular range. The RockFleet does not support caching points at a faster rate for later upload; as such, when out of cellular service, the device is limited to only reporting over Iridium. The higher costs per ping associated with Iridium transmissions would limit the offshore ping rate possible with Rock7 units.

MEDMR deployed 4 RockFleets on vessels fishing out of Portland, Stonington, Swans Island, and Steuben. All but one of these devices reported until January 2020, when many vessels ceased fishing for the winter. One device experienced issues periodically "freezing". Rock7 provides a magnet with each device that can be swiped over the unit to reset it in the event of a lock up. This would seem to be prima facie evidence that the devices are prone to this issue. The single RockFleet that froze was only powered when the vessel was running; as such, once the vessel had gone several days without fishing, the internal backup battery was exhausted and the unit reset.

MADMF deployed two RockFleet devices beginning in November 2019; these devices reported successfully until data subscription ended in July 2020.

The Rock7 web interface generally functioned as expected. Multiple vessel positions could be viewed concurrently, and querying vessel positions by date range was straightforward. Options were present for changing the basemap and coloring vessel tracks by speed. Unlike other devices, the web interface allowed for the end user to modify device options like ping rate. The Rock7 website offered no options for distinguishing device vs vessel, which is necessary if devices are reused on multiple vessels or if a vessel needs a replacement unit installed. Ping data was successfully exported both using the web interface and the Rock7 API, which pushes data to endpoints in XML format. Rock7 also provides a pull API that allows for configuring RockFleet options over both cellular and Iridium networks.

Succorfish

Succorfish produces several tracking devices for use in fishing and fleet operations. The company is based out of the United Kingdom, and has previously deployed VMS in fixed and mobile gear fisheries in the UK and Ireland. The Succorfish SC2 is available in cellular-only and dual-band cellular/satellite modes. Both are capable of caching data at a faster ping rate for upload when back in cellular range, making for a cost-effective high-resolution tracking solution.

Succorfish is possibly the only vessel tracking provider to address the issue of distinguishing vessels from tracking devices. Devices are managed separately from assets (vessels) in their data systems, and a dedicated installer mobile app captures detailed metadata about device installations. This metadata may include photos of the vessel/tracker install and forms to obtain captain's consent. The installation app also creates the association between the tracking hardware device and the vessel identifier; a barcode on the SC2 is scanned into the app, creating a verifiable link between each. If a tracking device is installed on a new vessel, or if a vessel receives a new device, newly reported data is associated with the correct vessel.

The Succorfish SC2 contains additional hardware that is of potential interest to lobster vessel tracking. Perhaps most importantly, the Succorfish SC2 has a light on the side clearly indicating that it is receiving external power. The device also has a high-accuracy GPS utilizing several GPS networks (Gaileo, GLONASS, and BeiDou). For communicating with other devices onboard a vessel, the SC2 also has WiFi, Bluetooth, and LoRa capabilities. Additionally, the wiring harness connecting the SC2 to vessel power has additional circuits

for external hardware integration. An anti-tamper loop sends an event with the tracking data if the cable is cut or temporarily disconnected. Normally open/normally closed circuits are also included that trigger ping events; this could facilitate the connection of a hauler sensor to the SC2 with minimal circuitry necessary.

The LoRa (Long Range) capabilities of the SC2 may warrant further investigation. LoRa is a wireless radio system that can reach distances of up 10 kilometers in rural areas. Since cellular data costs remain the largest recurring expense in deploying VMS, if LoRa-to-internet bridges could be placed in the larger lobstering ports, vessels may be able to upload position data when in port without the costs of a cellular connection. This concept is being discussed with engineers at Succorfish.

Succorfish SC2 cellular-only tracking devices were utilized on 6 vessels in Maine and one in Massachusetts. Succorfish has previously provided SC2s for testing to Maine Marine Patrol; 2 of these bonus devices were also installed on lobster vessels. As of August 2020, 4 Succorfish SC2s are still reporting vessel positions in Maine; the other two have been removed. When out of cellular range, the SC2 cached data as expected for future upload.

MEDMR also tested Succorfish's wireless Gear-in-Gear-Out (GIGO) tags with the SC2 devices on both fixed and mobile gear. The tags have a three year battery life and utilize Bluetooth Low Energy; as such, they are detectable by the SC2 when they are anywhere onboard the vessel. The timestamp that each unique tag transits on/off the vessel is transmitted by SC2 with the vessel location data. This technology contrasts with previous Radio Frequency Identification (RFID) technology used on lobster gear, which required a passive RFID tag in the buoy to pass in close proximity to a sensor. Since the tag haul event and set out event are both captured, it is conceivable that this technology could be used to maintain a complete spatial census of all the gear a vessel had in the water at any given time. However, the cost of these tags may be prohibitive to any such effort. Currently, Succorfish offers GIGO beacons for $25 each with a three-year battery life. Additionally, delimiting lobster trawl gear locations using cluster analysis of VMS data has been found to be mostly successful, such that a dedicated hardware device may not be necessary.

MEDMR tested GIGO beacons on one lobster vessel. The captain attached beacons to several of his endlines. Results were inconsistent, possibly due to poor reception due to the position of the SC2. GIGO beacons were also used during the department's scallop surveys. Beacons were attached to both the scientific survey dredge as well as the vessel's normal commercial dredge, allowing each tow to be visualized and survey vs commercial fishing to be easily discerned. These beacons were also invaluable during the Spring 2020 survey when MEDMR staff were unable to work aboard survey vessels due to COVID-19. The GIGO beacon passively captured tow start/tow end times and positions for later analysis.

Compared with other companies involved, Succorfish has taken an active role participating in this project. Representatives traveled to Maine and Massachusetts several times over the last two years to meet with representatives from MEDMR, MADMF, NOAA and the lobster industry. The company has also provided two SC2s, several GIGO beacons and associated data plans free of charge to MEDMR for testing.

Pelagic Data Systems

Pelagic Data Systems offers a lightweight, ruggedized Vessel Tracking System (VTS) device. The VTS device is solar-powered and does not require or allow any power connection from a vessel's electrical system. The simple installation requires screwing the device and bracket to the vessel, in a location that gets direct sunlight for as much of the day as possible. VTS devices receive location information directly from GPS/GLONASS satellites and transmit this information securely, when in range of the cellular network. Data transmission costs are relatively low. The VTS devices were designed for use on fleets and boats of all sizes, including small, open boats with little vessel power and constant exposure to the elements.

The VTS devices record, on average, 600 locations per hour and this ping rate is dependent on vessel speed. They are capable of logging up to one location per second but that is not necessary or practical. The data upload interval can be set individually, depending on cellular network availability, but the default is to upload data every six hours. The default upload rate was sufficient for this project. Pelagic Data Systems staff were available to answer questions on ping rates and showed a willingness to adjust ping rates and upload intervals if needed.

The VTS devices were received in October 2019. Pelagic Data Systems had informed the project that New England was likely on the northern fringe of the optimal range for solar charging, particularly during the winter months. MEDMR tested a VTS during the months of December and January at their office in Boothbay Harbor, ME. The device did not receive enough sunlight to fully charge and become reliably active. MADMF installed the first VTS device on a vessel in late-November 2019. The vessel began recording trips and location data on December 1, 2020. VTS devices were installed on three additional vessels over the course of the winter. During the months of December and January, when sun angles are at the lowest, vessels tied up to docks that were more susceptible to shadows did have some difficulty charging the devices. The vessels on moorings had less issues.

These experiences in the winter months verify that New England is on the northern fringe geographically for successful use of the VTS devices year-round. When the device is operational, it provides a good low-cost option, especially for vessels with limited power. More testing will be done with the device in the Rhode Island/Massachusetts Electronic Tracking and Reporting project.

The Pelagic Data Systems web interface was updated during the project. The updated web interface is simple and functions well. Devices can be assigned to vessels and device battery levels can be monitored. Multiple vessel positions and trips can be displayed.

The Pelagic Data Systems software assigns a unique Trip ID for each trip. Based on changes in speed, the device triggers the start of a trip. The end of a trip is calculated based on multiple parameters, including movement, distance to shore, and distance from known docking locations. Essentially, each device learns where it docks.

Device Cost

Approximate Device Costs – see Appendix I for a more detailed comparison of device features:

	Pelagic Data Systems	Succorfish SC2	Rock Seven
Unit Price	$200	$300	$750
1 Yr Service	$300	$300	$600 (cellular & Iridium)

Industry Involvement and Perception

Comments from lobsterman participating in this project ranged from very positive to indifferent. However, MEDMR specifically targeted captains who have been previously involved with department research, this is expected and likely not an effective indicator of industry perception. Several participants indicated their feelings that VMS is inevitable. VMS is unobtrusive, low-cost and does not require gear modification. Compared with many of the solutions to protected species interactions being currently discussed, VMS may not always generate the visceral response that technologies like ropeless fishing can produce.

Many VMS vendors offer the ability for vessel captains to access their own position data; indeed, some like Succorfish have made it a central part of their marketing strategy. Several captains involved in this project did request access to their VMS device through the various web interfaces. However, this feature may not offer much benefit to the wider industry as many vessels already maintain a track of the vessel's past positions as part of their plotter/navigational system.

The reaction to VMS by the lobster industry will also be influenced by the costs to fishermen, if any, associated with VMS.

MADMF contacted fishermen to gauge their interest in participating in this project and provided outreach to members of the Massachusetts Lobstermen's Association (MAMLA). Members of the MAMLA have begun to change their perception of VMS and see the need for better spatial data in the lobster fishery for a variety of reasons including fisheries management, enforcement, and siting of wind areas. Some also see the value of having access to their own spatial data through a web interface. After attending a February MAMLA delegates meeting, several fishermen expressed interest in participating in the program. Three additional vessels from this interested group were outfitted with devices prior to the COVID-19 shutdown.

Use of VMS by Law Enforcement

Several captains involved in this project were supportive of mandatory VMS in the lobster fishery since they believe it will prevent illegal fishing activity. Although just having a VMS device onboard may be a deterrent to illicit fishing, there will likely be an expectation from the industry that if VMS is mandatory regulators will use it for enforcement purposes.

Several Marine Patrol Officers in Maine were involved in this project and were highly supportive of expansions of VMS in the lobster fleet. Maine officers did not indicate that

real-time data is essential, and supported the lower costs and higher ping rates of the cellular-based devices.

The authors recommend that law enforcement agencies involved in patrolling the lobster fleet be involved in future discussions regarding VMS, particularly regarding the actual necessity of real-time data.

Effort Analysis

MEDMR has experimented with several methods for quantifying fishing effort from VMS data. These methods were developed from past use of VMS in the urchin and scallop fisheries, as well as VMS data from lobster vessels as part of this project. These experiences have identified several methods for identifying fishing activity in different fisheries.

Early experiments with VMS devices on urchin and scallop vessels used vessel speed as a proxy for fishing effort. Since divers and draggers tended to move slowly while fishing, using either the reported speed or calculated speed allowed pings occurring in areas of fishing effort to be identified. An immediate issue with this method was that pings produced while a vessel was sitting at the dock are also identified as effort using both speed filtering and clustering methods for effort detection. This situation is hereafter referred to as 'pings-in-port'.

Pings-in-Port

Given the limited spatial extent in which these VMS devices were required on urchin vessels, known ports/mooring locations were identified and data from within these areas were removed prior to effort detection. However, this method would be impractical for use in the lobster fishery, where hundreds of ports are utilized, and vessels often tie up in different locations throughout the year.

Several methods for removal of pings-in-port for lobster vessels have been tested using VMS data from lobster vessels obtained during this project:

1 – If a harvester report is available, the trip start/trip end times can be used to filter VMS data within the trip timeframe. This removes extraneous pings produced when the vessel was sitting on a dock or mooring. Since a harvester may report times slightly before or after the actual trip start or end time, an effective method may be to further filter these data before effort detection by reducing the temporal range on either end, or by buffering the first few pings of the trip by a set distance and removing pings within this buffer. This may still create artifacts if a vessel stopped for fuel or ice. These artifacts can be identified programmatically by their proximity to shore, but as fishing effort may also occur near shore (hauling singles around ledges) this can be a difficult distinction.

2 - If no harvester report is available, for a given date the home port can be detected by filtering pings within an hour of midnight and proximity to shore. Since much of the lobster fishery is day boat based, this will often provide a reliable estimate of where the vessel was tied up that night, allowing this portion of the track to be removed.

Preprocessing

All VMS devices tested produce at a minimum ping data with the following fields: device identifier, datetime, latitude, and longitude. Additional fields produced may contain data such as device speed, bearing, and GPS accuracy. These extra data are usually unnecessary, as attributes like bearing and speed can be calculated at any time.

Preprocessing of data produced by devices in this project involved adding several track metadata fields necessary to organize ping data into tracks/trips. Generally, ping data is arranged by vessel and timestamp, and track IDs are assigned sequentially by splitting tracks by vessel/day or using the trip start/end times from a harvester report. Fields are also added to each ping containing the time, distance and bearing to the next ping. The track IDs can then be used to create line features for each trip track. Several tools exist for preprocessing of VMS data; NOAA has created a Track Builder Plugin for ArcGIS Desktop, and MEDMR has developed R/C++ based tools internally.

Quantifying Effort

Detection of lobster fishing effort by vessel speed alone has been shown to produce errors; lobster boats often move at slower speeds when the distance between gear sets is small and may also slow down during transiting. The below maps contain the track of a lobster vessel fishing 10-trap trawls (green line), recorded by a Succorfish SC2 at a 1-minute ping rate. The orange dots are haul start locations as recorded by an onboard MEDMR observer. The red polygons in the left map are detected trawl locations using vessel speed. Pings less than a 2.5 m/s speed (roughly 5 knots) were identified by first buffering all pings by 150m (the furthest a vessel going 2.5 m/s could travel between 1-minute pings), then dissolving these buffers together and selecting only polygons with >1 ping. This method has the advantage over just speed filtering in that some basic cluster analysis can be incorporated by varying the minimum number of pings per polygon. The vessel slowed down to eat lunch at the southern end of the track, and this part of the track was incorrectly identified as effort. Fishing effort on the right-hand map was correctly identified using cluster analysis. The centroids of these effort clusters can be used as a haul location, and clusters can be numbered sequentially within a trip.

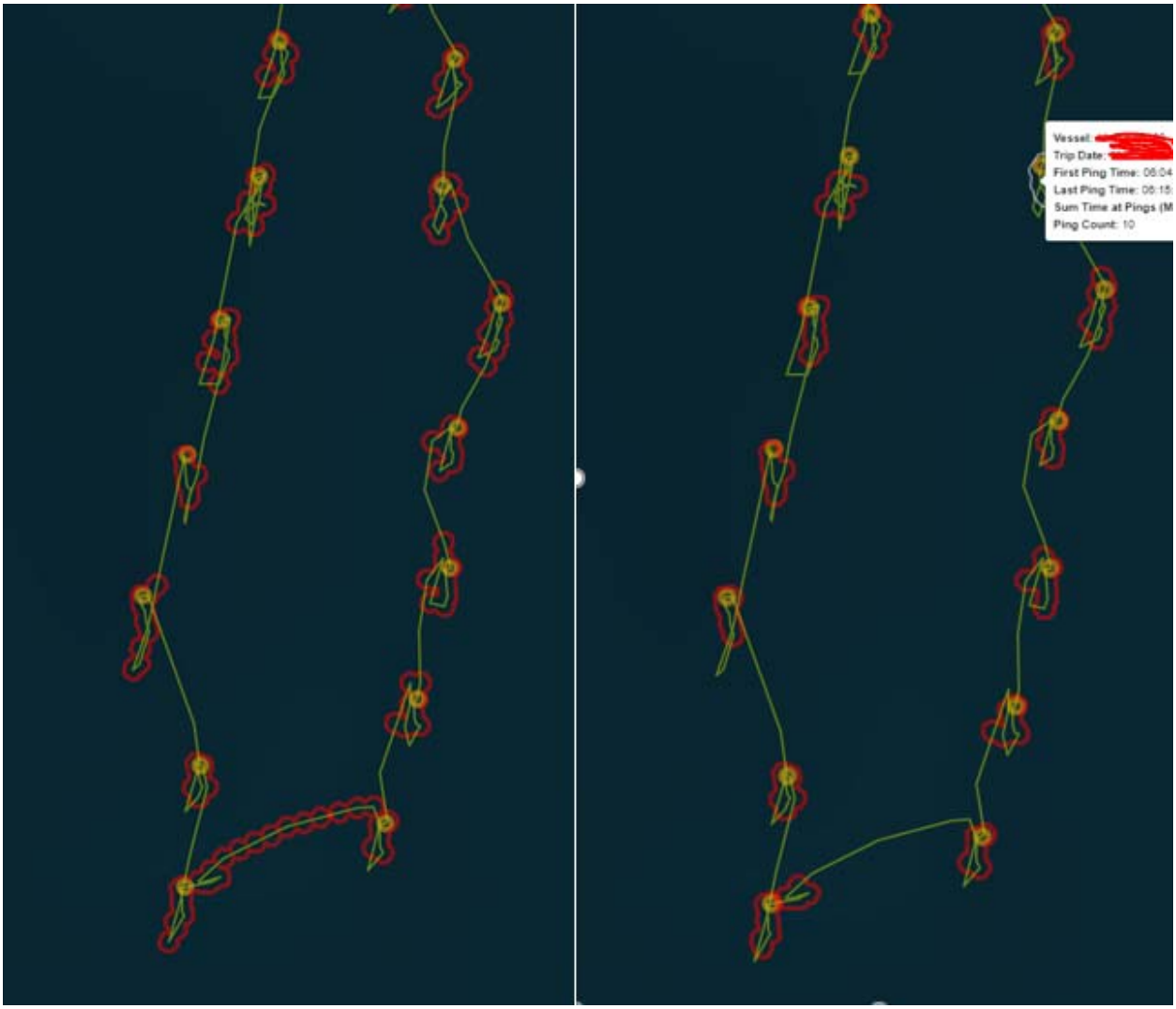

Figure 1: Track of lobster vessel hauling 10-trap trawls. Orange dots are observer recorded haul locations. Red is effort detected based on vessel speed (left) and cluster analysis (right). Note incorrectly identified effort at southern end of track on left map.

The cluster analysis in the map at right used Ward's method as implemented in the base R 'stats' package. A matrix of the geographic distance between all pings in the trip was first calculated (i.e., for a 12-hour trip at 1-minute ping rate, a 720x720 matrix). This distance matrix was then used to create a hierarchal cluster tree using the single linkage method, which could be cut into clusters using two methods:

1. If the number of hauls/trawls occurring within the trip is unknown, the hierarchal tree was cut into clusters based on height. Since the single linkage method was used, this height threshold is the minimum distance between points in adjacent clusters. Clusters that have fewer than 3 points were then filtered out. This method can be thought of as 'speed filtering with clustering.' This method was used in the map above.

2. If the harvester report provides the number of trawls hauled, k-means clustering can be used to cut the tree into the most significant k number of clusters. This is a particularly useful method for trips hauling mostly trawls and providing trawl quantities in a harvester report.

One limitation of this approach is that clusters are only identified spatially and not temporally. If a vessel transits back through the same area during the same trip creating a cluster of points (such as in a channel), these pings can be misidentified as effort. This situation can be remedied by calculating a matrix of time between all points in the trip in addition to the distance matrix described above. The product of the time and distance matrices would then be used to classify clusters.

The above method has also been used with VMS data collected by a Succorfish SC2 on a vessel contracted by MEDMR for the Ventless Trap Survey, which fishes triples. Trawl locations were detectable from these datasets and matched up well with positions taken by MEDMR staff. However, fishing trips where triples were fished in tightly spaced groups of 5 (a common practice in some areas in Maine) were only detectable as single clusters of points. Any attempt to identify gear locations must therefore take into account information from the harvester report, as well as a geospatial model of gear sizes based on regulations and common fishing practices.

While cluster analysis methods may have difficulty identifying smaller inshore trawls, these results indicate that it is possible to programmatically quantify larger trawl locations from VMS data. This is significant as larger offshore trawls are implicated in producing a greater risk to protected species, and the improvement of spatial data related to these gear types is likely of higher management priority than quantification of inshore effort. The methods described also permit storage of haul locations as coordinate values at the effort level, versus existing methods of creating large raster heatmaps of vessel effort over time. Recent efforts by federal and state agencies to model risk to North Atlantic Right Whales have attempted to model the spatiotemporal distribution of actual vertical line numbers versus just fishing effort; this demonstrates that being able to quantify fishing effort as gear types and distributions is important in addition to simply quantifying transit time.

It may be possible with further work to develop better methods of effort quantification using time series classification of observer-verified VMS data; see the further work section for more detail.

Future Work

Expansion of Vessel Monitoring in the Lobster Fleet

MEDMR is currently developing a harvester reporting app (VESL). The app vendor is working to integrate vessel position data from the Succorfish API with harvester reports, such that positional data can be submitted to SAFIS along with harvester reports. Other VMS provider's APIs may be added as needed. Additionally, the MEDMR is discussing an expanded pilot project testing up to 25 SC2s alongside the VESL app.

MADMF continues to work with Rhode Island DEM on the ongoing ACCSP-funded project to integrate vessel monitoring systems and electronic reporting in SAFIS. Field testing will begin soon on multiple hardware options.

Further Industry Involvement

The authors suggest that the original subcommittee involved in this project be reconvened to discuss further steps and provide industry outreach. Further discussions with regional lobster associations is also recommended.

Software Development

The collection of VMS data alongside harvester reports will facilitate the development of better effort detection algorithms. When gear configurations, like total gear in the water and number of trawls is known, these variables can be used to better identify lobster fishing activity in track data.

An additional area of further work is the collection of activity-classified time series of tracking data by captains and/or department staff. If an activity field indicating hauling vs steaming and gear size could be added to the existing ping fields (vessel, timestamp, lat, lon), the resulting classified ping data could be used to train effort detecting machine learning models. An example ArcGIS QuickCapture application developed at MEDMR to record classified vessel tracks is shown to the right; when the app is started, the number of traps per trawl is input by the user and can be changed at any time during the trip. The app records the vessel track along with the selected activity type and trawl size. Separate buttons allow for quickly capturing gear events that may result in anomalies in tracking data.

Hardware Development

Several of the devices tested included additional hardware and peripheral options that may warrant further research. All three device models included some variety of local wireless connectivity (Bluetooth, WiFi, etc). The Succorfish SC2 also includes connections in the wiring harness, that when closed, trigger ping events. These connections could provide a method of incorporating a hauler sensor with the VMS device, if such a sensor is deemed necessary.

In addition to the experiments with gear beacons carried out by MEDMR, the Succorfish SC2 is also capable of communicating wirelessly with a low-cost water temperature sensor. The sensor can be placed on a trap, and when hauled relays temperature readings to the SC2 which are then uploaded with positional data. This offers the possibility of using VMS to drastically expand the resolution of bottom temperature data in the Gulf of Maine,

similar to current projects like Environmental Monitors on Lobster Traps and Large Trawlers (eMOLT). Collection of environmental data via VMS devices could also provide an avenue for regulatory agencies to cover the cost of a vessel's tracking device in exchange for that vessel providing useful scientific data.

Summary

The need for higher spatial resolution data in the lobster fishery has become increasingly apparent. The continued risk of protected species interactions demands better accounting of where lobster fishing occurs than the currently reported zone/distance from shore/10 arc-minute square attributes. Further pressure to develop wind energy resources within the Gulf of Maine is also highlighting the paucity of spatial data for this fishery. It is no longer enough to say that 'lobstering can occur anywhere', and it is inevitable that the lobster industry and state/federal managers will need to delineate areas most critical to the fishery.

Incorporating cloud-connected vessel monitoring devices can also relay valuable secondary data, improving the availability of oceanographic data like sea bottom temperature. In addition to providing necessary data for conversations pertaining to ocean resource use, widespread deployment of VMS devices in the lobster fleet will provide valuable scientific data on the distribution of lobsters throughout the year and across multiple years. This information will be invaluable to managers and scientists as lobster populations continue to adapt to changing ocean conditions.

Testing of multiple devices as part of this project and others has shown that there are clear technological paths to accomplish large-scale vessel monitoring at a fraction of the cost of past efforts. The use of cellular VMS is a cost-effective alternative to satellite based VMS, offering significantly higher ping rates for the slight tradeoff of a several hour delay in data availability when vessels are offshore. Testing of these devices showed that vessel position was almost always successfully reported, provided that the tracking device was receiving power. However, while testing has shown these devices to work as expected, there remain several hurdles to expanding cellular VMS in the lobster fishery:

1. Installation of many VMS devices will require dedicated installation technicians. These technicians will need to travel throughout New England and coordinate times with vessel captains to install VMS devices. If devices requiring vessel power are used, consideration will need to be given as to how the connection is made. Should the VMS device be powered all the time, or only when the vessel engine is running?
2. Significant data integration work remains. At a minimum, vessel positions will need to be linked with harvester reports. Further work will be necessary to convert raw vessel positions into meaningful indicators of lobster fishing activities, such as heat maps of effort/catch and CPUE indices.
3. There remain questions as to who will pay for the upfront hardware costs of VMS devices, including installation, as well as the monthly data subscription cost.

Appendix I: Comparison of VMS Device Characteristics

	Succorfish SC2	Rock7 RockFleet	Pelagic Data Systems
Tested in Project?	**Yes**	**Yes**	**Yes**
Waterproof Rating	IP67	IP68	IP68
Cost			
Device Cost	$300	$750	$200
Data Cost (Yearly)	$300	$600 (cellular & Iridium)	$300
Connectivity			
Cellular	Yes	Optional add-on	Yes
Satellite	Iridium	Iridium	No
Bluetooth	Yes	Yes	No
WiFi	Yes	No	No
LoRa	Yes	No	No
Accelerometer	Yes	Yes	No
Serial/UART	Yes	Optional add-on	No
Magnetometer	No	No	No
Normally Open/Normally Closed Contacts	Yes	No	No
Power			
External	Yes; 5-36V	Yes, 9-30V	No
Internal Battery	Yes; Li-ion 5200mAh	Yes	Yes
Solar	No	No	Yes
Consumption(GSM/Iridium)	160/350mA	500mA max, < 30mA sleep	
Software			
Vessels managed separately from devices	Yes	No	No
User-adjustable ping rate	No	Yes	No
API	Push/Pull Non-Persiste	Push XML	Pull JSON

ACCSP Integration of Vessel Monitoring Systems and Electronic Reporting in SAFIS and SAFIS Applications Through API Development and Field Testing of Multiple Hardware Options

Final Report

January 19, 2022

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Objective

The project objectives included developing an Application Programming Interface (API)-based integration of geographical vessel-monitoring data with real-time electronically reported data in the eTRIPS mobile application (eTRIPS mobile 2 hereafter) for small scale inshore fisheries, producing a comparative cost analysis of various VMS devices, evaluating functionality of various VMS devices with data generated on fishing trips, and investigating capability of hail in/hail out features and geofencing.

Background

Satellite-based vessel-monitoring-systems (VMS) have been deployed for years on federally permitted vessels and utilized by NOAA Fisheries and NOAA Office of Law Enforcement (OLE) successfully. These systems not only allow OLE to monitor and receive messages about vessels' positions, but also allow for the vessel captains to be notified when approaching defined boundaries (e.g., closed areas). Most Atlantic Coastal Cooperative Statistics Program (ACCSP) state partners have not yet implemented this technology, primarily due to relatively high costs and administrative logistics. In recent years, new cellular-based VMS technology has emerged that is less expensive to purchase and use and can be accessed via mobile devices providing greater opportunity for partners with limited resources. State managers and law enforcement have expressed interest in exploring the utility of this technology to allow for more flexible management programs in various fisheries by providing more robust accountability. Positional data generated from VMS devices linked with trip-level data are needed to accomplish the rigorous monitoring associated with these types of management programs especially where the current level of reported location data is insufficient.

Approach

Integration of trip reporting and VMS tracks began with a modification to eTRIPS mobile 2, a reporting application offered by ACCSP and developed by Harbor Light Software, to communicate with VMS devices and/or device vendors. The software development process explored the APIs offered by several selected VMS vendors and integrated those APIs into eTRIPS mobile 2. The following capabilities were investigated for each of the selected devices:

- Accessing location data generated by the VMS device for integrated reporting with trip data submitted to the Standard Atlantic Fisheries Information System (SAFIS).
- Selection of and connection to a VMS device in eTRIPS mobile 2 by the user via configuration menu options within the "Favorites" section of the eTRIPS mobile 2 application.
- Usage of defined geofenced regions in SAFIS to create location alerts based on location data generated by the VMS devices.
- Dynamic control over the frequency of recording geographic location (ping rate) and the transmission of location data (data package delivery rate) by the VMS device.

The project identified several VMS devices for testing the newly developed integrated features. For devices to be selected for testing, they were required to have an API which eTRIPS mobile 2 used to access the location data generated by the device. The software development phase of the project involved custom support in eTRIPS mobile 2 for the API's offered by each of the supported devices.

The project aimed to explore the effectiveness of the various API designs for achieving device control and reporting of data including:

- On-shore communications when the device on which eTRIPS mobile 2 is installed is connected to the internet either before or after a trip starts or completes.
- Real-time Bluetooth communications between eTRIPS mobile 2 and the VMS unit. *Note that the lone VMS vendor that proposed Bluetooth communication with the eTRIPS mobile 2 device was ultimately removed from the trial and this communication approach was not implemented in the project.*

The devices and modified eTRIPS mobile 2 application were piloted in real fishing scenarios onboard research vessels from Rhode Island and Massachusetts. Though project partners intended to deploy devices on commercial and/or for-hire vessels, the COVID-19 pandemic halted much of that effort. Instead, research vessels and vehicles were used to capture the same testing elements. While testing the VMS devices on traditional fishing vessels would have been ideal, testing the application on board such vessels was deemed unnecessary. Aside from selecting and connecting their device, there was minimal direct change in the eTRIPS mobile 2 application for an end user. Thus, testing of the modified application by end users was not necessary as all other components were identical to the existing production version in use by many fishermen. Most changes to eTRIPS mobile 2 were solely in aspects 'behind the scenes' in the connection to the devices and required internal project team testing of the VMS devices and API connections.

Shortly after launching the project, partners determined the need for additional development of an administrative interface for viewing tracked trips. As a result, ACCSP staff developed a map interface within the SAFIS Management System (SMS) to view the VMS and eTRIPS mobile 2 trip-header data generated from these trips, including trip start/end date and trip id. The map interface allowed administrators to view vessel tracks immediately after submission to SAFIS. The characterization of trip activity by vessel speed was also prototyped within the map interface application.

Devices

Devices proposed and tested:

Faria Beede, https://fariabeede.com

Faria Beede Instruments is a company based out of North Stonington, CT that specializes in instrumentation for marine and automotive industries. They have several asset tracking and VMS products including satellite and cellular units. The Sentry module (WD300 and WD500 versions) used in this study is a compact, ruggedized, and GPS/cellular boat tracking and monitoring system utilizing 2G/3G cellular coverage.

Pelagic Data Systems, http://www.pelagicdata.com

Pelagic Data Systems, Inc. is a global provider of cellular vessel tracking systems based in San Francisco, CA. The device tested for this study was the Vessel Tracking System (VTS). The VTS system uses cellular networks with onboard data storage and is entirely solar powered. A cloud-based analytics platform provides information of the vessel's movements to users. Due to the company's normal business practice of only selling units for bulk installs of over 50 units, they charged an additional fee for support of this small project and have recently implemented a significant API fee.

Tablet GPS

Both Android and iOS tablet computers were selected for testing. Devices were selected by prioritizing low-cost options as well as their ability to be mounted within a ruggedized case. The internal GPS capability of each tablet was tested as part of this project.

Devices proposed but not tested:

SnapIT, http://www.snapithd.com/

While originally proposed to be included, project partners determined early in the project the company was not appropriate for this pilot. After project partners met with SnapIT and they reviewed the pilot, it was determined that SnapIT did not have a cellular device ready for deployment in the field for the start of the pilot program. No API existed for data retrieval from the device as well. Therefore, the device was removed from the pilot project.

Skymate, https://www.skymate.com/user_groups/commercial_fishing.html

Skymate VMS systems are currently approved by NOAA and are currently in use on commercial vessels in the Northeast US. The units send automated position reports to NOAA and have additional benefits such as weather, fish prices, and sea surface temperatures available for users. They intended to launch a lower cost satellite device due to be released in spring 2022, but since this device was not available during the pilot, testing was not feasible. Future work may incorporate testing this new device once it is launched.

Devices not originally proposed, but replaced above devices in testing:

CLS, https://fisheries.groupcls.com/, https://thoriumvms.com/

CLS is a global provider in vessel monitoring systems. Their United States subsidiary company Woods Hole Group has locations in Bourne, MA; Dover, DE; and Lanham, MD and is an approved federal VMS vendor. The CLS NEMO unit was developed for monitoring small-scale fisheries and was tested during this study. It is currently an approved VMS device for the federal Gulf of Mexico for-hire fisheries. The CLS NEMO unit offers a hybrid cellular/satellite system that has the capability to switch to satellite when out of cellular range.

Succorfish, https://succorfish.com/

Succorfish is an international company based in the United Kingdom that produces several tracking and satellite-based communication devices. The SC2 (generation 1 cellular only) was tested during this study. The SC2 VMS GPRS are low cost cellular/satellite hybrid devices that can be operated under cellular only data to provide cost-effective tracking capabilities.

Results

Device Features and Performance

Faria Beede

Overview and Installation:

The WD300 (Figure 1) and WD500 2G/3G cellular remote tracking units were tested. The Faria Beede units are designed to be installed on the dash of the vessel and require a 12-24v power supply. Vessel tracking positions could be collected at a ping rate of one minute. These units can optionally interface with multiple shipboard systems such as bilge pumps, security systems, high water alarms, batteries, and shore power.

API Integration:

Faria Beede offered a standard REST-based API for access to location data. Harbor Light Software reported no issues of note in the implementation of support for their API.

Deployment/Use and Data Transmission:
A WD500 2G/3G cellular remote tracking unit was tested on a Rhode Island owned 22' research vessel during routine survey activity. Additional tests of the WD300 units were completed in both state-owned and private automobiles. When installed correctly, the device successfully transmitted tracking locations.

Data Access:
Faria Beede offers a secure web app to manage the WD300 and WD500 2G/3G cellular remote tracking units. Through this web app, users may review vessel locations and visualize them on a map. A harvester may manage the transfer of their device on the web app by purging previously collected information from the VMS device and removing the VMS device from their Faria Beede account. In addition, the web app allows users to review the status of integrated vessel systems and establish text and email alerts if desired.

Figure 1. Faria Beede WD300 Sentry unit.

Succorfish
Overview and Installation:
The Succorfish SC2 (as tested: generation 1 cellular only; Figure 2) operates on 12v DC power supply; it comes with 12-32v power regulator for attaching to larger systems. The SC2 is ruggedized with an ingress protection rating of IP67 and can be externally mounted on a vessel. Succorfish recommends the device be installed in clear line of sight of the sky and 300 mm from any other radio equipment to achieve the best cellular coverage. Users and/or agencies must work with Succorfish to create accounts and receive the appropriate privileges for proper device and data management. Installation is then completed using a detailed mobile application that records the serial number of the unique device, photos of vessel and installation, and signatures of vessel owner and installer. The Succorfish installer application is also used to manage the uninstallation from a vessel, however, to transfer an asset to a completely different owner, Succorfish must be contacted directly. Delays in receiving communication from Succorfish resulted in significant impacts on installation and deployment of devices within this pilot.

API Integration:
Succorfish offered a standard REST-based API for access to location data. Harbor Light Software reported no issues of note in the implementation of support for their API. When technical issues were discovered relating to accessing data for individual devices, Succorfish responded by making appropriate changes to their API to support the goals of this project.

Deployment/Use and Data Transmission:
Succorfish devices were briefly installed on privately owned vessels and automobiles. Complex installation procedures require that user accounts have proper permissions prior to installation, and the device vendor must be contacted to properly create administrative accounts. When installed correctly, the device successfully transmitted vessel locations from the deck of a 14' skiff and the dash of an automobile.

Data Access:
Succorfish maintains a secure website with a monitoring feature that allows users to view their vessel tracks. This website has unique features such as the ability to filter vessel stationary positions and view geofences. In addition to visualizing data, the application allows device administrators to manage assets (vessels), devices, users, roles, geofences, and export copies of datasets.

Figure 2. Succorfish SC2 unit.

<u>CLS</u>
Overview and Installation:
The CLS NEMO unit (Figure 3) has a lithium-ion battery that can be charged by USB cable or through supplemental charging via an integrated small solar panel. For higher frequency ping rates (e.g., 5-minute ping intervals), CLS recommended the device be always powered directly through USB. The device has an IP67 protection rating and may be installed on the exterior of the vessel. A magnet (provided by CLS) must be used for initial power-up and to manually re-set of the device, if lost CLS believed most locally available magnets would suffice. At the time of testing the lowest available ping

rate for this device was 5 minutes; users are not able to adjust it and the company must be contacted directly to make any changes. In addition to transmission of vessel locations, the device can send an emergency alert when triggered by the vessel operator.

API Integration:
CLS offered the older SOAP-based design for their API for access to location data. Over the course of the project, several changes to the API were implemented, which required rework within eTRIPS mobile 2 for the calculation of geolocation. One such change rendered the API service inaccessible for a period of several weeks while the issue was addressed.

Deployment/Use and Data Transmission:
During this study, a NEMO device was deployed on Massachusetts owned R/V Michael Craven, a 38-foot lobster style vessel like those used in the American lobster fishery in the Gulf of Maine. Tracks were recorded hauling fixed gears, mobile gears, and transiting. The device was successfully mounted to the dash of the vessel and plugged directly into a USB power supply.
The NEMO successfully transmitted locations at a ping rate of 30 minutes even from within the cabin of the vessel. When the device was removed from USB power and stored with no direct exposure to the sky, the device continued to transmit accurate locations until it ran out of battery, which could last for days dependent on ping rate and available sunlight.

Data Access:
CLS maintains a secure website called 'Themis' that allows users to view vessel tracks. Themis is a detailed website with additional features beyond vessel tracks including rendering maps, overlays of weather and environmental conditions, visualization of geofenced areas, and sending commands to devices.

Figure 3. CLS NEMO unit.

Pelagic Data Systems

Overview and Installation:

Pelagic Data System's VTS device (Figure 4) is solar powered and must be installed on the exterior of the vessel where it will be exposed to direct sunlight. There are no additional cables or power supplies; this allows the device to be installed on vessels of varying sizes and electrical capabilities across a range of small-scale fisheries.

API Integration:

Pelagic offered a standard REST-based API for access to location data. The design of their API provided location data for a group of devices, which required eTRIPS mobile 2 to filter data for the specific active eTRIPS mobile 2 user account. This resulted in larger data downloads and additional eTRIPS mobile 2 processing, in contrast to other vendors' APIs which would supply only the location data for the specific active eTRIPS mobile 2 user account. This design could potentially be used by a knowledgeable user to access location data for devices owned by other users.

Deployment/Use and Data Transmission:

Pelagic tracking devices were deployed on 14' skiff used for recreation like those utilized in inshore shellfish commercial fisheries. Additional testing occurred on a Rhode Island owned 50' research vessel. The unit was mounted on a handrail on the roof of the vessel with no obstructions to sunlight. The test unit was able to successfully transmit location data. Testing showed that prior to deployment it was beneficial to allow the device to charge in direct sunlight exposure for a minimum of 48 hours. Additionally, between trips, the VTS unit should not be left in areas without direct sunlight exposure for extended periods of time.

Data Access:

Pelagic Data Systems maintains a secure website to manage device(s). Through the website, a harvester may review the status of trackers including their battery level and installation status. Devices may be uninstalled and installed by the user on this website. The VTS can automatically identify a berthing location, and this utility allows the device to assign tracks to individual fishing trips. Users may view the tracks of individual trips on the website allowing for a simple view of vessel track information.

Figure 4. Pelagic VTS device.

Tablet as a Tracker

Overview and Installation:

Three tablet models were tested: iPad Mini 5, Samsung Galaxy Tab A, and Samsung Galaxy Tab Active 2. To function as a tracker, each tablet must have internal GPS capabilities. At the time of this study, mobile devices with an iOS operating system (iPad Mini 5) required that the device have cellular capabilities to utilize internal GPS functionality. Most Android tablets (such as Samsung Galaxy Tabs) came standard with internal GPS functionality.

Devices may be safely mounted on a vessel dash using a twist-lock suction cup mount by RAM mounts. To record vessel tracks, the tablet device must remain powered on with eTRIPS mobile 2 application open and actively tracking a trip. All tablets tested in this study had an internal battery, but it is recommended that the tablet be actively powered via USB when used as a tracker.

API Integration:

No external web-based API is needed for this model as the eTRIPS mobile 2 application directly integrates with the GPS function of the mobile device.

Deployment/Use and Data Transmission:

Testing of tablets serving as the vessel tracking device was limited to automobiles at the time of this report. Device locations were successfully recorded from inside the automobile.

Data Access:

Submitted tracks may be reviewed directly in the eTRIPS mobile 2 application using map view.

Device Cost

Approximate device costs are provided in Table 1, as last updated in November 2021. Both unit price and data charges are subject to change.

Table 1. Price comparison of cellular VMS devices tested with costs and currency conversions reported as of November 2021.

Device	Unit Price	1 Year Data Service	API Fee	Total Startup Cost per Vessel
Faria Beede	$395	$300	N/A	$695
Succorfish	$650	€120 ($135) for 5-minute pings €170 ($191) for one-minute pings	N/A	$785 to $841
CLS NEMO	$349	$249 $349 with distress alerting.	N/A	$598 to $698
Pelagic	$150	$420	$2,000/year*	$2,570
Tablet as a Tracker	Varies	$0 if not using a cellular data plan; varies by plan if included	N/A	Varies by product/platform

*Pelagic Data Systems charged a one-time $10,000 small project fee for its inclusion in this pilot project to provide API and customer support. A small project was defined as any purchase of under 50 units that would be managed together. While included in the pilot project's original proposal, this fee may be prohibitive for future pilot projects. In 2021, Pelagic Data Systems also implemented an annual $2,000 API fee for any entity accessing their API, which also applied to any subsequent year of the pilot; the details regarding how this fee would scale to extensive deployment of their devices are unclear. For

example, it is unclear if that fee is per vessel or per fleet per year, or a single one-time fee for ACCSP to pull from their API. This is the only company that was tested as part of this pilot project currently imposing such fees for use of an API.

eTRIPS mobile 2 Integration

eTRIPS mobile 2 can track a user's location to provide a record of a vessel's location during a trip through the 'Track a Trip' option. This standard capability uses the GPS functionality of the phone, tablet, or desktop device hosting the application.

This project enhanced the functionality of eTRIPS mobile 2 to allow users to specifically designate if their location tracking data should come from either a VMS device or from the host device's GPS. A configuration screen was added to eTRIPS mobile 2 to provide the parameters required for integration with third party VMS devices. Once configured correctly, eTRIPS mobile 2 on the host device would then periodically check with locations obtained by the VMS unit by accessing a vendor-specific API using a cellular connection from the host device. The location data for the trip would be downloaded to the device, and then uploaded to SAFIS using APIs already established for reporting GPS locations during a trip.

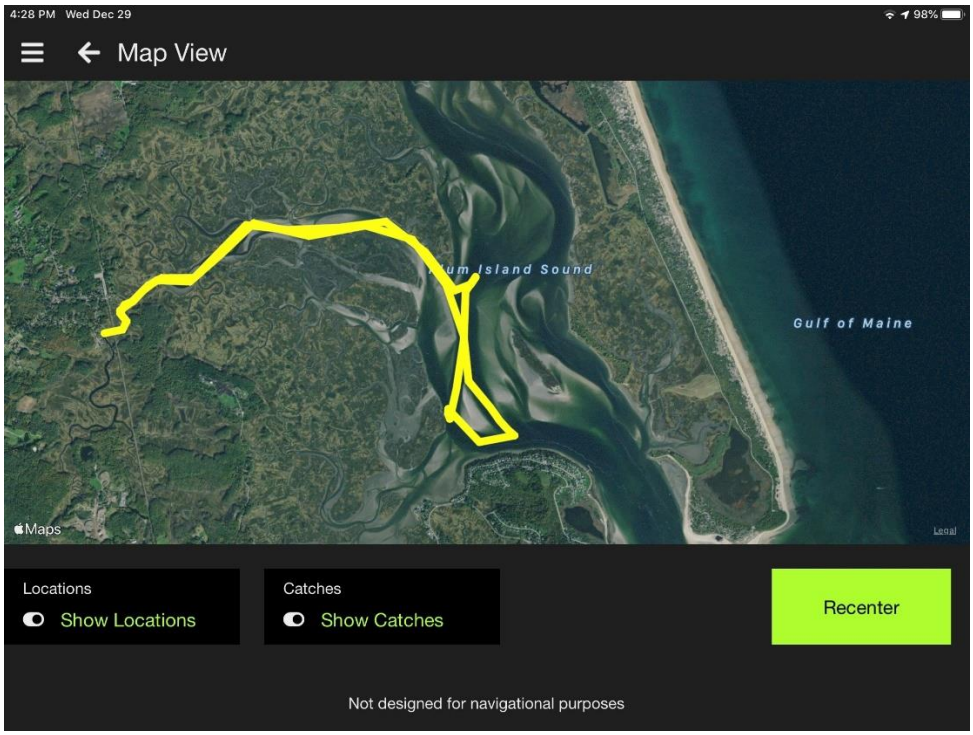

Figure 5. Example track as displayed in eTRIPS Mobile 2 Map View.

The map view functionality in eTRIPS mobile 2 was also enhanced, to display trip and catch location data using location data as obtained by the VMS device.

In addition to the new VMS device configuration view, and enhanced mapping, development for the project entailed creating separate modules, capable of communicating with vendor-specific APIs, for each of the VMS vendors to access the location data generated by a specific user's device.

SAFIS Integration

ACCSP maintains a SAFIS API that allows trip location data to be submitted to the SAFIS database. The API is capable of ingesting both real-time vessel positioning (single GPS location and time) and completed tracks (series of GPS locations and time) attached to eTRIPS mobile 2 reports.
For this project, ACCSP staff developed a web-hosted map interface that allows SAFIS administrators to query and view submitted tracks. The map interface was incorporated as a page within the SAFIS Management System (SMS). Major components of the web-hosted map interface include:

- an authorization scheme that protects the confidentiality of positioning data,
- query interface to select users and trips,
- map interface to display tracks and attributes, and
- color scheme to reflect trip patterns.

An authorization scheme allows administrators to only select SAFIS users under their jurisdiction, along with all trips associated with tracking data. The application employs multiple spatial analyses to transform single data points into descriptive segments. Segments contain information on the vessel's activity, including the GPS coordinates of an initial ping, GPS coordinates of a subsequent ping, distance traveled (feet), and vessel speed (knots). Segments are presented in a red-green color scheme based on the vessel's speed. These features can aid in identifying the difference between fishing activity and transiting (Figure 4).

The application creates a central location for ACCSP to disseminate trip location data, and for partners to apply basic post-hoc track analysis. The interface represents a prototype of Oracle-integrated map technologies applied to fisheries data within the SAFIS environment and can be used as a base for future projects.

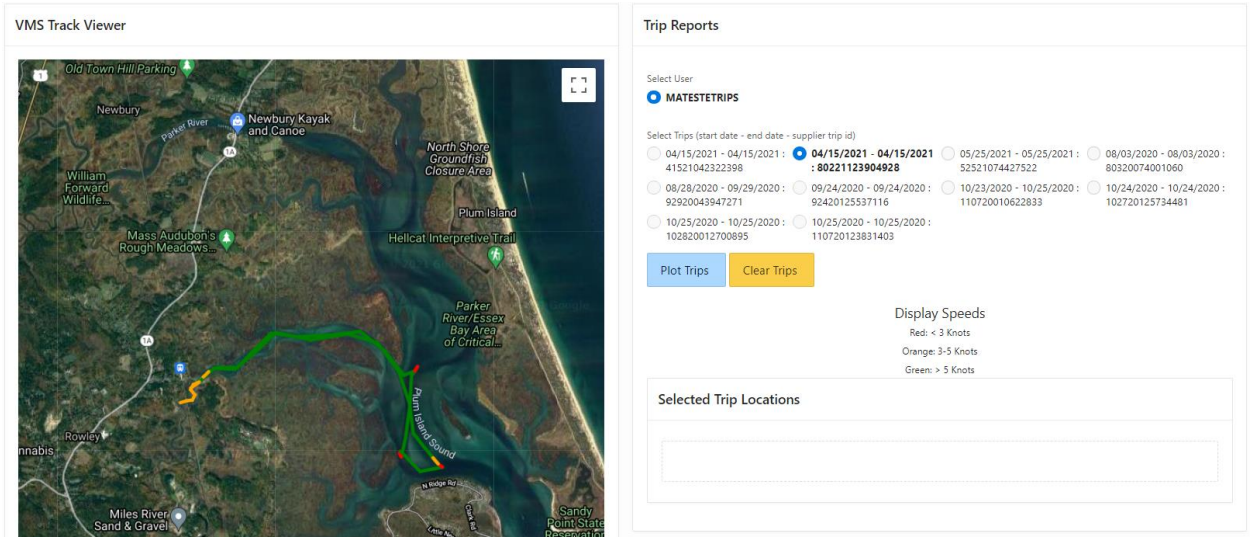

Figure 6. Example track as displayed in the SMS map viewer.

Geofencing

Geofencing functionality within eTRIPS mobile 2 was prototyped to validate the process of the ACCSP supplying data which defines a closed fishing area. eTRIPS mobile 2 was updated to process the defined GPS locations of the closed fishing area and compare with a vessel's tracked location. The process of vessel detection within the restricted area and then automatically executing an action was validated; when eTRIPS mobile 2 determined the vessel was within the closed area, an alert was displayed in the application which could be dismissed by the user.

ACCSP developed a process to display closed fishing areas within the SMS map interface, giving administrators the ability to see when and where vessel locations intersected closed area boundaries. While the feature was not included in the final prototype, the project improved ACCSP's ability to customize the map interface. The feature also provided a blueprint for SAFIS administrators to compare vessel locations, including trip activity and patterns, with closed area boundaries.

Summary

Lessons learned

This project intended to begin testing cellular VMS devices on commercial and/or for-hire vessels in late spring/early summer 2020; however, this coincided with the initial phase of the global COVID-19 pandemic which effectively halted these industries for several months. Once vessels began to fish again, project staff decided to delay any industry involved field testing to not place any additional burden on fleets struggling to rebound from pandemic-related financial losses. This decision was maintained throughout 2020, and in 2021, a decision was made to not pursue further industry-based testing. While having trip data produced by industry would have been informative, the objective of the project was proof-of-concept, a goal that was entirely feasible without industry participation. For an end user, there were very limited changes to eTRIPS mobile 2 application introduced through this project, so input from the user's point of view was limited in value. Successfully connecting devices, syncing the submission of trips, and administrative viewing of the submitted tracks were deemed the most important metrics to achieve a proof-of-concept objective.

Moreover, finding volunteers to participate in a vessel/fishing location tracking program without significant incentives proved difficult. The type of data collected in such programs is sensitive and most industry members are not willing to voluntarily share such data with fishery managers. While a regulatory implementation of a mandatory VMS program will bypass the issue of obtaining volunteers, much work is needed to improve trust with the industry regarding collection and protection of sensitive fishing location data. This will be a significant hurdle to overcome during implementation of a regulated mandatory program, such as the pending requirement for federal lobster permit holders proposed for 2023 discussed further below.

None of the project partners had implemented or participated in a similar data collection program to date, so development of such a program highlighted many nuances, complicated dependencies, and unexpected issues. As noted above, project partners quickly realized that a companion administrative application was necessary for the success of this pilot. While not included in the proposal, appropriate shifts in budget were made to accommodate this need and ACCSP added the task to their workload. The application built for this work is relatively basic but is intended to be the basis for a more enhanced version to be developed during subsequent proposal(s).

Each VMS company participating in the pilot had unique devices and business practices. No device tested in this pilot, or probably anywhere on the market, is currently "plug and play" for a captain, but even more so for an integrated platform. Furthermore, this market is growing, expanding, and changing rapidly. The reliance on a company's API to pull in tracks matching a trip report worked well until the company made a change to their API resulting in immediate cessation of data transfers to SAFIS. These changes were not often communicated in a timely or effective manner and required staff to continuously monitor success of transmission of tracks to identify when changes occurred. Thus, APIs that are dependent on the vendor, as opposed to those maintained by ACCSP or its partners, may not be the most appropriate method for transmission in a large-scale mandated program. However, the development and application of standard operating procedures clearly defined for all approved vendors may help streamline this process. Additionally, defined consequences for not meeting a standard would likely help compliance long-term.

Some enhancements intended to be included in the proposal for this project were deemed unfeasible upon the launch of the project. For example, connections with a law enforcement application were not pursued in this project as originally intended. Developing a functional application and administrative program took most of the development time leaving very little to navigate the significant hurdles such a connection posed. Project partners quickly realized that creation of such a platform would necessitate extensive work on an administrative platform as well as extensive coordination with partners for data release and sharing agreements as well as enhancing any confidential rules applied to such an interface.

Secondly, hail in/hail out features were left out of the development for several reasons. Initially proposed as a benefit to the program, such a feature was not deemed necessary as the trip report effectively acted as a hail out feature. Additionally, no real time communication between a device and the tablet (e.g., Bluetooth) was tested to accomplish such development. Project partners believed that Bluetooth communication from a tablet located inside a fishing vessel wheelhouse to an externally mounted vessel tracking device could be unreliable creating frustration for industry participants. Lastly, there was a lack of Bluetooth features in tested devices. An API connection through cellular was determined to be the best option for connecting tracks to an application.

Ultimately, this project provided a blueprint for VMS data integration into SAFIS. The lessons learned from attempting, and successfully completing, integration of track data into trip report data were valuable and productive.

Device Recommendations

Although this project only tested a few units concurrently, some recommendations can be made regarding scaling cellular VMS devices to a much larger program (e.g., lobster fishery, specialized opt-in programs). No individual vendor/device provided significant advantages over the others. All cellular devices were successfully integrated with eTRIPS mobile 2 and were functionally capable of uploading location data to the ACCSP administrative database. As such, no vendor/device should be excluded as a potential recommendation. All comments below are the opinions of the authors and may not represent the views of their respective divisions.

- *Faria Beede* – The Faria Beede WD300 and WD500 units proved to have both straightforward installation procedures and a smooth API integration process. Total startup costs are generally in line with the most affordable units tested in this project. A noted drawback of the tested Faria Beede units was both a lower 'ruggedness' rating compared with comparable units and a lack of marine wiring. This could potentially lead to some reliability issues for these units long-term.

- *Succorfish* – The Succorfish SC2 units featured straightforward physical installation of units on vessels, however, effective activation of the units for use proved challenging. Succorfish's installation application provides a secure method to track tracking device installations but also creates a more complex installation process than necessary for this project. Numerous communications with the vendor were required to successfully activate units and provide the requisite vessel/unit pairing needed for back-end data processing. Communications were relatively slow in many cases. Total startup costs for Succorfish SC2 units were slightly higher than those of CLS and Faria Beede. In 2021, a new model of the SC2, SC2 GEN 2, was released and the associated costs of this item were not available at the time of this report. During Phase 2 of this project described in further detail below, project staff hope to use the GEN 2 device as a model to create a streamlined process to onboard new tracking devices. At this time, the originally tested SC2 generation 1 unit continues to function as expected.

- *CLS* – The CLS Nemo units were easy to install and activate. However, given the need for a magnet to re-set the NEMO unit, there were some concerns about the feasibility of this at sea if a magnet was not available. When required, communications with CLS and project partners were timely and effective. The CLS NEMO device had a minimum ping rate of 5 minutes; however, ping rates as low as 1-minute will likely be required in future programs. Another potential issue with the CLS NEMO unit is the use of an older SOAP-based design for their API for access to location data as opposed to the more modern REST-based designs offered by all other vendors.

- *Pelagic Data Systems* – The Pelagic VTS devices were the easiest to physically install on vessels as no wiring is required. The tested units were able to charge and operate successfully under the sunlight/weather conditions tested. Previous pilot projects had experienced issues with Pelagic units at higher latitudes (Maine). Financially, working with Pelagic was by far the most expensive of all tested vendor. Although individual unit prices and annual data fees were the cheapest of all tested standalone VMS units, the company charged both a 'small project fee' (less than 50 units) of $10,000 and have indicated that there will be a $2,000 'API fee' in the future where external access to their API is needed. At the time of this report, the method and requirements of how this 'API fee' (e.g., per unit, per state, per agency) would be charged were unclear. These fees place the Pelagic units at a significantly higher administrative cost than all other tested vendors.

- *Tablet as a Tracker* – Utilizing tablets as a tracker was the most unique of all tested setups. Mounting a tablet in the wheelhouse and back-end connection of tracking capabilities to eTRIPS mobile 2 is perhaps the simplest of all tested devices. Additionally, the lack of administrative oversight from a third-party vendor regarding API connections, etc. is appealing from a management perspective. However, the functional requirements of tracking a trip require much more user interaction than the cellular VMS devices and lends itself to potential user error that could result in the loss of trip tracking data. To track a trip using a tablet, the tablet must be on and actively running the eTRIPS mobile 2 application. Running the application at all times can drain a battery within the duration of many trips, thus requiring the tablet to be on a charger to maintain track data collection. If the step of starting to track a trip (requires a few button pushes with the application) is missed, no tracking data will be recorded. Due to this potential for user error, it is difficult to recommend tablets (as tested in this project) as a realistic device for wide-scale tracking in the fishing fleet. Additionally, tablets lack the necessary ability to meet many

typical VMS requirements such as 24/7 tracking, inability to detach the tracking device, etc. Thus, this option is unlikely to be approved for use in a regulatory program. However, small-scale project-based implementations may benefit from this option and associated technology.

Future Needs

This pilot project highlighted several advances necessary to support a full implementation of a VMS data collection program in any jurisdiction intending to integrate tracks with trip reports. Several of these advances would also be applicable and necessary for a non-integrated tracking data collection program. Much of this work has been proposed in the proposal submitted to ACCSP's 2022 RFP titled "**Integration of vessel monitoring systems and electronic reporting in SAFIS and SAFIS applications through API development and field testing of multiple hardware options: Phase 2."** The objectives of this project include:

- Test additional devices for compatibility with an integrated platform and provide an updated comparative cost and specification analysis of these additional devices.
- Develop strawman requirements for future cellular and/or low-cost satellite VMS devices to meet ACCSP standards for integration into the program.
- Investigate enhancements to current program capabilities for specific use cases of geofencing and track line post-hoc analysis.
- Enhance the existing ACCSP administrative tool and scope requirements to develop a new tool to view tracks in real time and provide a platform for advanced post-hoc analysis.
- Conduct an informal survey of fishermen to solicit ideas for future improvements of program and end user needs.

A major goal of this second project (Phase 2) is to establish protocols and standard operating procedures to make it more straightforward for new vendors to be approved for integration as well as provide partners with established methods to request enhancements to either the mobile data collection options or the ACCSP offered administrative tool. Enhancements to either platform require dedicated development, testing, and deployment efforts and as such need to be incorporated into expected workloads and budgets.

More specifically, an enhanced administrative application will be necessary for a scaled-up implementation in any fishery or jurisdiction. The current application has limited functionality for viewing and analyzing submitted VMS data. Phase 2 intends to enhance this existing application. At a minimum, the expanded existing viewer should be able to display all completed tracks from a given vessel over a specified time period, provide information pertaining to the vessel submitting those data, and provide basic metrics regarding specific trips (e.g., vessel speed) with the opportunity to download data for further analysis.

While the expanded track viewer will allow basic data queries and provide managers a starting point for post-hoc analysis, there is also a need for a dedicated and robust quasi-real-time track viewer and post-hoc analysis tool. Development of an ACCSP web-hosted administrative application allowing for both quasi-real-time view of vessel location and post-hoc analysis is required for the spatial analysis necessary to manage discreet fishing management areas. Furthermore, non-trip tracking data storage and viewing is essential for management. The best available service needed to host such a platform should be scoped and baseline requirements defined as will a path forward for feature enhancements to produce output that can be used by partners for data analysis. Phase 2 proposes to scope what this

application would look like and how it would functionally be developed and hosted. However, actual development of this advanced application would not occur under Phase 2 funding; instead, a Phase 3 proposal would be submitted for the 2024 RFP.

Additionally, project partners intend to obtain more industry feedback on VMS data collection platforms during the Phase 2 project. Unlike this pilot project, incentives were built into the Phase 2 budget to encourage participation and ideally increase the feedback from volunteers. This feedback will be critical to a successful launch of a larger scale implementation, perhaps even that proposed by draft Addendum XXIX to Amendment 3 to the Lobster Fishery Management Plan and Draft Addendum IV to the Jonah Crab Fishery Management Plan that is set for public hearings in January 2022. If passed, NOAA Fisheries, in partnership with states and the ASMFC would implement a full VMS data collection program in the federal lobster fleet for 2023.

Lastly, a detailed outreach plan for implementation is needed. Given the stark differences in installation methods identified in the four devices tested in this pilot, installation guides must be device specific. There is no available "plug and play" option and clear instructions must be provided to participating industry members for successful installation and data collection. Many of these guides are in progress for use with the integrated eTRIPS mobile 2 platform and will be available for distribution in 2022.

Next Steps

This pilot project proved that track and trip data can be successfully integrated within the ACCSP platforms, thus greatly expanding the scope of possible analyses of fishing effort beyond the current, more restrictive statistical area or single point limitations. VMS cellular technology is rapidly evolving and requires extensive adaptability and flexibility from partners and ACCSP for program implementation, and simultaneously, managers are actively looking to implement VMS data collection programs in regulations. Per an August 4th press release from the Atlantic States Marine Fisheries Commission (ASMFC), "The ASMFC's American Lobster Management Board initiated Draft Addendum XXIX to Amendment 3 to the Interstate Fishery Management Plan for American Lobster. The Draft Addendum considers implementing electronic tracking requirements for federally permitted vessels in the American lobster and Jonah crab fishery, with the goal of collecting high resolution spatial and temporal effort data. Draft Addendum XXIX will propose specifications for tracking devices to ensure the collected data meet both management and assessment needs. These specifications include data reporting rates, preferred technologies, and minimum standards for tracking devices." Project staff already have contributed extensively to the Draft Addendum language and expect to participate heavily in implementation if passed. This effort will be in parallel with the Phase 2 work described above and expected to begin in summer 2022.

Lastly, the Phase 3 project intended to be proposed in spring 2023 for 2024 funding will be the final phase of major development. Once a fully functional spatial analysis tool is available for partners through an ACCSP hosted platform, jurisdictions will have much more flexibility for implementing their own programs as well as analyzing data collected through existing programs. At that time, providing a more thorough review of law enforcement needs and administrative functions that could be shared with such agencies should be reviewed and developed.

Table 2. Technical specifications relevant to VMS tracking programs for each tested device.

	Faria Beede	Succorfish	CLS	Pelagic	Apple (GPS)	Android (GPS)
Version Tested	WD300 WD500	SC2 VMS GPRS (Discontinued)	Nemo	PDT VTS	IPad Mini 5 (Discontinued)	Samsung Galaxy Tab Active2 Galaxy Tab A
Waterproof Rating	IP66	IP67	IP67	IP68	Case/Device Dependent	Case/Device Dependent
Attachment Method to Vessel	Fixed to dash	Bolted to exterior	Bolted to exterior	Bolted to exterior	N/A	N/A
Cost						
Device Cost (as tested 2019)	$395	$650	$349	$150	$400	$300-400
Device Cost (Nov 2021)	$395	Discontinued	$349	$150	$499	$300-500
Data Cost (Yearly)	$300	$120	$350	$420	$0	$0
Project Fee	$0	$0	$0	$10,000	$0	$0
Connectivity						
Cellular	Yes	Yes	Yes	Yes	Optional add-on	Optional add-on
Satellite	No	No	Yes (optional)	No	No	No
Bluetooth	No	Yes	Yes	No	Yes	Yes
WiFi	No	Yes	No	No	Yes	Yes
Serial/UART	Yes	Yes	No	Yes	No	No
Power						
External	Yes (required)	Yes (required)	Yes (optional)	No	Yes (optional)	Yes (optional)
Internal Battery	No	Yes	Yes	Yes	Yes	Yes
Solar	No	No	Yes (partial)	Yes	No	No
Software						
Vessels managed separately from devices	Yes	Yes	Yes	Yes	Yes	Yes
User-adjustable ping rate	No	No	No	No	No	No
Minimum ping rate	1 minute	1 minute	5 Minutes	1 second	1 second	1 second
API (required for project)	Yes	Yes	Yes	Yes	Yes	Yes
Ease of eTRIPS Integration	Easy	Moderate	Moderate	Difficult	Easy	Easy
Horizontal Accuracy Reporting	Yes	No	No	No	Yes	Yes

Atlantic States Marine Fisheries Commission

DRAFT ADDENDUM XXIX TO AMENDMENT 3 TO THE AMERICAN LOBSTER FISHERY MANAGEMENT PLAN & DRAFT ADDENDUM IV TO THE JONAH CRAB FISHERY MANAGEMENT PLAN FOR PUBLIC COMMENT

Electronic Vessel Tracking for Federal Permit Holders

December 2021

Sustainable and Cooperative Management of Atlantic Coastal Fisheries

American Lobster Draft Addendum XXIX/Jonah Crab Draft Addendum IV for Public Comment

Public Comment Process and Proposed Timeline

In August 2021, the American Lobster Management Board (Board) initiated Draft Addendum XXIX to Amendment 3 to the American Lobster Fishery Management Plan/Addendum IV to the Jonah Crab Fishery Management Plan (abbreviated as Addendum XXIX in this document) to consider implementing electronic tracking requirements for federally-permitted vessels in the American lobster and Jonah crab fishery. The purpose of this action is to collect high resolution spatial and temporal effort data to address a number of challenges facing the fishery, including stock assessment, protected species interactions, marine spatial planning, and offshore enforcement. This document presents background on the Atlantic States Marine Fisheries Commission's management of lobster and Jonah crab, the addendum process and timeline, a statement of the problem, and management measures for public consideration and comment.

The public is encouraged to submit comments regarding the proposed management options in this document at any time during the addendum process. The final date comments will be accepted is **January 31, 2022 at 5:00 p.m**. **EST.** Comments may be submitted by mail, email, or fax. If you have any questions or would like to submit comments, please use the contact information below.

Mail: Caitlin Starks
Atlantic States Marine Fisheries Commission
1050 N. Highland St. Suite 200A-N
Arlington, VA 22201
Fax: (703) 842-0741

Email: comments@asmfc.org
(Subject line: Lobster Draft Addendum XXIX)

Aug – Nov 2021	Draft Addendum for Public Comment Developed
December 2021	Board Reviews Draft and Makes Necessary Changes
January 2022	Public Comment Period Including Public Hearings
Winter 2022	Board Reviews Public Comment, Selects Management Measures, Final Approval of Addendum XXIX
TBD	Implementation of Addendum XXIX Provisions

American Lobster Draft Addendum XXIX/Jonah Crab Draft Addendum IV for Public Comment

Table of Contents

American Lobster Draft Addendum XXIX/Jonah Crab Draft Addendum IV for Public Comment

1.0 Introduction

The Atlantic States Marine Fisheries Commission (Commission) has coordinated the interstate management of American lobster (*Homarus americanus)* and Jonah crab (*Cancer borealis*) from 0-3 miles offshore since 1996 and 2015, respectively. American lobster is currently managed under Amendment 3 and Addenda I-XXVI to the Fishery Management Plan (FMP). Jonah crab is managed under the Interstate Fishery Management Plan and Addenda I-III. Management authority in the Exclusive Economic Zone (EEZ) from 3-200 miles from shore lies with NOAA Fisheries. The management unit for both species includes all coastal migratory stocks between Maine and Virginia. The management unit encompasses seven Lobster Conservation Management Areas (LCMAs) and two lobster stocks: the Gulf of Maine/Georges Bank (GOM/GBK) stock and the Southern New England (SNE) stock (Figure 1).

The American Lobster Management Board (Board) initiated Draft Addendum XXIX to consider implementing electronic vessel tracking requirements for federally-permitted vessels in the lobster and Jonah crab fisheries to collect location and spatial effort data. For several years, the Board has recognized the critical need for high-resolution spatial and temporal data to characterize effort in the federal American lobster and Jonah crab fisheries. In February 2018, the Board approved Addendum XXVI to improve the spatial resolution of lobster and Jonah crab harvester data to address ongoing marine spatial planning activities and assessment challenges. At the same time, the Board approved a one-year pilot program to test electronic tracking devices in the lobster and Jonah crab fishery. The intent of this pilot program was to identify appropriate tracking devices for use in the fishery and inform a Board decision on whether electronic tracking should be pursued in part, or all, of the lobster and Jonah crab fishery. Simultaneously, the Board supported additional work focusing on data integration and hardware testing. These projects lay the groundwork for implementing electronic tracking in the fishing fleet.

Based on recommendations from a work group comprising representatives from NOAA Fisheries, state and federal law enforcement, and members of the Board, Draft Addendum XXIX was initiated to consider requirements for electronic vessel tracking for federally-permitted vessels in the lobster and Jonah crab fishery under the authority of the Atlantic Coastal Fishery Cooperative Management Act (ACFCMA). The goal of the addendum is to collect high-resolution spatial and temporal data to characterize effort in the federal American lobster and Jonah crab fisheries for management and enforcement needs. These data will improve stock assessment, inform discussions and management decisions related to protected species and marine spatial planning, and enhance offshore enforcement.

2.0 Overview

2.1 Statement of the Problem

To date, the majority of spatial analyses of lobster and Jonah crab fishery data have been constrained to NOAA statistical areas and state management areas, hindering the ability to

quantify effort in specific regions or identify important transit routes and fishing grounds. The application of electronic vessel tracking to this fishery could significantly improve the information available to fishery managers and stock assessment scientists. In particular, a number of challenges the fishery is currently facing pose a critical need for electronic tracking data in the offshore fishery:

1) The stock assessment is currently limited by the coarse spatial scale of available harvest data for American lobster. NOAA Fisheries statistical areas and latitude/longitude coordinates are collected on the NOAA Fisheries Greater Atlantic Regional Fisheries Office (GARFO) Vessel Trip Report (VTR), however the collected spatial data represent the location of where the majority of the fishing effort occurred. The nature of the coarse spatial data is insufficient for management and scientific purposes. Though harvester reporting at the 10-minute square level was adopted for federally-permitted lobster vessels reporting to the states and the federal VTR continued to collect latitude and longitude for each trip, the precision of spatial information is not consistent across federal permit holders. This finer scale data does not provide the precision to accurately apportion effort within the stock units.

2) Due to interactions between protected marine resources and the lobster and Jonah crab fisheries, the fisheries will be required to implement significant risk reduction efforts under the Atlantic Large Whale Take Reduction Plan. These risk reduction efforts are based on models that estimate the location of vertical buoy lines using effort data of a similarly coarse resolution.

3) Recent executive orders have prioritized the development of offshore renewable energy and the conservation of US waters. The development of emerging ocean uses such as wind energy, aquaculture, and marine protected areas may all create marine spatial planning challenges for the lobster and Jonah crab fisheries.

4) The large geographic footprint and low density of lobster gear in the offshore federal management area makes it difficult to locate gear for compliance checks, reducing the efficiency and efficacy of offshore enforcement efforts.

Each of these issues pose an acute need for high-resolution data on where and when fishery effort in the federal fleet occurs. Electronic tracking requirements in the federal fishery would fill this information gap and support fishery managers in addressing the aforementioned challenges.

2.2 Background

2.2.1 Electronic Tracking Pilot Program

When Addendum XXVI/III to the Lobster and Jonah Crab FMPs, respectively, were approved in February 2018, a one year pilot program was established to test electronic tracking devices on lobster and/or Jonah crab fishing vessels. Given the variety of vessels and the spatial distribution of the fishery (both in distance from shore and breadth along the coast), the pilot program tested multiple tracking devices in various conditions to identify technologies for use the lobster and Jonah crab fisheries.

The project assessed tracking devices from several different vendors by placing them on volunteer vessels from Maine and Massachusetts with lobster permits from June 2019 to May 2020. The project evaluated the technologies by looking at ease of compliance (or non-compliance), ability to determine trap hauls from steaming activity, industry feedback, cost-per fisherman, and law enforcement feedback. The results of the pilot showed that though the devices differed somewhat in features and performance, they all were able to deliver vessel positions and detect individual trap hauls. It also found that cellular based systems were both lower in cost and permitted faster ping rates than satellite systems. For example, the costs associated with cellular tracking devices tested during the pilot program range from $150 to $650 for the initial purchase of the tracking unit, and annual data service plans that would meet the proposed tracking requirements range from $191 to $420 per year. These costs are provided as examples only and may change dependent on which devices are approved for use in the fishery.

In addition to the pilot program testing tracking devices, the Board supported work on data integration and additional hardware testing. Specifically, this project focused on linking spatial data collected on vessel tracking devices to harvester reports submitted on eTrips Mobile. Recognizing the critical need for data to characterize spatial and temporal effort of the lobster fishery and the potential of available technology to address this need at low costs, the Board initiated Addendum XXIX in August 2021 to consider the adoption of electronic tracking devices in the federal fleet of the lobster and Jonah crab fisheries.

2.2.2 Stock Assessment

A complicating factor in the management of lobster is that the boundaries of the LCMAs do not align with the biological boundaries of the stocks (GOM/GBK vs. SNE). This is particularly problematic in LCMAs 2 and 3 which span both stocks. The intricacy of the stock boundaries is further complicated by the fact that many vessels fishing out of Rhode Island and Massachusetts that harvest lobsters on Georges Bank, must travel through the SNE stock area to reach their port of landing. In addition, these vessels may be permitted to fish in multiple management areas, including areas that span both lobster stocks.

To date, the stock assessment has only been able to analyze stock composition data at the spatial resolution of the NOAA statistical area. This is because not all lobster permit holders report at a finer scale than the NOAA statistical area; for each trip some provide a single latitude and longitude point meant to represent where the majority of fishing occurred, some provide 10 minute square(s) fished, and some provide only the statistical area fished. This creates challenges for the assessment because some parameters in the stock assessment model vary at a finer spatial scale than statistical area. For example, size composition data for lobster catch are currently generated by matching statistical area-specific total harvest data and biosampling data, but preliminary work has indicated size composition varies at a finer spatial scale. Improved spatial resolution of total harvest data from vessel tracking will improve size composition data used in the stock assessment models to improve the accuracy of exploitation and reference abundance estimates.

2.2.3 Fishery Interactions with Right Whales and Protected Resources

To meet the goals of the Marine Mammal Protection Act and the Endangered Species Act, NOAA Fisheries recently published a final rule to amend the regulations implementing the Atlantic Large Whale Take Reduction Plan (ALWTRP) to reduce the incidental mortality and serious injury to North Atlantic right whales (*Eubalaena glacialis*), fin whales (*Balaenoptera physalus*), and humpback whales (*Megaptera novaeangliae*) in commercial lobster and Jonah crab trap/pot fisheries in the Northeast Atlantic (86 FR 51970). This action is being taken to reduce the risks to endangered North Atlantic right whales and other large whales associated with the presence of fishing gear in waters where these animals occur. The ALWTRP includes a significant reduction in the number of vertical buoy lines in the fishery in order to reduce right whale encounters with buoy lines. Weak rope requirements are included to reduce mortalities and serious injuries when entanglements do occur by increasing the chance of right whales freeing themselves from gear. The ALWTRP also includes changes to seasonal restricted areas closed to pot/trap gear that uses stationary vertical buoy lines. Current and future requirements for gear modifications are expected to have a substantial economic impact on the fishing industry.

The required risk reductions included in the ALWTRP are informed by the co-occurrence model, which pairs information regarding the distribution of whales and commercial fishing gear to predict areas where whales may be prone to entanglement. Electronic vessel tracking data would significantly improve the models used to assess the location of vertical lines in the fishery and their associated risk to right whales in the ALWTRP. The Biological Opinion[1] released in May 2021 outlines a Conservation Framework that intends to reduce mortality and serious injury to North Atlantic Right Whales by 95% over ten years. Within this Framework, additional risk reductions could be required in the US lobster fishery starting in 2025. Therefore, it is critical to

[1] The Biological Opinion issued on May 27, 2021 can be found here: https://www.greateratlantic.fisheries.noaa.gov/public/nema/PRD/Final%20Fisheries%20BiOp_05_28_21.pdf?fbclid=IwAR3ombXyORsm5o0aFYuoU84W-oUUIEMQUIK5_bqv2FnmVRuEBV3p_pFOenA

gather and provide updated and enhanced spatial effort data to improve the associated risk reduction models ahead of this timeline.

2.2.4 Marine Spatial Planning

It is critically important to record the footprint of the US lobster fishery as spatial allocation discussions occur as a result of emerging ocean uses such as aquaculture, marine protected areas, and offshore energy development. For example, in 2016, the New England Fishery Management Council (NEFMC) took action on an Omnibus Deep-Sea Coral Amendment, which looked to provide protection to corals in the northwest Atlantic Ocean through the creation of discrete regions and/or broad depth zones. Given the harvest of lobster and Jonah crab occurs offshore, the Commission was asked to provide information on the magnitude of lobster and Jonah crab catch in specific regions in order to understand potential economic impacts. At the time, the lobster and Jonah crab fishery management plans required harvesters to report landings via NOAA statistical areas, regions much larger than those being considered for coral protection. As a result, the spatial resolution of catch and effort data for the lobster and Jonah crab fishery proved too coarse; without fine scale spatial information, impacts to the lobster and Jonah crab fishery had to be estimated by piecing together information from harvester reports, industry surveys, and fishermen interviews. Similar challenges occurred when the Northeast Canyons and Seamounts Marine National Monument was established in 2016, and it is expected that these challenges will continue given increased activity surrounding offshore wind, aquaculture, and oil and gas exploration. Additionally, in January 2021 President Biden issued an Executive Order on Tackling the Climate Crisis at Home and Abroad. Included in this Executive Order is a goal of protecting 30% of US waters by 2030. Given this goal, documentation of the US lobster fishery footprint is essential for consideration in future discussions and decisions regarding marine protected areas.

2.2.5 Offshore Enforcement

A potential benefit of collecting electronic vessel tracking data is the ability to improve enforcement in the offshore area. It has long been recognized that enforcement efforts in the offshore federal lobster fishery need to be improved, a particular concern given the rapid increase in landings and value during the last decade. As a result, there are ongoing efforts to enhance enforcement capabilities, including discussions around an offshore enforcement vessel capable of hauling and re-setting long trawls.

Enforcement personnel have consistently noted that having the ability to differentiate when a boat is steaming versus hauling is critical to efforts to inspect gear and identify when fishermen are using illegal gear. Even if location data are not reported in real-time, once a fishing location can be identified from vessel tracking data, enforcement personnel would be able to go to that location to inspect gear for appropriate markings, buoys, escape vents, and ghost panels. Given finite enforcement resources, information on distinct fishing locations would improve the efficiency and capability of offshore enforcement efforts.

3.0 Proposed Management Options

This section proposes to add to Section 3.1 of Addendum XXVI to American Lobster Amendment 3 and Section 3.4.1 of the FMP for Jonah Crab under the adaptive management procedures established in section 3.6 of the FMP for American Lobster and 4.4 of the FMP for Jonah Crab.

The intent of the proposed management options is to enhance harvester effort data collection. The Board is seeking public comment on each of the options included in the Draft Addendum.

Option A: Status quo

Under this option no changes to current management and monitoring requirements for lobster and Jonah crab would be implemented.

Option B: Implement electronic tracking requirements for federally-permitted lobster and Jonah crab vessels with commercial trap gear area permits

If Option B is chosen, federal lobster and Jonah crab vessels issued commercial trap gear area permits would be required to install an approved electronic tracking device to collect and transmit spatial data in order to participate in the trap gear fishery. This means any federally-permitted vessel without an approved electronic tracking device is prohibited from landing lobster or Jonah crab taken with trap gear. Federal permit holders would be required to install and activate an approved device prior to beginning a lobster or Jonah crab fishing trip with trap gear. The device must remain on board the vessel and powered at all times when the vessel is in the water, unless the device is authorized to power down by the principal port state. Possible reasons for authorization to power down include but are not limited to vessel haul out/repairs and device failure reported to the principal port state. Tampering with an approved tracking device or signal is prohibited; tampering includes any activity that may affect the unit's ability to operate or signal properly, or to accurately compute or report the vessel's position. These requirements would apply to all federal permit categories included in Table 1.

Table 1. Applicable Federal Permit Categories*

Federal Permit Category Name	Federal Permit Category Abbr.	Description
Commercial Trap Gear Area 1	A1	May harvest lobster in Federal Lobster Management Area 1 using trap gear
Commercial Trap Gear Area 2	A2	May harvest lobster in Federal Lobster Management Area 2 using trap gear
Commercial Trap Gear Area 3	A3	May harvest lobster in Federal Lobster Management Area 3 using trap gear
Commercial Trap Gear Area 4	A4	May harvest lobster in Federal Lobster Management Area 4 using trap gear
Commercial Trap Gear Area 5	A5	May harvest lobster in Federal Lobster Management Area 5 using trap gear
Commercial Trap Gear Outer Cape Area	AOC	May harvest lobster in Federal Lobster Management Outer Cape Area using trap gear
Commercial Trap Gear Area 5 Waiver	A5W	May harvest lobster in Federal LMA 5 under the black sea bass pot waiver

*Commercial Trap Gear Area 6 is excluded, as the area occurs in state waters and requires a valid CT or NY state lobster license to fish in this area. If a vessel is permitted for Commercial Trap Gear Area 6 only, these requirements do not apply.

For additional clarity on situations for which the electronic tracking requirements would not apply, several examples are provided below:

- A person with a state-only lobster permit and no federal commercial trap gear area permit
- A permit holder with federal commercial trap gear permit that has been placed in confirmation of permit history (CPH), a permit status for when a vessel with limited access permits has sunk, been destroyed, or has been sold to another person without its permit history
- A vessel with a federal commercial trap gear permit that does not fish trap gear at any point in the fishing year (i.e., only fishes other gear under a federal lobster commercial/non-trap permit, charter/party non-trap permit, and/or does not fish any trap gear at any point in the fishing year)

Specifications that would be required of tracking devices to be approved for use in the fishery are described in Section 3.1. Administrative processes for the tracking program are described in Section 3.2. If Option B is adopted a separate document will be developed that will include additional details and standard operating procedures to guide the management agencies in implementing the vessel tracking requirements.

3.1 Tracker Specifications and Approval

3.1.1 Required Components and Minimum Technological Standards

The minimum criteria that must be met by tracking devices and product vendors for approval for use in the fishery are summarized in Table 2. Additional details on these requirements is included in the subsequent sections.

Table 2. Required criteria for approval of vessel tracking devices and vendors

Requirements of Tracking Devices and Vendors
• Collection of location data at a minimum rate of one ping per minute for at least 90% of the fishing trip • Data events must contain device's current datetime, latitude, longitude, device and vessel identifier • Minimum accuracy of 100 m (328.1 ft) accuracy and position fix precision to the decimal minute hundredths • Ruggedness specifications allowing function in the marine environment • Ability to PUSH location data to the ACCSP trip locations API • Vendor customer service requirements • Vendor must maintain the confidentiality of personally identifying information and other protected data in accordance with federal law

Data Collection Rates

A tracking device must collect location data at a minimum rate of one ping per minute for at least 90% of the fishing trip. A "ping" refers to a data event created by a tracking device containing the device's current datetime, latitude, longitude, device/vessel identifier and other optional data fields. The above rate is necessary to distinguish lobster fishing activity from transiting activity and can allow estimation of the number of traps per trawl (See Appendix A). Data transmission from the tracking device to the vendor should be initiated as soon as possible but no more than 60 minutes from the time the fishing trip is completed.

If the tracking device can determine when the vessel is in its berth, the device may automatically decrease the tracker ping rate. If the device is unable to automatically detect a berth location, the device must remain connected and pinging at one ping per minute at all times. This recommendation is designed to permit vendors' efforts to minimize cellular data and power consumption while the vessel is in port. For example, if pinging at a slower rate in the port, the tracking device could run on an internal battery and sleep between pings to save power versus being hard-wired to the vessel's power system. Additionally, this feature would improve data quality and allow for validation of track data against self-reported VTR trip start and end times.

Precision and Accuracy Requirements

A tracking device must meet minimum precision and accuracy requirements, specifically a minimum of 100 m (328.1 ft) accuracy and position fix precision to the decimal minute hundredths. It is expected that most modern tracking devices will be capable of significantly higher accuracies than 100 m.

Tracking Hardware Considerations

A tracking device must have ruggedness specifications that allow it to function in the marine environment, which may depend on where the device is installed on the vessel.

No specific requirement is specified for how a device shall be powered, provided that the tracking device can satisfy the technical requirements set forth in this section. Devices will likely be powered by some combination of vessel power, internal battery, and/or solar. The Commission level work group will be responsible for determining whether a device satisfies hardware requirements.

Data Submission Requirements

Tracking vendors must be able to PUSH location data to the Atlantic Coastal Cooperative Statistics Program (ACCSP) trip locations API and meet all specifications of this interface (https://accsp-software.github.io/spec-unified-api-prod/#tag/eTrips/paths/~1trip_locations/post). In addition to the device identifier, datetime, latitude, and longitude, vendors must also include a vessel identifier (Coast Guard number or state registration number) in the API submission. This data element is necessary to identify the vessel the device is tracking at the time of the ping. Data transmission from the vendor to the ACCSP trip locations API should occur in near real time upon receipt.

Tracking vendors must send test data to the ACCSP trip locations API as proof of the ability to satisfy the data submission requirements. The vendor is expected to have a mechanism for setting the vessel identifier in the administrative web interface to their tracking system.

Customer Service Requirements

Device vendors will serve as the primary contact for the vessel tracking devices distributed by their company. This includes technical support related to hardware and any device-specific software. Vendors should provide diagnostic and troubleshooting support to permit holders, state agencies, and ACCSP, which is available seven days per week and year-round. Response times for customer service shall not exceed 24 hours. Detailed installation instructions must be provided to permit holders or their designated agents by vendors. Procedures should be established that assist permit holders to properly maintain their device. In the event of tracker

malfunction, vendors must be available to troubleshoot, repair, or replace the device. Vendors must have the capability to diagnose and resolve communication anomalies with permit holders or state agencies. Upon request of ACCSP, state partners, or NOAA Fisheries, vendors should be available to assist with vessel tracking system operation, resolving technical issues, and related data analyses.

3.1.2 Device Approval Process

The approval of vendors and devices will be undertaken by a Commission-level work group process. The work group will be comprised of state, federal, and Commission staff. Changes to the requirements of tracking devices can be made by this working group with approval of the Lobster Board. The work group will review device specifications to determine if a device meets the required components and minimum technological standards. Vendors will be required to provide the ASMFC work group with the information in Table 3.

Table 3. Information that must be submitted by vendors to device approval work group

Information to be provided by vendors for work group review and device approval

• Company information (name, contact, etc.)
• Customer service policy/capabilities (what assistance can be provided for troubleshooting)
• Complete cost information for devices and data
• Devices capable of a one ping per minute rate
• Whether devices can detect when the vessel is berthed/in port
• Precision (fixed) of 5 decimal places and accuracy capability (100 m max)
  ○ Does device evaluate quality of positional fix prior to pinging or does it just ping every minute?
  ○ Is the device capable of reporting horizontal accuracy and/or any other ping metadata?
• Which cellular providers and bands the device utilizes
• Whether vendor can PUSH the vessel ID (Coast Guard number or state registration number) as part of the location data to the ACCSP trip locations API, as well as meet all additional provisions of this interface: (https://accsp-software.github.io/spec-unified-api-prod/#tag/eTrips/paths/~1trip_locations/post)
• Power supply specifications
• Installation instructions/requirements
• Ruggedness specifications
• Ability to maintain the confidentiality of personally identifying information and other protected data in accordance with federal law

3.2 Administrative Processes

This section describes the required administrative processes that must be implemented at the state and federal level to facilitate the collection and management of data under the electronic vessel tracking requirements for federal permit-holders in the lobster and Jonah crab pot/trap fisheries. Additionally, it describes the recommended roles and responsibilities of the states, federal agencies, and ACCSP in the processes involved in data reporting, validation, and management.

3.2.1 State-Level Administrative Processes

Certification of Device Installation

States shall certify the installation and activation of approved vessel tracking devices for permit holders whose principal port listed on the federal fishery permit is within their state. Principal port is contained in the GARFO permit data which will be made accessible to states. An affidavit with uniform language will be distributed by the states to permit holders (see Appendix B for affidavit language). This affidavit certifies an approved tracking device is installed on each vessel and is activated for transmitting spatial data. These requirements apply to all fishing trips regardless of the landing state, trip type, location fished, or target species. Each affidavit must be signed and returned to states prior to departing on the first fishing trip after the program implementation date. For initial implementation of this project, states will collaborate to define a deadline by which permit holders will need to have a certified tracker installed. A state may require additional information to certify installation such as photographs, notarized affidavits, or inspections, but this is not required.

GARFO will provide states with American lobster-trap gear area permit ownership information, enabling states to contact permit holders and complete the process of certification of installation. In the event a vessel tracker is transferred between permit holders, states will instruct harvesters to contact tracking device vendors to complete the transfer of a vessel tracker.

Permit Holder Support

State agencies will communicate with permit holders to assist them in properly complying with the vessel tracking requirements. States are expected to respond to general inquiries from permit holders that land in their state, troubleshoot where feasible, and transfer inquires to the appropriate body for answers as needed (e.g., device issues to the vendors, electronic reporting app issues to the appropriate electronic vessel trip report provider help desk, etc.). Staff should be available to confirm with harvesters that vessel tracks are being received by ACCSP. States are not required to aid with the installation or troubleshooting of vessel trackers. If there is an issue with hardware or software related to tracker, states may assist the permit holder in contacting device vendors. It is the permit holder's responsibility to work with the vendor when they discover or are notified by the state of an issue.

Data validation and compliance monitoring will be the responsibility of the states. States will contact permit holders to resolve data issues for trips landing in their state. Specifically, state agencies will be tasked with resolving mismatches between vessel trip reports and associated vessel tracking information, or when tracking data are missing or incomplete. Additionally, states must validate that the data collected from a tracker meets the specifications defined by ASMFC.

The administrative processes for permit holder support will be further developed and refined prior to implementation of the management program. A final data validation system and protocol will be developed by ACCSP and state and federal partners. This will include developing and testing data QA/QC for each jurisdiction prior to implementation of the program.

3.2.2 Federal-Level Administrative Processes

The following processes will be the responsibility of GARFO to facilitate the implementation of the tracking program:

Federal Permit Data

To successfully administer a vessel tracking program, states will need access to up-to-date Federal American lobster permit data. GARFO will provide states with American lobster-trap gear area permit ownership information. The following information will be available:

- Vessel permit number
- Vessel name
- Hull ID (state registration or US Coast Guard Documentation Number)
- Permit endorsement
- Permit issuance date
- Permit expiration date
- Permit-holder name
- Permit-holder contact information
- Principal port and state

Electronic Vessel Trip Report Data Processing

Upon completion of rulemaking to implement federal harvester electronic vessel trip report (eVTR) requirements for federal lobster permits, GARFO will incorporate federal lobster eVTR data into its quality assurance program. Electronic reporting applications ensure the submission of complete and valid vessel trip reports, but do not ensure quality. Upon submission, eVTRs will be further validated to ensure a high level of data quality. Errors identified through the quality assurance program will be resolved through GARFO outreach efforts resulting in corrections and resubmissions of eVTR. Federal eVTR data will be available to ACCSP in near real-time, which can be used by ACCSP and state partners in identifying fishing activity in the vessel tracking data.

3.2.3 Data Reporting, Validation and Management Processes

This section outlines the expected processes for data reporting, validation and management for electronic vessel tracking. It also identifies the recommended roles and responsibilities of state and federal agencies and partner organizations in administrating these data processes.

Data Dissemination and Confidentiality

ACCSP will maintain the confidentiality of trip and location data that have been submitted to ACCSP via API in addition to the trip data already maintained under its authority. Data will be accessible to the appropriate state or federal entities with confidential data access. A map interface will be available in the SAFIS Management System (SMS) for authorized federal and state administrators to query and visualize trip locations.

Data Flow

ACCSP will support data flows for integrated and non-integrated trip report and location data from American lobster and Jonah crab federal permit holders required to collect location data via an approved tracking device. Figure 1 shows the flow of trip data and location data (vessel tracks) from the vessel to the ACCSP SAFIS database. Each step is broken down and described below.

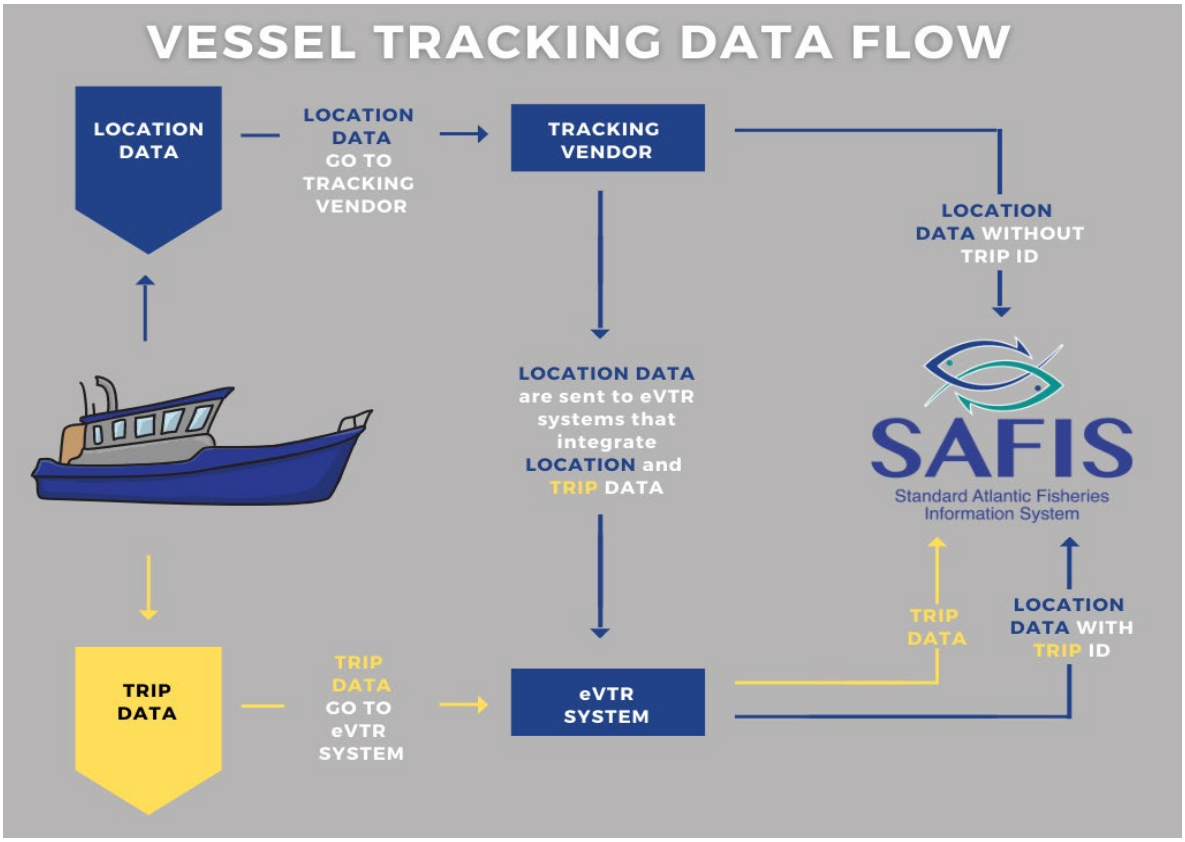

Figure 1. Vessel Tracking Data Flow

Trip Data

EVTR data must be submitted using a NOAA Fisheries GARFO approved eVTR application. All eVTR submissions will be available in SAFIS at or near real-time.

Location Data (Vessel Tracks)

Tracking vendors must submit location data to the SAFIS database via the ACCSP trip locations API. Vendors will need to obtain the necessary API key, and devices must be capable of providing data in accordance with the API specifications.

SAFIS API

All parties, including ACCSP partners and vendors, submitting trip data and/or location data to the SAFIS Unified API (https://accsp-software.github.io/spec-unified-api-prod/) will need to obtain the necessary API keys and must be able to provide data in accordance with the API specifications.

Data Management

ACCSP maintains the database structures and processing required to store trip and location data. ACCSP will develop a process to match non-integrated trip and location data after they have been submitted to ACCSP. The trip ID will be assigned to the appropriate trip location data. The system will require the following by each partner:

- NOAA Fisheries is responsible for providing vessel registration (hull ID) and vessel permit number data contained in eVTR data to ACCSP. All eVTR data submitted to GARFO will be sent to ACCSP via API at or near real-time.
- State management agencies would be responsible for working with tracking vendors to ensure data are being sent to ACCSP in accordance with the requirements outlined for certification. Two levels of coordination will be in place.
    - In Level 1, the device approval work group will coordinate with the vendor to address overall device issues that have arisen post certification.
    - In Level 2, individual state management agencies will work with the permit holder(s) to resolve issues specific to a single or small number of isolated devices.
    - Details on the roles and responsibilities for specific issues will be outlined in the standard operating procedures document.
- Vendors will submit accurate vessel registration information and other required data elements to the ACCSP Trip Location API.

ACCSP will run trip matching programs at specified intervals. Criteria for matching reported trip data with location data will be developed with federal and state input. Data auditing reports, as specified in the standard operating procedures document, will be made available to the appropriate state and/or federal entities with confidential data access.

Data Quality

GARFO and the state management agencies will be responsible for data reporting compliance; GARFO is responsible for validation of eVTR data, and state management agencies are responsible for validation of trip location data. The matching of trip and location data by ACCSP will be subject to the accuracy of the trip report data.

4.0 Compliance

If the existing FMP is revised by approval of this draft addendum, the American Lobster Management Board will designate dates by which states will be required to implement the provisions included in the addendum. A final implementation schedule will be identified based on the management options chosen, and implementation of federal reporting requirements as recommended in Addendum XXVI.

5.0 Recommendations for Actions in Federal Waters

The management of American lobster in the EEZ is the responsibility of the Secretary of Commerce through the National Marine Fisheries Service. The Atlantic States Marine Fisheries Commission recommends that the federal government promulgate all necessary regulations in Section 3.0 to implement complementary measures to those approved in this addendum.

6.0 References

Atlantic States Marine Fisheries Commission (ASMFC). 1997. Amendment 3 to the Interstate Fishery Management Plan for American Lobster.

ASMFC. 2015. American Lobster Benchmark Stock Assessment and Peer Review Report.

ASMFC. 2020. American Lobster Benchmark Stock Assessment and Peer Review Report.

Appendix A. Ping Rate Analysis

Lobster Vessel Tracking Ping Rate Analysis

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Introduction

Conversations regarding requirements for cellular-based vessel tracking in the federal lobster fishery have repeatedly recommended a one-minute ping interval as being necessary to distinguish fishing from non-fishing activity. This analysis utilizes data collected from tracking devices deployed on federal lobster vessels off the coast of Maine to illustrate the ability to discern and quantify effort at varying ping rates.

Goals of High-Resolution Tracking Data

The primary goal considered in this analysis is to utilize high-resolution tracking data to extract the locations and size of trawls. These locations can be used to quantify vertical line concentrations spatiotemporally. Although a harvester report may be available with additional information on gear configuration, such as the number of sets or total number of traps, tracking data of sufficient resolution should be capable of predicting gear configuration and gear quantities. Collecting this information from tracking data would likely provided higher accuracy and could ease reporting burdens on harvesters.

Five trap trawls are currently the smallest permissible trawl that can be fished in federal waters of the Gulf of Maine. While there may be future utility in detecting smaller gear events, this analysis will consider the necessary minimum detectable gear size to be a five trap trawl.

Extracting Effort from Tracking Data

The following overview of current methods for automated extraction of trawl locations from lobster fishing tracking data is provided before analyzing the impact of ping rate on the ability to discern effort.

Machine learning models generally fall into the categories of supervised and unsupervised. Supervised models are built using groundtruthed training data containing classified events to train a model to predict the probability of those events in unclassifed data. For example, lobster tracking data where each ping was labeled as hauling/non-hauling based on a hauler sensor or observer data could be used to build a supervised model. Unfortunately, at present there are few instances of high-resolution classified lobster fishing tracking data. As such, the following details current efforts to produce an unsupervised effort detection model based on several prevalent unsupervised machine learning techniques.

Estimation of fishing effort based on velocity alone has been shown to overestimate fishing effort in some fisheries (Arasteh et al. 2020). Different vessels transit at varying speeds, and even for a single vessel within a single trip, transiting speeds may vary based on sea conditions. However, within the lobster fishery the density distribution of velocity as calculated between sequential points in a trip typically exhibits a bimodal or multimodal pattern corresponding with vessel activity (steaming, hauling, and setting.) Gaussian Mixture Modeling (GMM) has been utilized successfully to classify vessel activity in Scottish small-scale fisheries, including those fishing 10-50 trap trawls for European lobster. Establishing velocity thresholds using a GMM calculated on a per trip basis was shown to be effective at correctly labeling vessel activity, and also had rapid processing times compared with other models (Mendo, Smout, Photopoulou, et al. 2019). This study also found that multivariate models incorporating turning angle between pings resulted in minimal increases in activity detection accuracy, likely because hauling of trawls often presented as straight trajectories similar to transiting. Since tracking data for lobster vessels demonstrates similar patterns, velocity is therefore used as the primary variable to classify vessel activity within this analysis.

The following example uses tracking data obtained from a Succorfish SC2 pinging at a one-minute interval. The vessel was fishing ten trap trawls and was carrying a DMR observer who recorded a GPS point at the beginning of each trawl.

All processing in this analysis was completed in R 4.0.1 on a 64-bit Windows machine (R Core Team 2020), relying heavily on the tidyverse (Wickham 2019), sf (Pebesma 2018) and Rcpp (Eddelbuettel 2013) packages.

Preprocessing

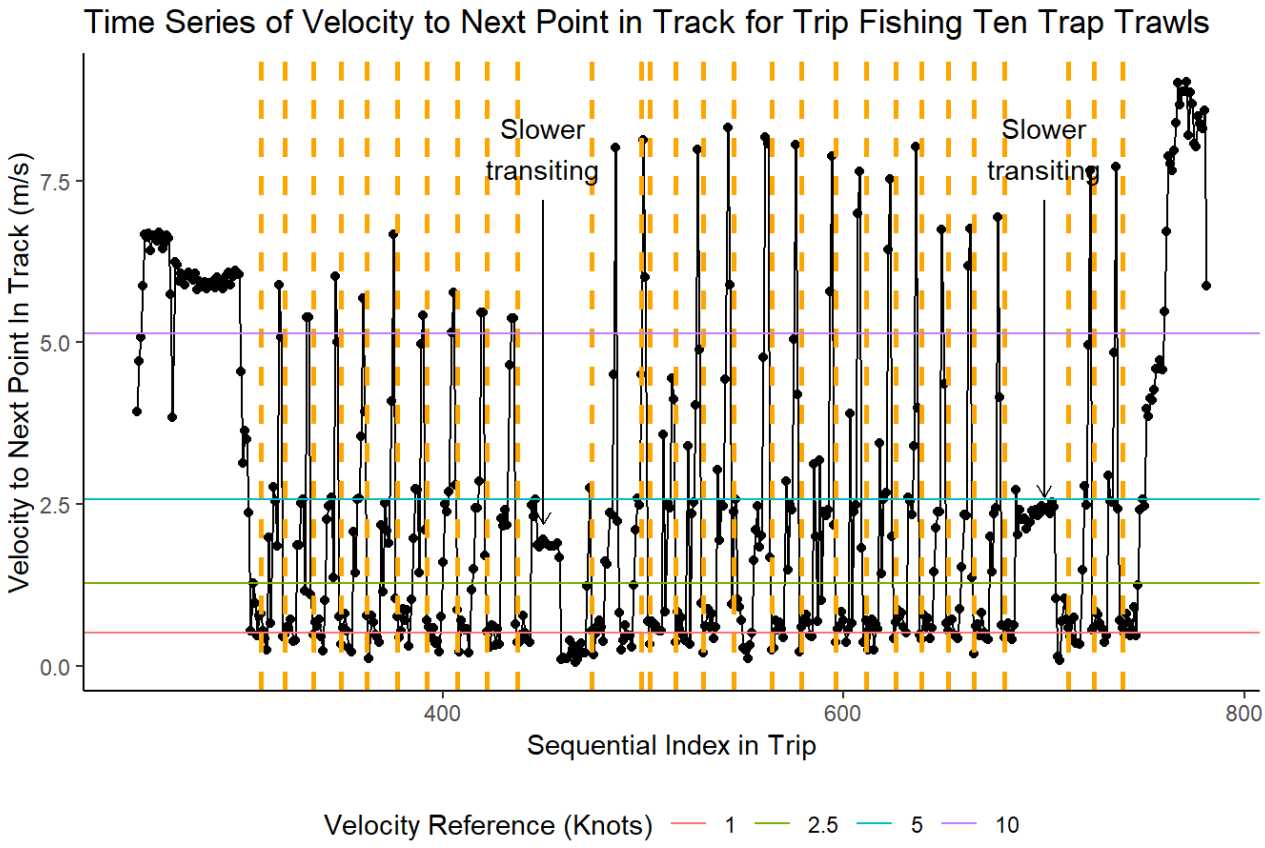
Raw tracking data was pre-processed to split the data into daily tracks and calculate metadata for each ping. This metadata most notably included the spatial and temporal difference between successive pings. Once tracking data had been divided into tracks, polyline features for each track were also created in pre-processing. Pre-processing was handled by a R/C++ package created by the author, and details of this processing are beyond the scope of this analysis.

Removal of Pings-in-Port

The removal of pings in port is necessary prior to analysis of vessel tracking data. This was accomplished programmatically by taking the first and last point in the trip and calculating the distance between them. If the distance was below a reasonable threshold for indicating the vessel returned to port, points within a given radius of the centroid of the first and last point in the track were removed. Spatial filtering of pings within known port areas can also be utilized to remove pings in port from tracking data (Mendo, Smout, Photopoulou, et al. 2019).

After removal of pings in port, the minimum and maximum datetimes of the remaining points were used to calculate the trip start and end times, as well as the total trip temporal and spatial length.

The following plot shows the velocity for each point in the example trip, along with the timestamps of known trawl locations from the onboard observer.

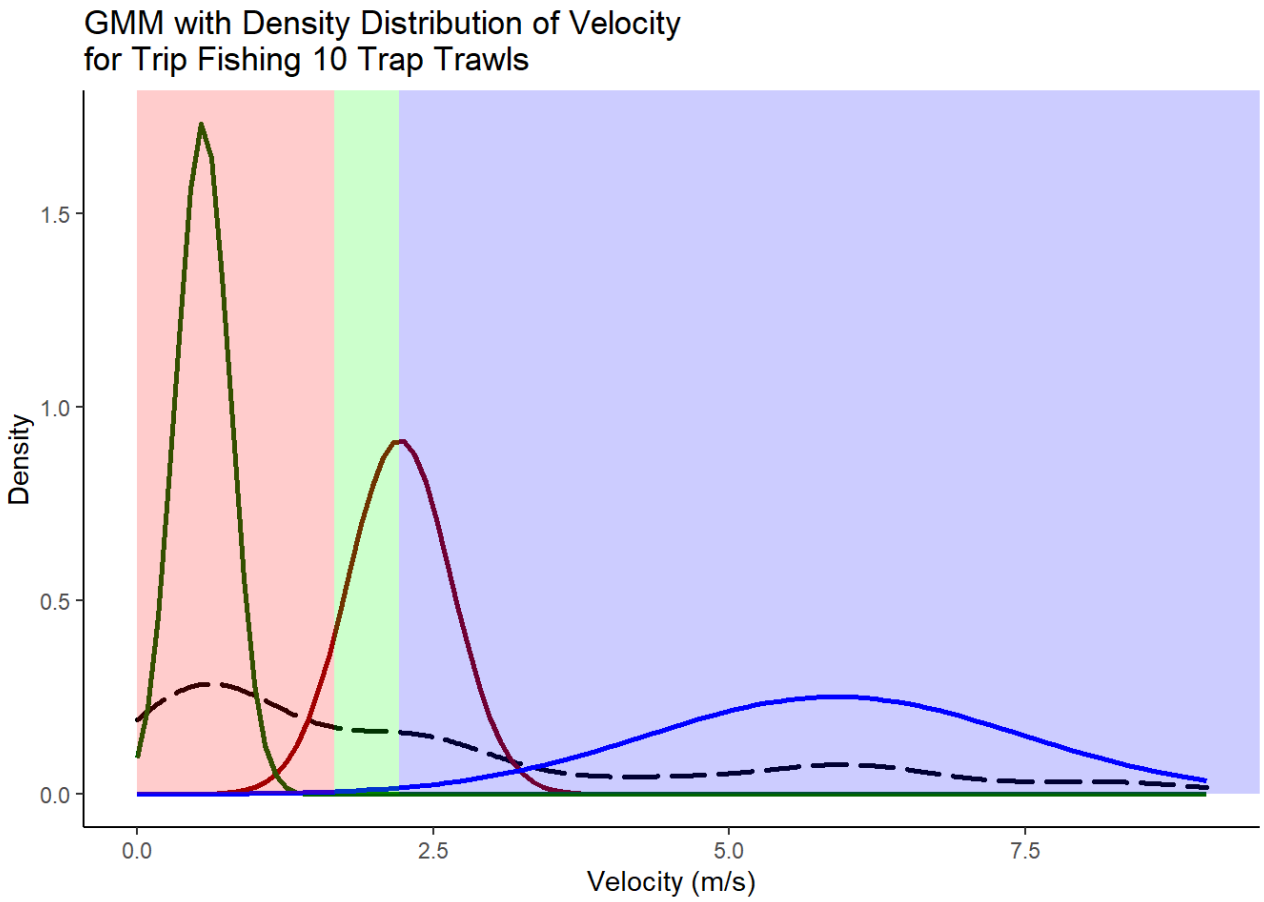


Orange vertical lines are haul begin times collected by an onboard observer.

Gaussian Mixture Model

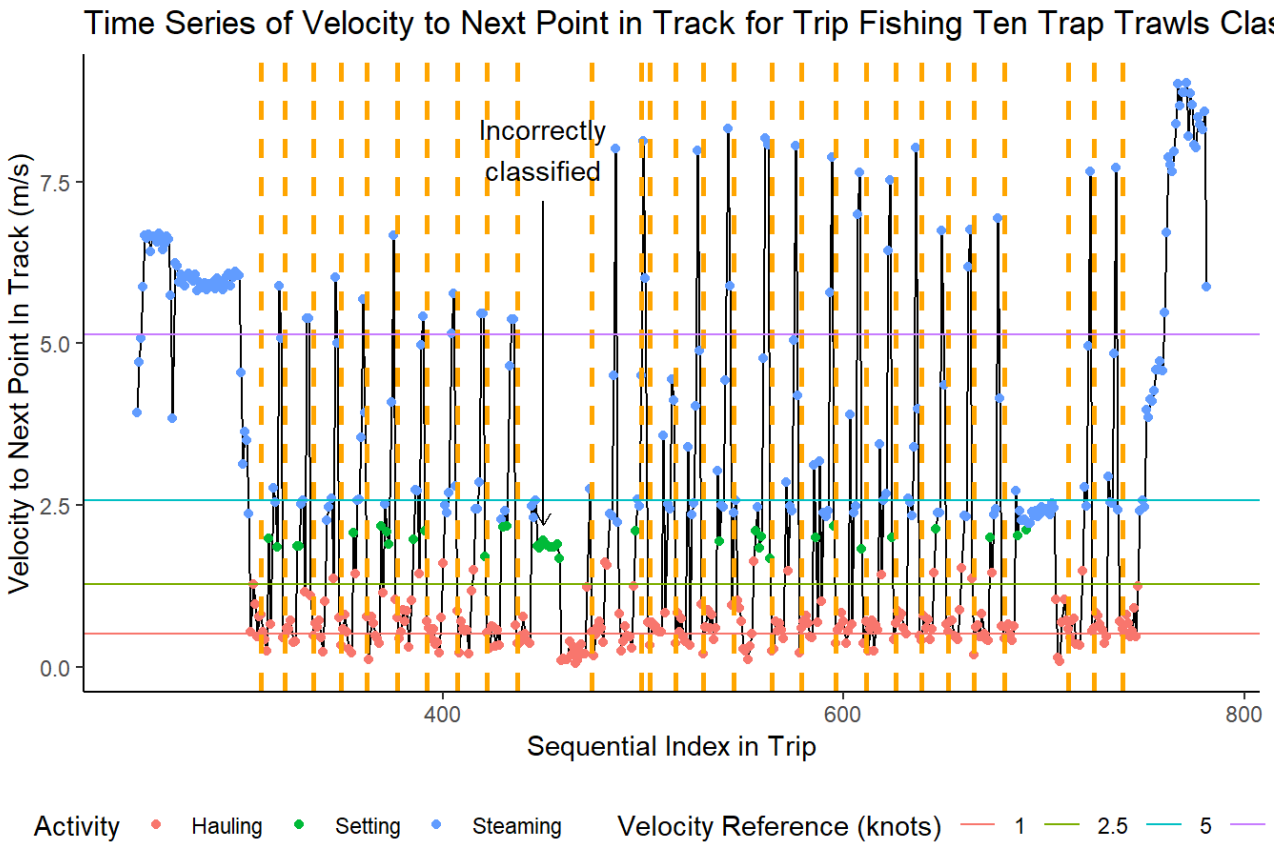
The vector of velocities between sequential points in the trip was used to fit a Gaussian Mixture Model using the mixtools (Young et al. 2020) R package as per the method described in Mendo, Smout, Photopoulou, et al. (2019). An expectation-maximization (EM) algorithm was utilized to fit the model to three components corresponding to steaming, hauling, and setting activity. The upper threshold for hauling velocity was defined as 2 SD from the mean of the first distribution (Ibid). Since setting of gear can be difficult to detect and may overlap speeds used when hauling and steaming, a more conservative estimate from the upper hauling limit to the mean of the second distribution was utilized to classify gear setting. Steaming was classified using velocities above the second mean.

The velocity density distribution (dashed) and the normal distributions resulting from the EM fitted GMM for the example trip are shown below. Velocities corresponding to hauling (red), setting (green) and steaming (blue) are also highlighted.



Initial Activity Classification

Points in the trip track were than classified using the velocity thresholds established by the GMM.



Orange vertical lines are haul begin times collected by an onboard observer.

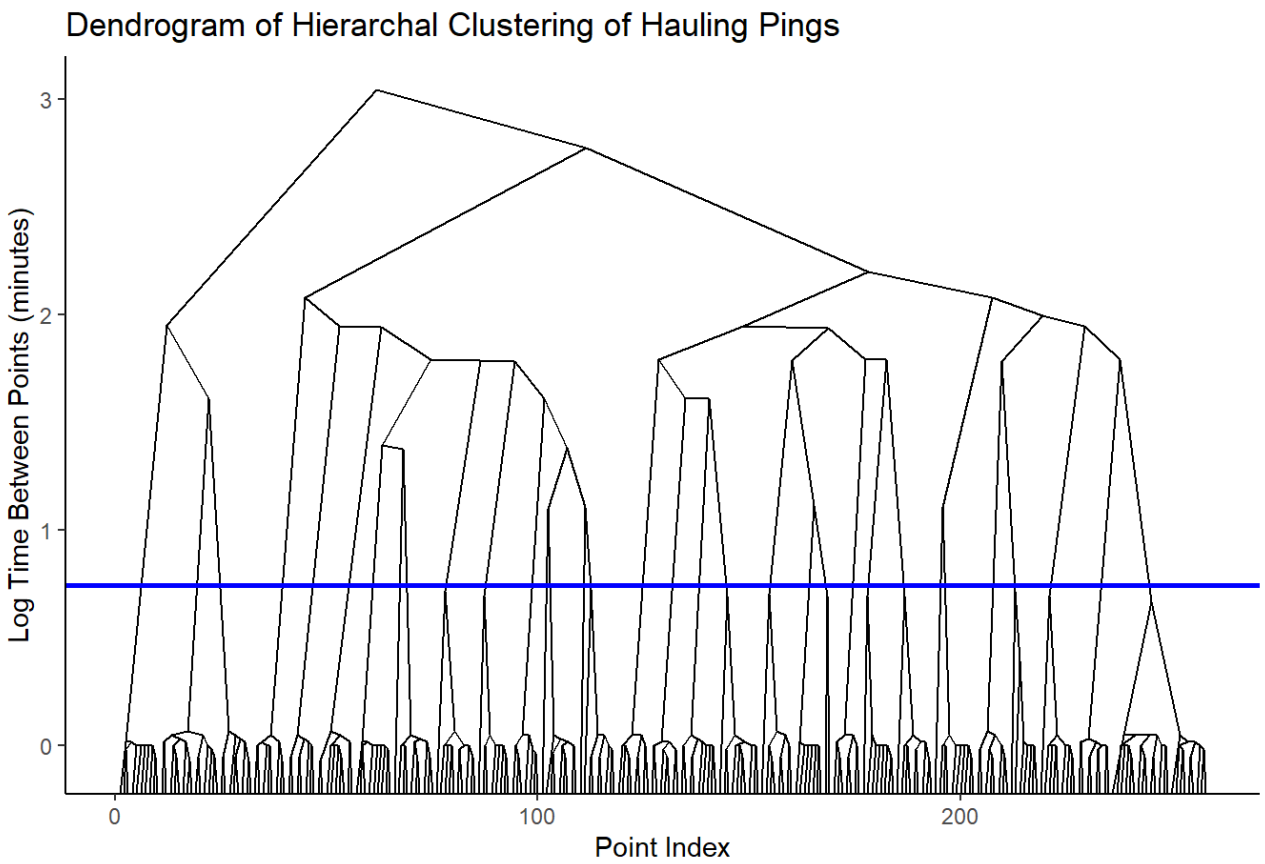
Delineation of Hauls and Sets

Since above plot shows only individual pings classified as activities, clustering of classified points was necessary to identify discreet hauling and setting events. This also allowed for the removal of misclassified pings based on filtering criteria, for example a single ping classified as setting between two clusters of hauling pings.

Trip data was filtered into pings representing hauling and setting, and a matrix of the time difference in minutes between all pings in each data set was calculated. Hierarchical clustering was performed on the resulting matrices, using the single linkage method. The single linkage method clusters points based on the minimum distance between clusters; in this case, “distance” was the minimum time difference in minutes between distinct hauls and sets.

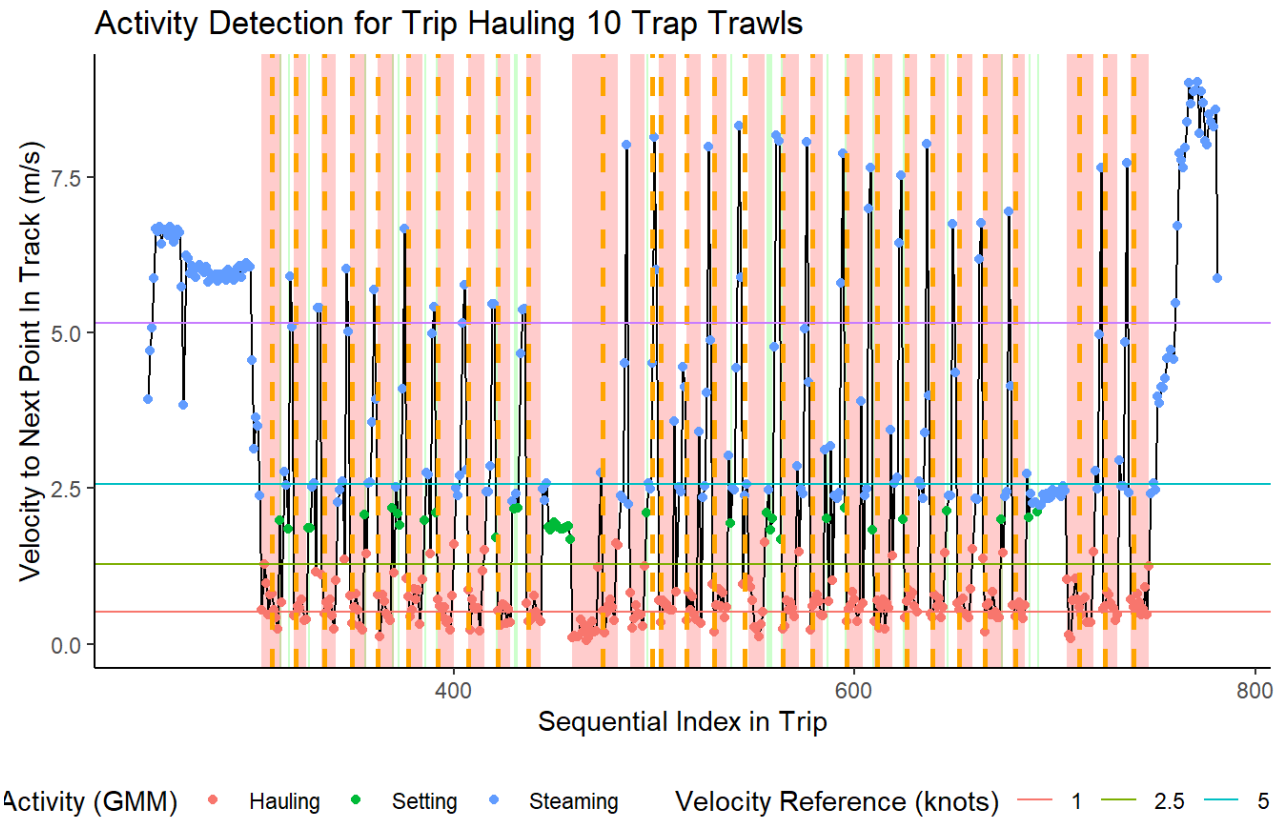
For this analysis, a common sense value of 2.1 minutes between hauls was utilized, such that at minimum one ping would occur between successive haul events. The same value was utilized for clustering sets. Deriving the value to cut the hauling clustering tree using the above GMM method applied to the sequential distance between hauling pings could be another approach, but was not explored in this analysis.

The dendrogram of hierarchal clustering of pings classified as hauling in the example trip is shown below, produced using the R package ggdendro (de Vries and Ripley 2020).



Constrictions on the minimum haul temporal length and maximum set temporal length were also applied to all trips, such that hauls less than 2 minutes and sets greater than 6 minutes were excluded. In production, these values could be adjusted based on the spatial area fished or on gear configuration details from a harvester report.

In the following plot, the duration of the parsed hauling and setting events from the example trip are highlighted. Observer-derived points were within the extracted haul spans, with the exception of one point that appeared to have been taken after the haul was complete. Detection of setting was much more difficult.

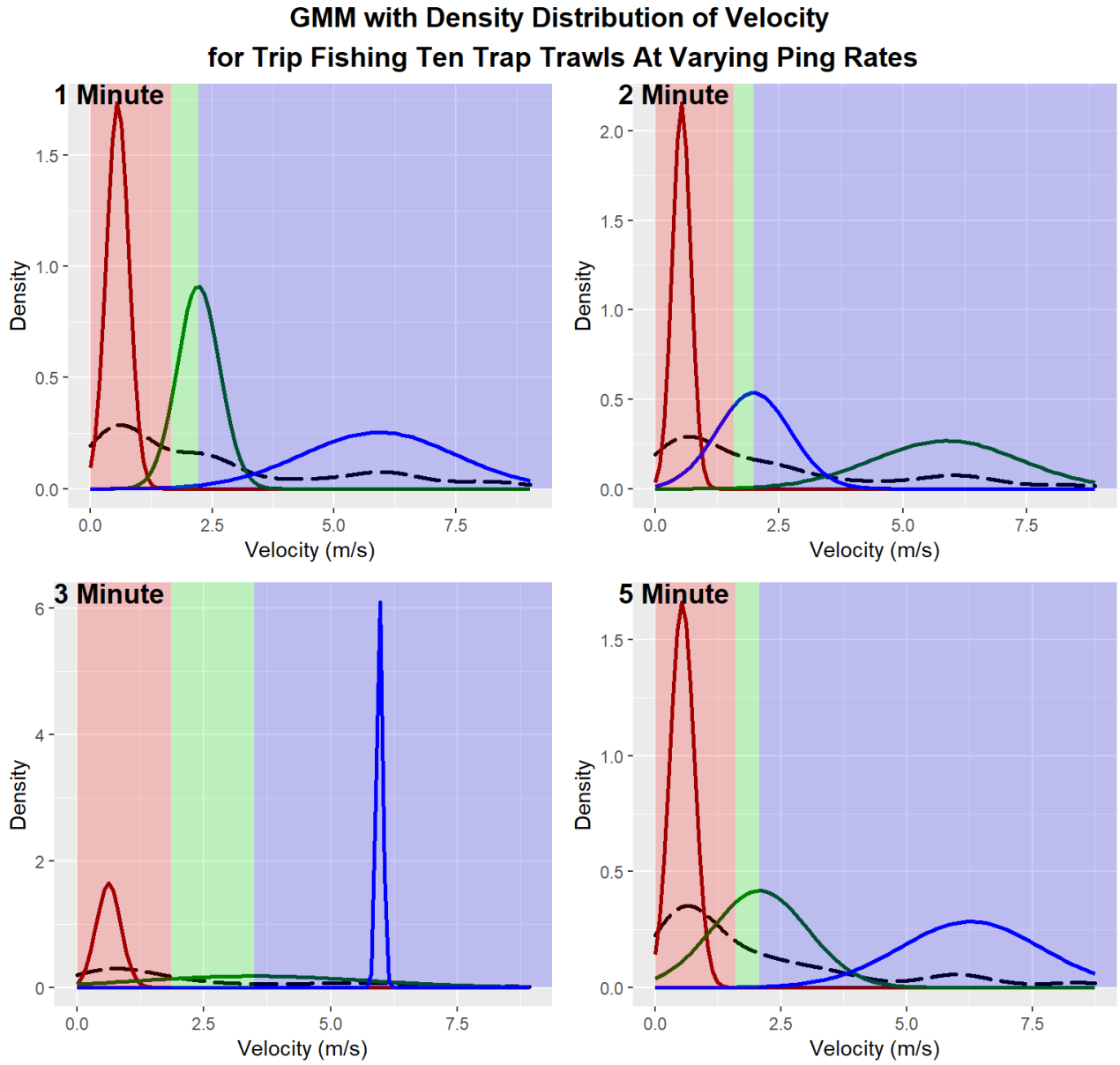


Light red bars are filtered haul durations. Light green bars are filtered set durations.
Orange dashed vertical lines are haul begin times collected by an onboard observer.

Ping Rate Analysis

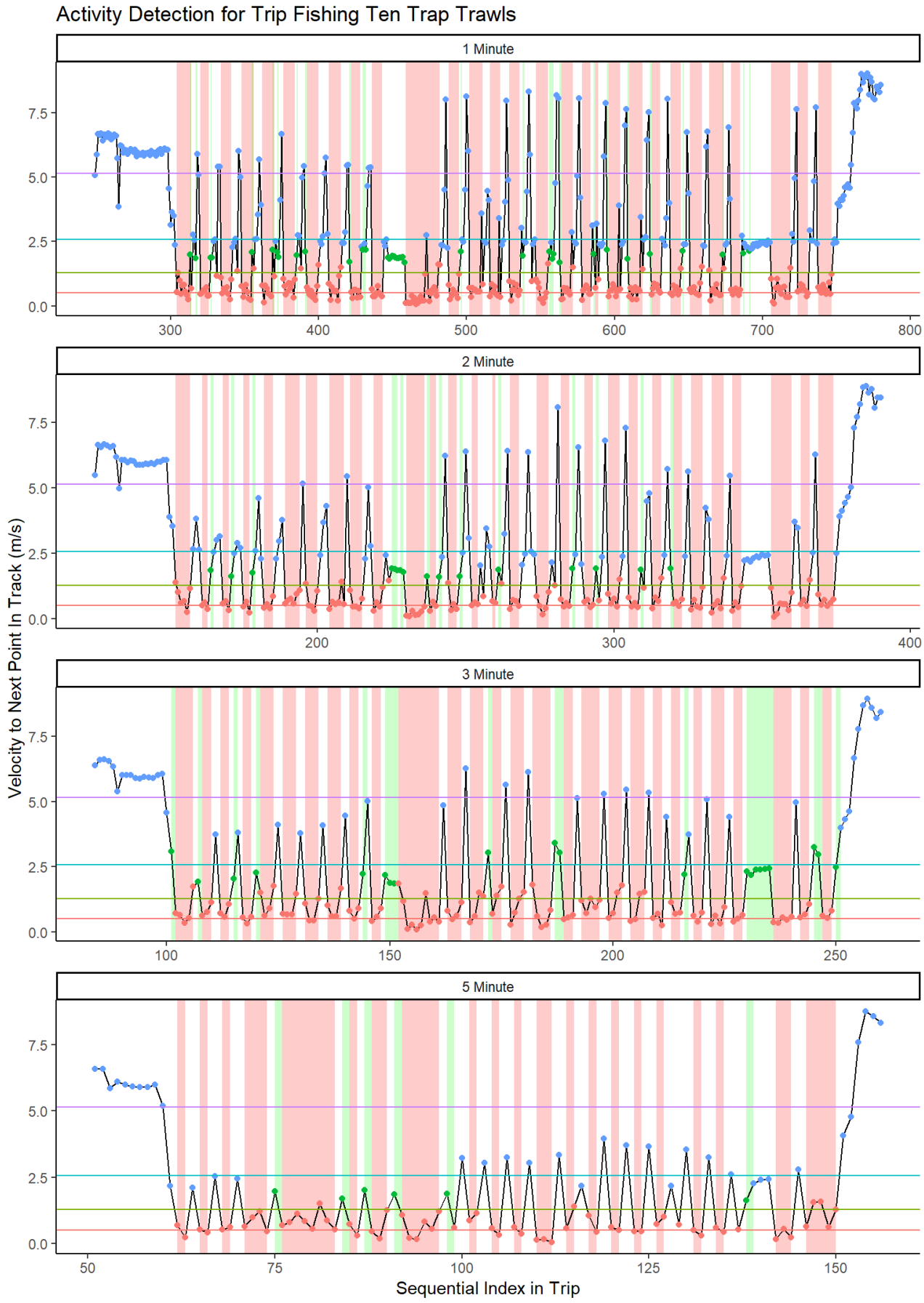
In the following scenarios, tracking data from trips fishing a variety of gear configurations were subsampled to lower ping rates. The above method of detecting effort was utilized, with notable differences in the ability to detect vessel activity occurring as ping rate decreased.

The first example used the same trip fishing ten trap trawls as above. GMM results were similar at different ping rates, with the exception of three minutes.



Dashed lines are velocity density distribution. Colored lines GMM normal distributions.
Velocities classified as hauling, setting, and steaming are colored red, green, and blue respectively.

Trawls were detected at the one, two and three minute ping rates.



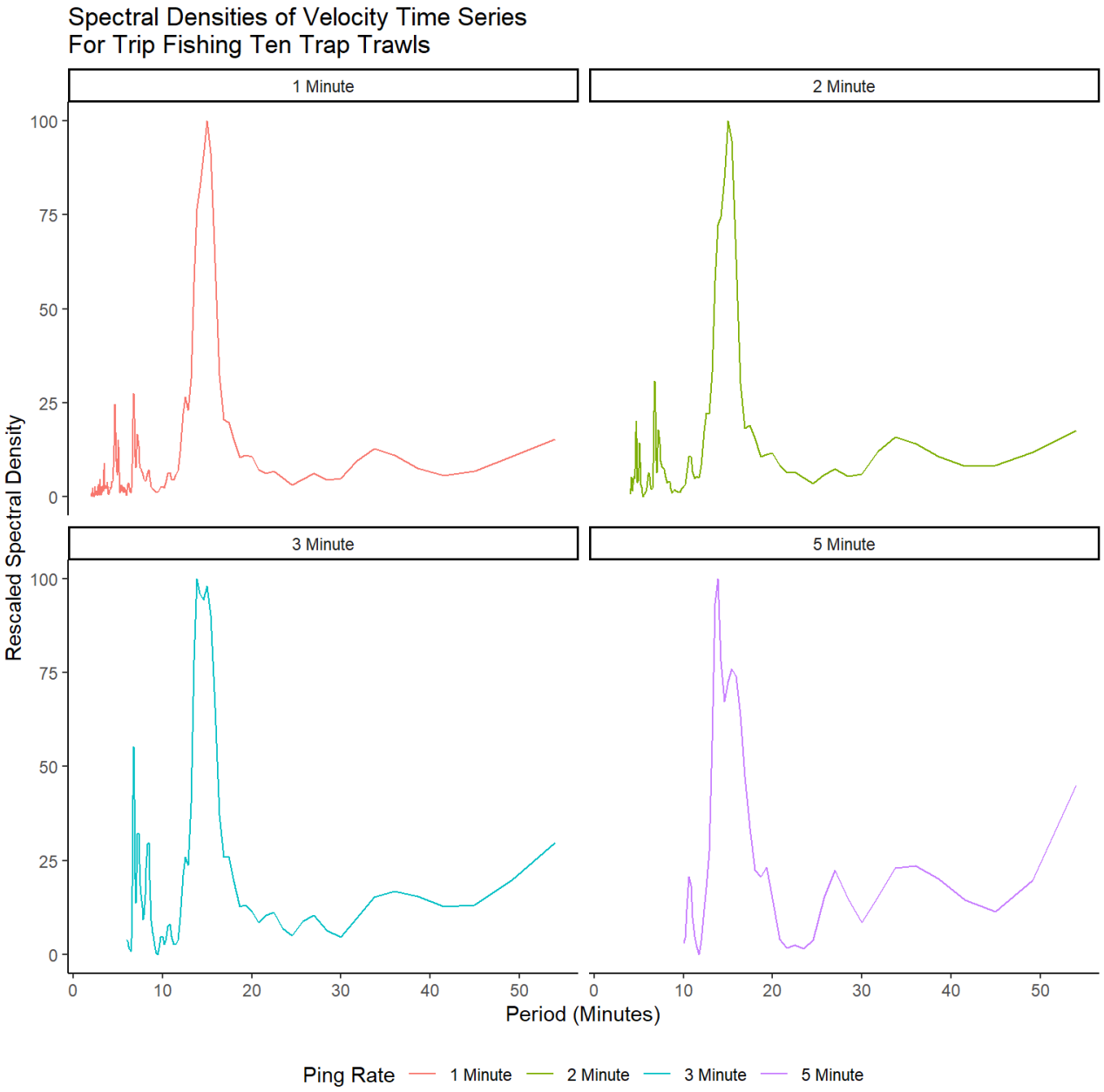
Light red bars are filtered haul durations. Light green bars are filtered set durations.

Trawl Location vs Trawl Size

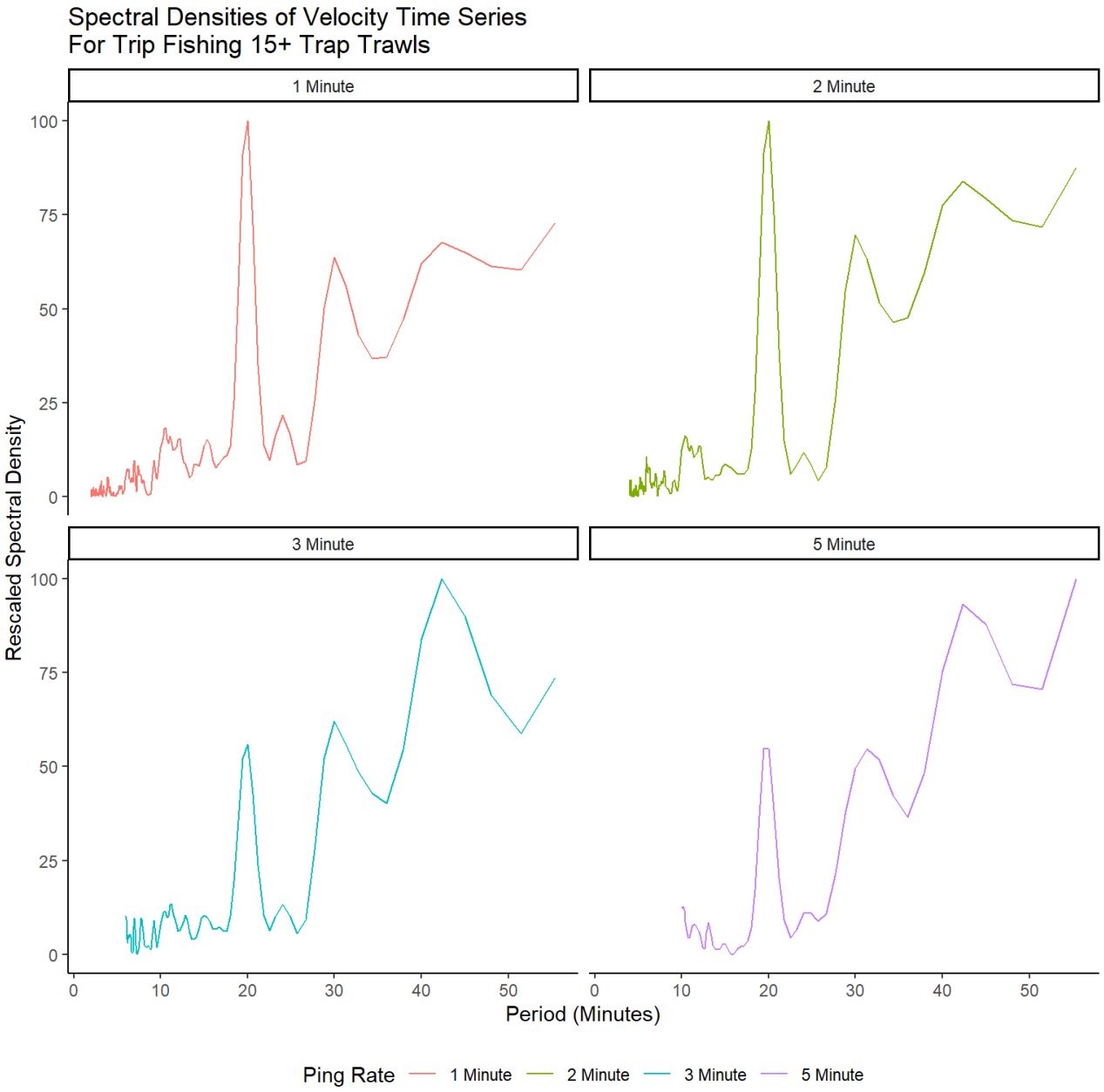
In the plot above, clusters of pings around known trawl locations remain visible at ping rates slower than one minute. The one-minute and two-minute time series demonstrate flat-bottomed valleys corresponding to trawls. As the ping rate decreases, fewer pings occur during the haul and the pattern becomes more saw-toothed; there is still an indication of fishing activity, but the temporal resolution of the haul length decreases as the amount of time each ping represents increases. If the ten trap trawls fished in this example trip took 15 minutes to haul, at a one minute ping rate the temporal length of the haul could be estimated within 12% of the actual haul length (15 minutes +/- 1 minute). At a 5 minute ping rate, if the detected haul consisted of only one ping, this could represent anywhere from 5-15 minutes of fishing effort. Faster ping rates are therefore essential to estimating trawl size; measured temporal/spatial lengths of trawls combined with the minimum and maximum trawl sizes permitted in the area fished could provide probabilities of trawl size.

The Rhythm of Work

The plot above also shows a consistent rhythm of hauling familiar to anyone who has worked in fixed gear fisheries. In many cases hauling is so consistent that a frequency corresponding to the haul time can be detected in tracking data. This may also be another possible future method for detecting trawl configurations. In the plot below, the Fast Fourier Transform has been taken of the velocity time series at different frequencies. The resulting spectral densities demonstrate the occurrence of repeating frequencies within the time series (likely the length of the trawl including setting). Note how the 1 minute and 2 minute time series have sharply defined peaks at 15 minutes, while the peaks widen to either side of 15 minutes as the ping rate decreases.



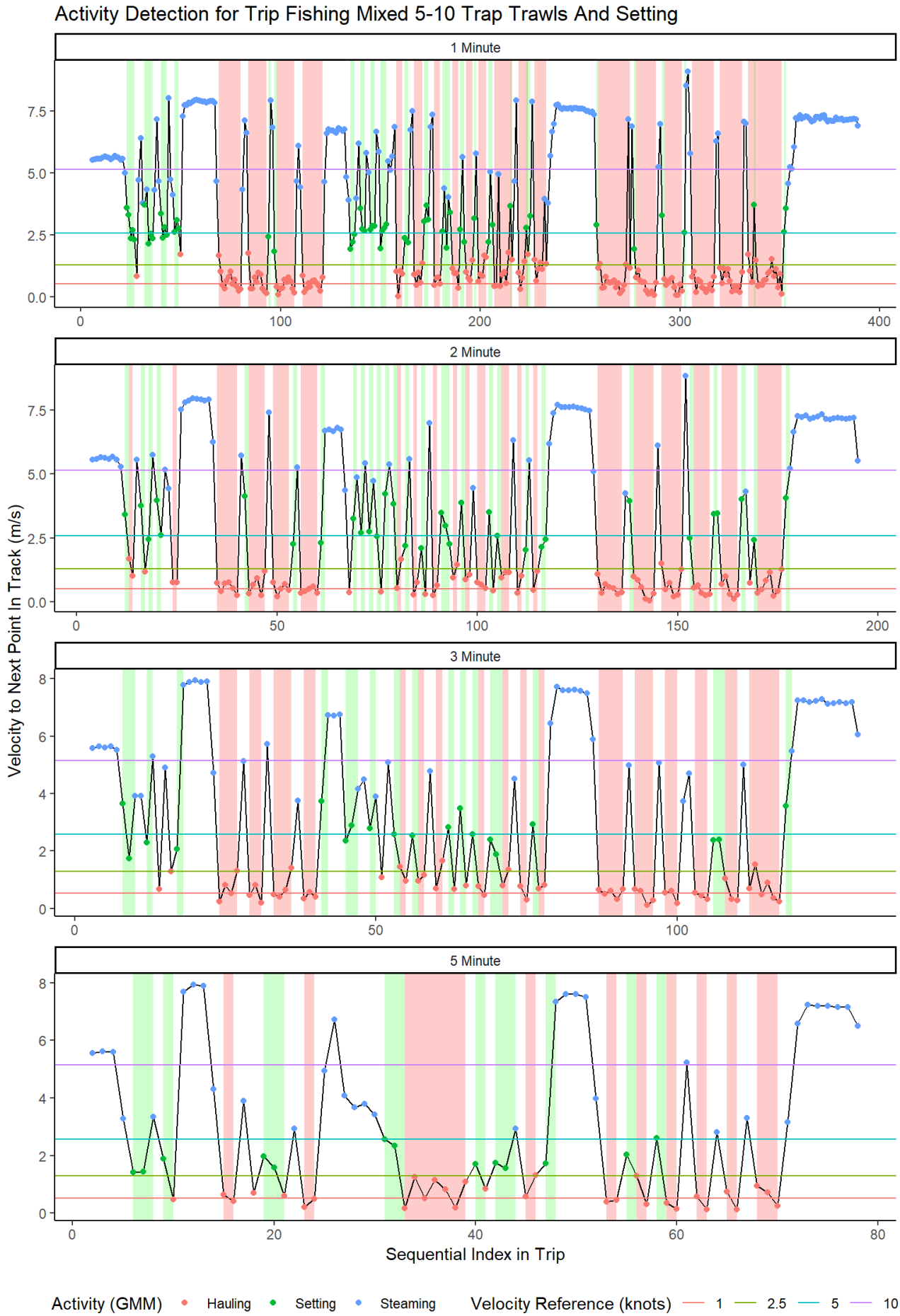
Another spectral analysis from a vessel fishing 15+ trap trawls is shown below, indicating a haul/set period of about 20 minutes. Other frequencies become more prevalent than the 20 minute signal at slower ping rates. It is likely that cleaner spectral densities would be acquired by applying the Fast Fourier Transform to vectors of pings classified as hauling/non-hauling versus raw velocity. However, the utility of this method in analyzing vessel tracking data has yet to be determined, and is presented more as a curiosity and comment on the consistency of hauling in the lobster fishery.



Case Studies from Other Trips

Mix of 5-10 Trap Trawls

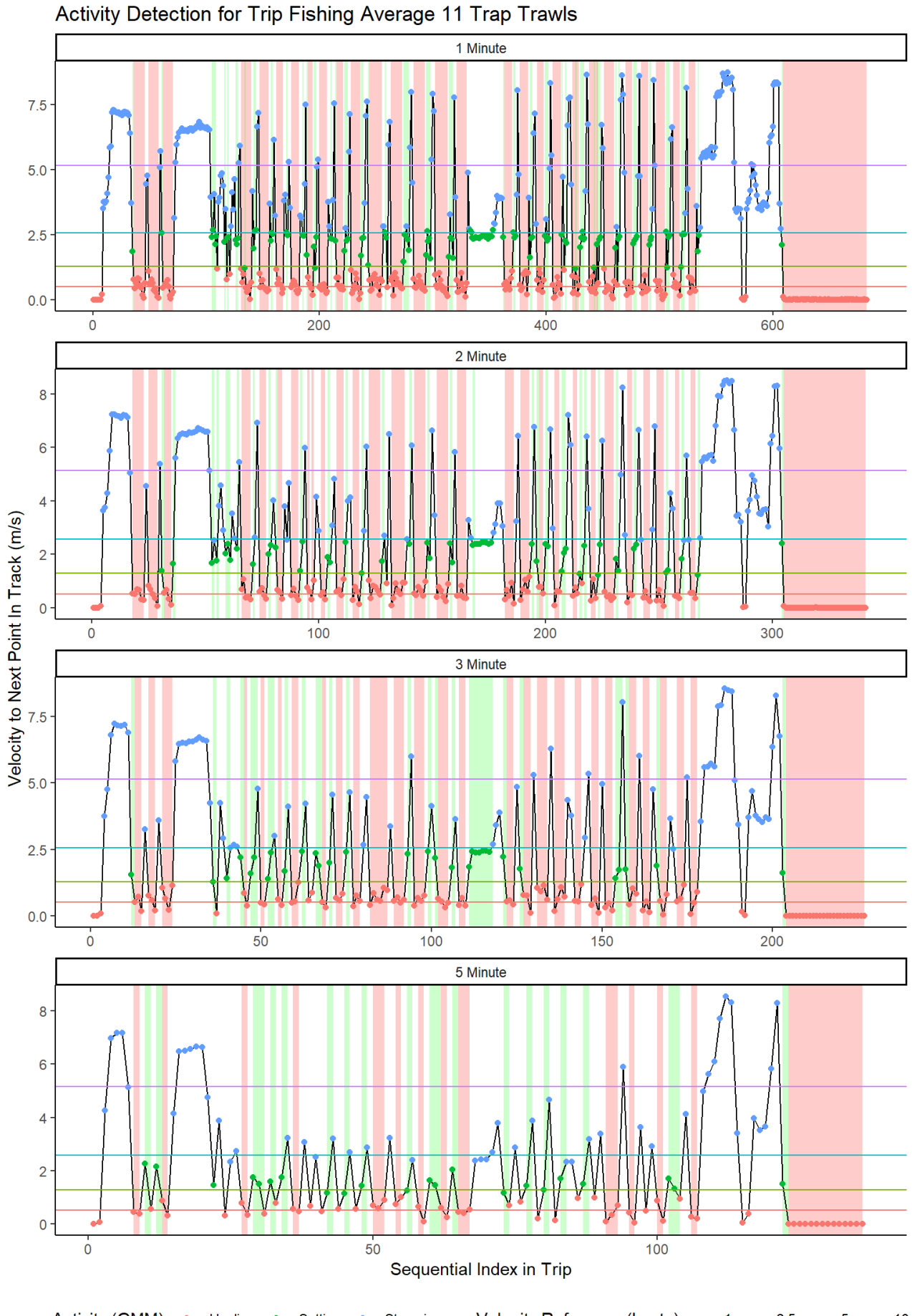
The following trip consisted of a mix of trawl sizes between 5 and 10 traps per trawls. Larger trawls were fished at the beginning and end of the trip, with shorter trawls in the middle. Several gear events that appeared in the spatial data to be sets (no hauling) were correctly classified. Detection of all trawls decreased at slower ping rates; most notably, the smaller trawls became harder to detect even at a 2 minute rate, with some trawls only being represented by a single ping.


Activity Detection for Trip Fishing Mixed 5-10 Trap Trawls And Setting
1 Minute
2 Minute
3 Minute
5 Minute
Velocity to Next Point In Track (m/s)
Sequential Index in Trip
Activity (GMM)
Hauling
Setting
Steaming
Velocity Reference (knots)
1
2.5
5
10
Light red bars are filtered haul durations. Light green bars are filtered set durations.

Spectral analysis of this trip showed no strong signals corresponding to haul periods for the different gear configurations; it is possible that applying the Fast Fourier Transform using windowed approach (iterating over the trip subsetting 1-hour window for example) may allow for detecting of haul period signals for mixed gear configurations.

Mix of 10 and 15 Trap Trawls (Average 11)

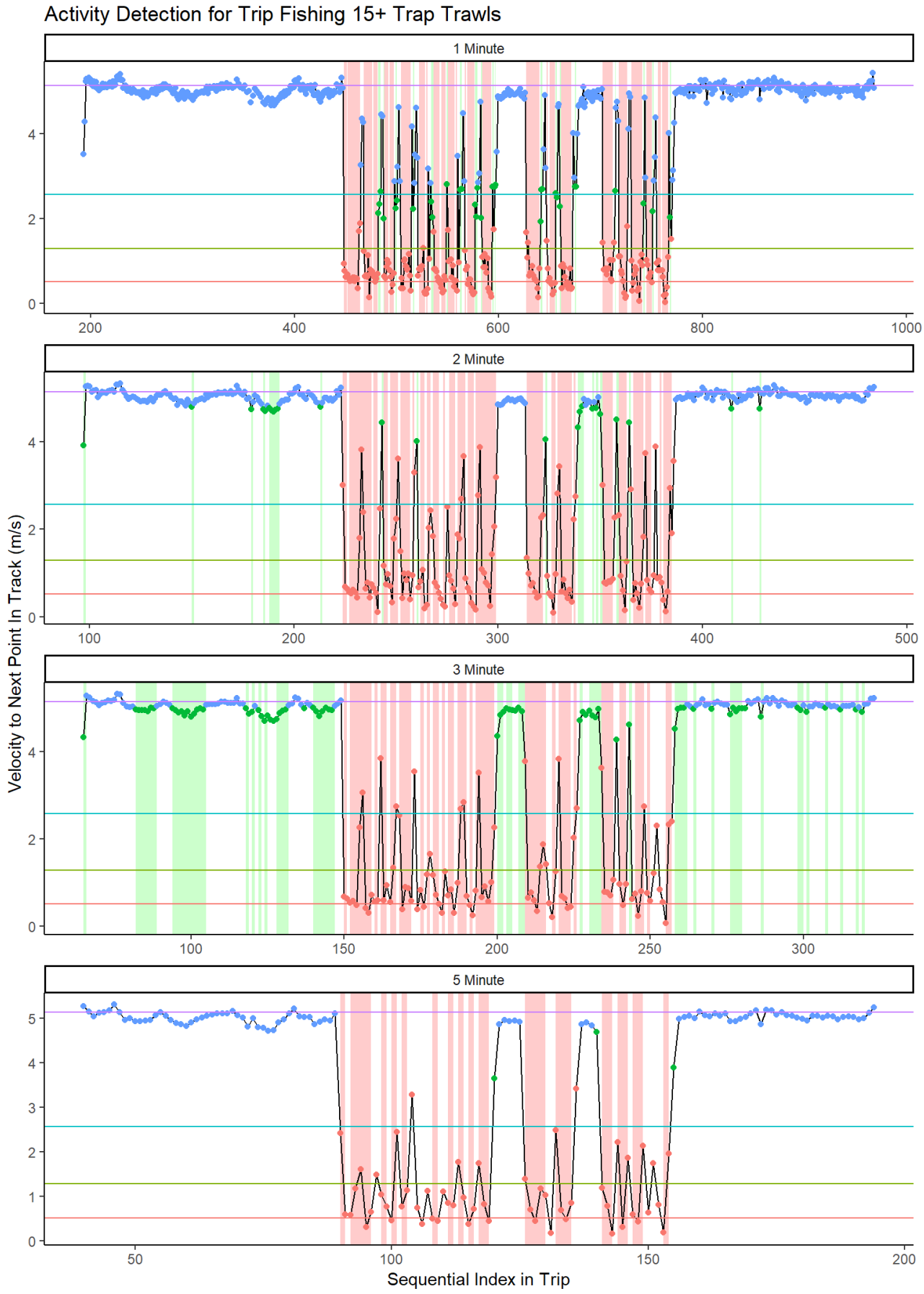
This trip had 25 reported hauls, which were detectable at the one and two minute ping rates. A cluster of points toward the end of the trip that was likely setting activity was misclassified as steaming. A notable issue occurred removing pings in port where the vessel moved to a new location at the end of the day.



Light red bars are filtered haul durations. Light green bars are filtered set durations.

15+ Trap Trawls

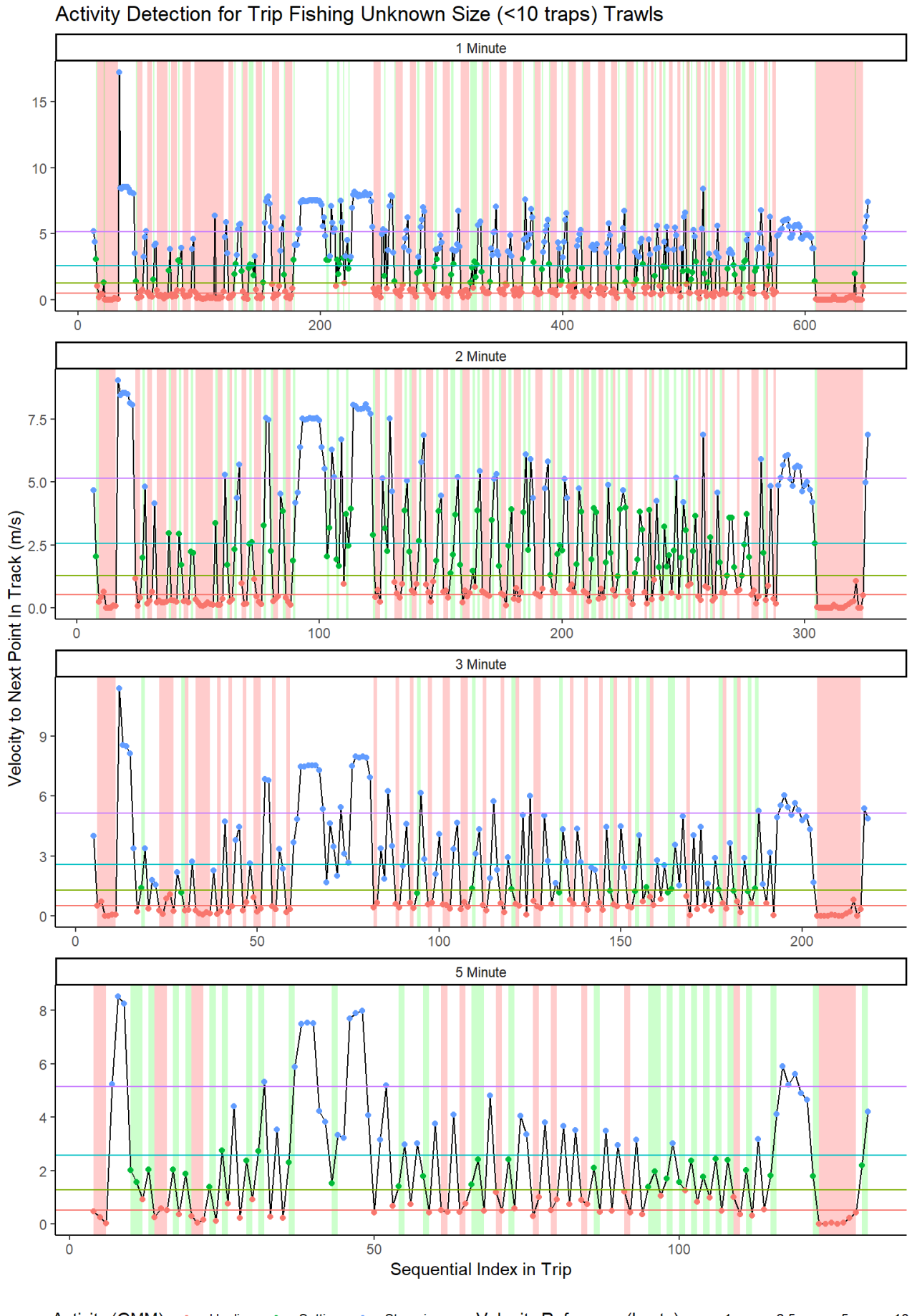
Trawls within this example trip were mostly detected; however, a notable issue is visible where several of the hauls were split into two hauls even though adjacent pings were correctly classified as hauling. This was likely due to dropped pings; the device lost GNSS reception causing the time difference between adjacent pings to be 2 or 3 minutes. When the resulting hauling classified data was clustered, the clustering threshold fell below this time difference causing two separate hauls to emerge. It will likely be necessary to interpolate dropped pings to avoid this issue. This example also highlights the necessity of a consistent ping rate during fishing.



Light red bars are filtered haul durations. Light green bars are filtered set durations.

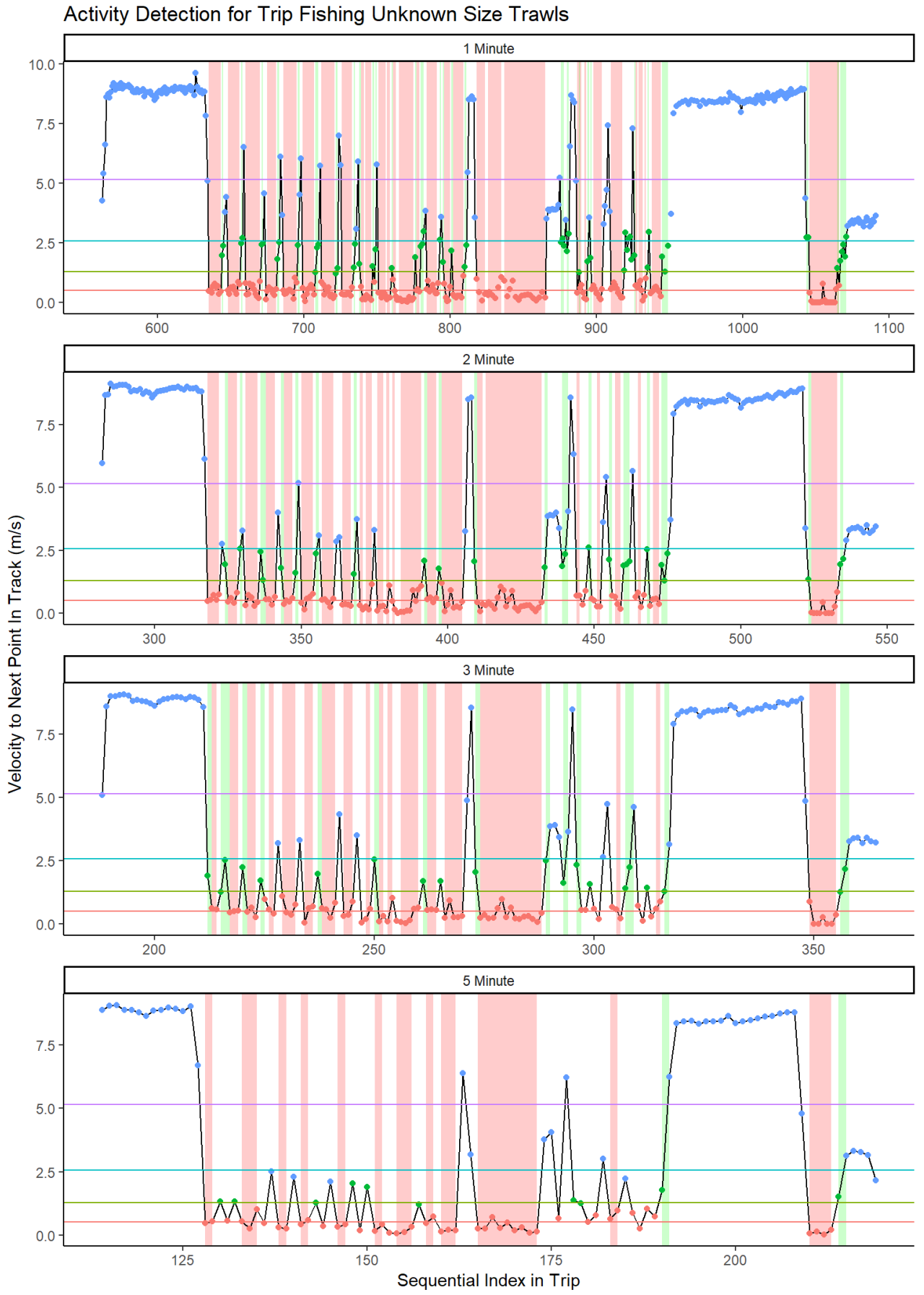
Unknown Trawls - Vessel 1

Unknown size trawls (likely < 10 traps) from a vessel not used in previous examples. Some pings in port were not removed, indicating the need for larger buffer size from the beginning of the track.


Activity Detection for Trip Fishing Unknown Size (<10 traps) Trawls
1 Minute
2 Minute
3 Minute
5 Minute
Velocity to Next Point In Track (m/s)
Sequential Index in Trip
Activity (GMM)
Hauling
Setting
Steaming
Velocity Reference (knots)
1
2.5
5
10
Light red bars are filtered haul durations. Light green bars are filtered set durations.

Unknown Trawls - Vessel 2

Unknown size trawls from a vessel not used in previous examples.



Light red bars are filtered haul durations. Light green bars are filtered set durations.

Data Size Considerations

Ping Data Structure

The following is the minimal datatype sizes necessary to represent a ping attributes in a relational database. Actual implementations would likely utilize structure requiring more space; these numbers are intended to represent the absolute minimum space to store ping data in an uncompressed state.

Attribute	Optimal Data Type	Attribute Size Bytes	Comments
Device ID	16-bit unsigned integer	2	Able to represent 65,536 unique devices/vessels. Actual device ID per manufacturer likely much longer than this, but can use lookup table in DB.
Time	64-bit unsigned integer	8	Most devices transmit ping time as the UNIX epoch or an ISO datetime string, store as UNIX epoch.
Latitude	single-precision float	4	Precise to 7 decimal places.
Longitude	single-precision float	4	Precise to 7 decimal places.
Horizontal Accuracy	16-bit unsigned integer	2	Store accuracy to one decimal * 10 - ie, accuracy of 2.45 meters stored as 25

Database Size

A single vessel pinging at a one minute rate 24 hours a day would produce 525,960 pings annually. Thus, the full federal lobster fleet of ~1600 vessels would produce 841,536,000 pings. Given the above minimum size of 20 bytes per ping, this would result in 16.83GB of data annually. Minimizing pinging while in port and/or removing pings in port prior to long-term storage would further reduce this figure by likely more than 50%.

Ping rates slower than one minute would decrease data storage sizes accordingly. However, given the relatively small amount of data that would be produced by the entire fleet at even a one minute rate, reductions in ping rate would likely realize minimal cost savings if any relative to the loss of data resolution.

Conclusions

- For trawls <10 traps in length, a one minute ping rate is necessary to distinguish the location of individual trawls. The size of the trawl relative to other small trawl sizes may not be discernible even at a one minute rate due to differences in hauling speed between vessels, locations and conditions. These results are consistent with findings in the Scottish European lobster creel fishery that a one minute ping rate was necessary to delimit hauling of 10-50 trap creels (Mendo, Smout, Russo, et al. 2019).

- A one minute ping rate can allow for the detection of setting of gear when no hauling occurred.
- The location of trawls of 10 traps and greater can be distinguished at up to a 3 minute ping rate. However, as with smaller trawls, the precision with with the size of the trawl can be estimated will decrease at slower ping rates.
- The lack of groundtruthed classified ping data makes calculating metrics on the performance of effort detection algorithms difficult. With validated training data, such as haul times from an onboard observer or a hauler sensor connected to the tracker, it may be possible to build better models and calculate metrics of their accuracies.

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Appendix B. Standard Affidavit Language for Tracking Device Certification

NOTICE TO FEDERAL AMERICAN LOBSTER COMMERCIAL TRAP GEAR AREA PERMIT HOLDERS

Under the authority of the Atlantic Coastal Fisheries Cooperative Management Act, Addendum XXIX to Amendment 3 to the Interstate Fishery Management Plan for American Lobster and Addendum IV to the Fishery Management Plan for Jonah crab requires all vessels with a federal American Lobster Trap Gear Area permit to have an approved vessel tracker installed as of *Month DD, YYYY*. Tracking devices must be installed prior to the permit holder's first fishing trip. This vessel tracker must remain powered and transmitting when the vessel is in the water regardless of landing state, trip type, location fished, or target species. All devices must follow the specifications outlined in Section 3.1 of Addendum XXIX. A list of approved devices along with vendor contact information is attached to this document.

The principal port on your Federal Fishery Permit lies within the [*Principal Port State*], thus the [*Principal Port State Agency*] will be tasked with certifying the installation of your vessel tracking device. In the event you believe your tracker is not functioning correctly and must be serviced, please contact [*Principal Port State Agency*], and inform them of your situation.

Please complete, sign and return this form once an approved device has been installed on your vessel.

Federal Fishery Permit Number:

Documentation or Vessel Registration Number:

Vessel Name:

Vessel Tracking Device Vendor:

Vessel Tracking Device Identifier:

I certify that the above vessel tracking device is installed and properly functioning to the best of my knowledge.

Permit Holder Signature:

Permit Holder Printed Name:

Date:

Atlantic States Marine Fisheries Commission

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

TO: **American Lobster Management Board**

FROM: **Caitlin Starks, Senior FMP Coordinator**

DATE: **February 7, 2022**

SUBJECT: **Public Comment on Draft Addendum XXIX on Electronic Vessel Tracking**

The following pages represent a draft summary of all public comments received by ASMFC on American Lobster Draft Addendum XXIX/ Jonah Crab Draft Addendum IV as of 5:00 PM (EST) on January 31, 2022 (closing deadline).

Comment totals for the Draft Addenda are provided in the table below, followed by summaries of the state public hearings, and written comments sent by organizations and individuals. A total of 32 written comments were received. These included 11 letters from organizations, one letter from NOAA Fisheries, and the remainder from individual industry stakeholders and concerned citizens. Six virtual public hearings were held; some were state specific while others were regionally focused. The total public attendance across the six hearings was 98, though some individuals attended multiple public hearings. Thirty-five individuals provided comment at public hearings.

The following tables are provided to give the Board an overview of the support for each of the management options contained in Draft Addendum XXIX. Comment totals by state for comments provided during public hearings were tallied based on the home state identified by the attendee, rather than which hearing was attended. It should also be noted that some individuals provided comments at a public hearing and also submitted written comments, and these are counted separately in the tables below. Additional comments that did not indicate support for a particular option are included in the public hearing summaries and written comments. Prevailing themes from the comments, including rationales for support or opposition and general considerations, are highlighted below.

Table 1. Written Comments Submitted to ASMFC

	Option A. Status Quo	Option B. Electronic Vessel Tracking Requirements
Written Comments		
Individual	13	2
Organization	3	7
Total	**16**	**9**

Table 2. Comments Provided at Public Hearings

	Option A. Status Quo	Option B. Electronic Vessel Tracking Requirements
Public Hearings		
ME	8	1
NH	7	
MA	4	1
RI	6	
CT		
NY		
NJ	1	
DE	1	
MD		
VA		
Unknown		1
Total	**27**	**3**

Prevailing themes from the public comments on Addendum XXIX are highlighted below.

Rationales for Option A. Status Quo

- Concerns that the data collected through electronic vessel tracking will be in ways that would harm the fishery rather than help
    - For example, VMS in other fisheries has been used predominantly to close areas to fishing and for enforcement of those closures
    - Fear that data will be used by energy developers to reduce ocean access for fishermen
    - Doubt that data to show important fishing grounds will make a difference to developers
- Marine spatial planning efforts seek to define static use areas in the ocean when commercial fisheries are dynamic; electronic vessel tracking is not capable of identifying fishing grounds that were historically important or those which may emerge as important fishing areas in the future.
- Fishermen should not be financially responsible for the collection of these data; ASMFC, states, and/or NOAA should provide funding to purchase, operate, and maintain the equipment required to implement this program
    - The costs of devices and data plans will be too high for small business operators
- Concerns that device malfunctions would force fishermen to lose days at sea
- Opposition to being required to have multiple types of devices for different fisheries on a single vessel; VMS should be permitted for this program.
- Lack of information about the devices, vendors, actual costs, and device reliability and accessibility, power
- Concerns about data privacy
    - Unclear how much access would be granted to outside parties through legal action, e.g., freedom of information act requests
    - Do not want secret fishing locations to be known by others
- ASMFC should fully implement Addendum XXVI and its recommendations before requiring vessel tracking as this would satisfy the objectives of Draft Addendum XXIX
- Existing data from trip reports and logbooks should be fully utilized instead of requiring trackers
- Vessel tracking is an invasion of privacy; not all vessel activity is for fishing.
- Tracking does not provide information on lobster catch rates in a particular area

Rationales for Option B. Electronic Tracking Requirements

- Support for the collection of higher quality data for better science
    - Current spatial information of effort in the lobster fishery is too coarse
- Higher resolution spatial data obtained by tracking devices could significantly improve the stock assessments for lobster and Jonah crabs
- Electronic vessel tracking data would significantly improve the effort models used to assess the location of vertical lines in the lobster fishery and their associated risk to right whales
- Need to address longstanding concerns about offshore enforcement
- The data collected would be of enormous value to understanding economic trade-offs for management measures such as area closures and marine spatial planning decisions
- Tracking data can help inform managers about how climate change is impacting the stock and the fishery
- Vessel tracking for federally permitted lobster vessels is important for enforcing the management measures required by the Atlantic Large Whale Take Reduction Plan
- Program should be implemented as soon as possible to provide data and put it to use
- Tracking on lobster vessels should have been required long ago

General Considerations

- Financial support for fishermen could reduce resistance to this proposal
- The Commission should consider allowing the use of existing AIS technology to meet the requirements of this program
- ASMFC should follow this action with an addendum that would improve harvest reporting in state waters
- Area 5 Waiver permits should be exempt from tracking requirements because it is primarily a black sea bass fishery with only very few lobsters landed as bycatch

Lobster Addendum XXIX & Jonah crab Addendum IV Public Hearings

Connecticut and New York Webinar Hearing

January 12, 2022

5 Public Participants

Public: William Bartlett, Barry Saxe, Ed Smith, Tor Vincent, Xiang Zhang

Commissioners: David Borden (RI), Colleen Bouffard (CT), Maureen Davidson (NY), Emerson Hasbrouck (NY), Allison Murphy (NOAA)

Staff: Caitlin Starks (ASMFC), Julie Simpson (ASMFC), Craig Weedon (MD), John Maniscalco (NY), Kim McKown (NY), Melissa Albino Hegeman (NY), Renee St. Amand (CT)

Hearing Overview

The attendees did not provide any comments.

Lobster Addendum XXIX & Jonah crab Addendum IV Public Hearings
New Jersey, Delaware, Maryland, and Virginia Webinar Hearing
January 13, 2022
5 Public Participants

Public: Sonny Gwin (MD), Denise Wagner (NJ), Joseph Wagner Jr (NJ), Wes Townsend (DE), Betsy Fitzgerald (ME)

Commissioners: Patrick Geer (VA), John Clark (DE), David Borden (RI)

Staff: Caitlin Starks (ASMFC), Toni Kerns (ASMFC), Julie Simpson (ASMFC), Emilie Franke (ASMFC), Chad Power (NJ), Craig Weedon (MD), David Stormer (DE), Somers Smott (VA), Scott Newlin (DE), Jeff Brust (NJ), Peter Clarke (NJ)

Hearing Overview

- Two attendees supported Option A, status quo
  - Concerns with tracking included costs to the fishermen being too high for smaller harvesters, difficulty of using the technology and potential for devices to malfunction, and the potential for data to cause conflicts between fishermen.
- One attendee expressed mixed thoughts on addendum. He generally supports tracking for the purposes it is intended for but is concerned with the pace of the addendum, costs, and potential technological challenges.
- A question was raised about whether the requirements would apply to someone with a federal lobster permit who was fishing conch traps but no lobster traps during the fishing year.
- Virginia state staff spoke on behalf of some fishermen who could not attend, saying they are concerned that this will cost too much for how little they make on lobster

Public Comment Summary

Denise Wagner (NJ)

- Supports Option A, status quo, at least for Area 5
  - A5 does not have a large lobster fishery
  - Area 5 waiver should be exempt. They are not required to buy lobster tags, lobsters are bycatch, low numbers of lobster are caught.
- There should be reimbursement for the tracking devices. The federal government already set precedent for reimbursement with scallop industry (a multimillion dollar industry), and the lobster industry is much smaller than the scallop industry. Industry needs time to come up with the funding.
- Concerned that tracking data will reveal personal fishing locations and cause conflicts between vessels fighting over those areas
- Concerned about tracking devices not working – what do you do if your tracking device just stops working?
- Concerned about the difficulty of reporting systems and using tracking devices
- The cost of Installation should also be factored in

Sonny Gwin (MD)

- Concerned about the fast pace of this addendum and trying to implement too quickly

- Concerned that devices may have technical issues/may not work
- Generally supports tracking to understand fishing footprint to use in conversations about interactions with aquaculture, etc.
- Concerned about the cost

Wes Townsend (DE)

- Supports Option A, status quo
- Tracking would be a burden on the fishermen, Delaware fisherman catch very little compared to Maine
- Not much gear from Delaware Bay south, so the tracking data would not provide much information

Lobster Addendum XXIX & Jonah crab Addendum IV Public Hearings

Maine Webinar Hearing
January 18, 2022
27 Public Participants

Public: Nick Faulkingham (ME), Lange Solberg, Frank Mcdonald, Jodie Jordan, John Swoboda, Fred Penney (MA), Nathaniel Burola (ME), Sue Thompson, Gabe Shadis, Amalia Harrington (ME), Walter WilleyIV, Heidi Henninger, Amy Knowlton, Barry Saxe, Russell Wray, Jacob Thompson (ME), Joseph Fessenden, Marianne LaCroix (ME), Zack Klyver, Purcie Bennett-Nickerson, Ethan Genter, Virginia Olsen, Patrice McCarron (ME), Clinton Collamore, Barbara Skapa (ME), Brian Thibeault, Andy Santapaola (MA)

Commissioners: Pat Keliher (ME), David Borden (RI)

Staff: Caitlin Starks (ASMFC), Toni Kerns (ASMFC), Julie Simpson (ASMFC), Megan Ware (ME), William DeVoe (ME), Lorraine Morris (ME), Kathleen Reardon (ME), Allison Murphy (NOAA), Anna Webb (MA), Story Reed (MA), Derek Perry (MA), Steven Wilcox (MA)

Hearing Overview

- 9 attendees provided public comments; 8 supported Option A, status quo and 1 supported Option B.
- Supporters of Option A had several main concerns with tracking:
    - Tracking data would more likely be used against the fishery rather than help them
    - Fishermen should not have to bear the costs of tracking devices when it is not for their benefit
    - Tracking data will show current locations, but the fishery and gear will not necessarily be in the same place in the future.
- It was suggested that rather than require this for the full fleet, it should be implemented as a pilot program for data collection with a smaller percentage of the fleet.
- The comment in support of Option B was because of the benefits of more precise understanding of when and where fishing activity is actually taking place, especially for enforcement and reducing entanglement risk to whales.

Public Comment Summary

Virginia Olsen:

- Supports Option A, status quo
- Concerned that tracking data will show where we are fishing now, but that might not be where we are fishing in 5-10 years. If wind sighting is based on current fishing areas that might hurt us in the future.

Jacob Thompson (Vinalhaven, ME):

- Supports Option A, status quo
- Any information we give to the government hurts us more than helps.
- I don't think wind cares where we fish based on meetings we've had in Maine.
- We do not need any more cost to fishers, as we are already being squeezed, and we do not have much more time to fish with whale issues.
- They do not track the whales or know where they are so how will this help? They know there are no whales where we fish now but it is still closed for part of the year.

Nick Falkingham (Jonesport, ME):

- Supports Option A, status quo
- Agrees with Jacob's comments that government overreach is never good for the fisherman.
- More closures will make gear density get worse, and then trackers will make things worse because if they see the gear getting denser we will get more closures for the whales.

Fred Penney (Boston, MA; Massachusetts Lobstermen's Association):

- Supports Option A, status quo
- Not happy with another cost put onto the fishermen when the benefit is for enforcement, not for fishermen. Already losing months of income. You should pay for this and not us.
- Agree that the density of fishing now is not necessarily going to be the same in the future; we don't fish in the same place from year to year.
- Doubts about whether this program even works.

Gabe Shadis (Bristol, ME):

- Supports Option A, status quo
- Concerned about the data being compiled used it to come to conclusions. Since we already have a closed area, the trackers will show no gear density there, and then it will be wide open for other development by wind, oil, or aquaculture.
- Several enforcement entities are implementing policies like closures, so our location data and gear is going to shift around.
- Federal interests and global energy conglomerates will have all the data they need to do what they want with fisheries, and small fishermen do not have the resources to defend themselves against it.
- Fishermen cannot pay for this.
- This will put crosshairs on the coastal fisheries, and in Maine we depend on our fisheries more than people give credit for.

Brian Thibeault (LCMA 2):

- Supports Option A, status quo
- Agree with comment made about applying this to a smaller percentage of the fleet as a pilot program for data collection, rather than requiring it for the full fleet.
- Atlantic Ocean is the new frontier for a lot money. Making new regulations for the industry is too steep. There are too many pending regulations on table and we don't know what is going to happen for whales and wind.
- Putting more on the industry's plate is unnecessary at this point.
- Wind developers already know where we are, and where gear density is.

Walter Willey IV (ME):

- Supports Option A, status quo
- Agree with Jacob's comments. Think we do not need to give this information to the state to help the whale and windmill people. It is not fair to the fishermen and they do not need to know everything we are doing.
- We do not even see whales anymore.
- The state is asking too much of us, and they should stand up for the industry.

Andy Santapaola (Gloucester, MA):

- Supports Option A, status quo
- State and federal government already has the information they need.
- We already have closures and other restrictions, over the years we have been crushed with more regulations. Things like this will just make it worse for industry.

Russel Wray (Maine, Citizens Opposing Active Sonar Threats - COAST):

**comments taken by phone due to audio issue on webinar*

- COAST fully supports Option B for several reasons. Requiring electronic vessel tracking of federal permit holders will allow for a more precise understanding of when and where fishing activity is actually taking place, meaning managers and law enforcement can better do their jobs, and not have to rely on ballpark information. It will make it easier for enforcement to locate gear, including non-compliant gear, and for managers to help insure a healthy lobster stock. Good for lobsters and good for fishermen.
- In addition, and very importantly, electronic tracking will better enable managers to minimize co-occurrence of persistent vertical lines and whales, helping reduce entanglement risk, and all the suffering that entanglements cause, for North Atlantic right and other whales. That will be good for the whales, meaning it's also good for our oceans, lobsters and fishermen, and the rest of us.
- COAST believes electronic tracking should go into effect in 2023. The earlier this more precise data can be collected, the sooner it can be put to good use.

Lobster Addendum XXIX & Jonah crab Addendum IV Public Hearings

Maine Webinar Hearing
January 19, 2022
21 Public Participants

Public: Erica Fuller (MA), Zack Klyver (ME) Joseph Fessenden (ME), Virginia Olsen (ME), Russell Sylvestre (RI), Kristan Porter (ME), Margaret Campbell (ME), Greg Mataronas (RI), Matt Gilley (ME), Patrice McCarron (ME), Aubrey Ellertson (MA), David Dauphinee, Amalia Harrington (ME), Chris Smith, Jason Mitschele (ME), Brian Thibeault (RI), Nathaniel Burola (ME), Ted McCaffrey, Patrick Duckworth (RI), Josiah Couture, Brennan Strong (ME)

Commissioners: Pat Keliher (ME), David Borden (RI),

Staff: Caitlin Starks (ASMFC), Toni Kerns (ASMFC), Julie Simpson (ASMFC), Mike Rinaldi (ASMFC), Megan Ware (ME), William DeVoe (ME), Lorraine Morris (ME), Kathleen Reardon (ME), Jeff Nichols (ME), Meredith Mendelson (ME), Allison Murphy (NOAA), Anna Webb (MA)

Hearing Overview

- 8 attendees provided public comments in support of Option A
- Supporters of Option A had several main concerns with tracking:
    - Concerns around additional expenses and regulations at a time when a lot of new regulations are being placed on the fishery.
    - Concerns that tracking data will be used against the industry, particularly in whale and wind conversations.
    - Concerns about how tracking devices would function in cold weather and what the power draw would be on a boat's battery
- There were also questions raised about how the power down authorization program would work in the event of a tracking device failure.

Public Comment Summary

Brian Thibeault (RI, LMA 2):

- Supports Option A, status quo
- Concerned about how the data collected will be interpreted. Given differences between boat speed between trawls, fishermen practices, and amount of crew (as examples), the plots of hauling vs. steaming will be different between fishermen and expressed concern about what wrong data interpretations might mean.
- Commented there are too many regulations and new ones are continually being made.

Greg Mataronas (RI, LMA 2)

- Supports Option A, status quo
- Vessel tracking is cost prohibitive for fishermen who are small businesses. Between whale measures and wind lease areas, the industry is already at a breaking point.
- Concerned about the historical nature of the fishery because the requirements to get into the fishery are becoming more burdensome; it will be harder for the next generation to enter the fishery.

- Questions about the data storage requirements associated with a 1-minute ping rate. Also noted the volume of data that will be generated and the fact that ASMFC and NOAA already have issues getting through existing responsibilities.
- Concerned about the cold weather ruggedness of the tracking units, particularly in winter when only 1 out of 10 days is a fishing day. Realizing you have a dead battery on a tracking device in the winter means you lose 10 days, not just 1 day.
- Had a question about the power-down authorization if a device breaks. Will there be an automated system for getting a power down authorization at 2am when I am getting to my boat?
- Expressed concern that the online only public hearings are restricting public comment and the Board should not move forward with minimal public input. In-person public hearings should be required.

Matt Gilley (ME, LMA1)
- Supports Option A, status quo
- Stated that this is asking fishermen to pay for more data for the whale and wind folks.

Virginia Olsen (ME, LMA1)
- Supports Option A, status quo
- Agreed with a previous speaker regarding concerns about the power draw of a tracking device, particularly in cold weather.
- Requested more details on what the permission for a power down authorization would consist of.
- Commented that this about spatial planning and not the stock assessment and instead of requiring trackers, needed data could be collected by asking additional questions at the dock.

Russell Slyvestre (RI, LMA2)
- Supports Option A, status quo
- He did not see the benefit of tracking but fishermen would have to pay.
- Expressed concern that the data would be used against the industry.

Jason Mitschele (ME, LMA1)
- Supports Option A, status quo
- Commented that there are other ways information can be collected.

Brennan Strong (ME, LMA1)
- Supports Option A, status quo
- He noted that he just got his LMA1 lobster permit and that a tracking requirement would be expensive and time consuming.
- Commented that there are too many new regulations right now.

Patrick Duckworth (RI, LMA2)
- Supports Option A, status quo
- Already has VMS and doesn't want to be required to buy another unit.

Lobster Addendum XXIX & Jonah crab Addendum IV Public Hearings

New Hampshire Hybrid Hearing

January 19, 2022

16 Public Participants (11 in person, 5 virtual)

Public: Heidi Henninger, Cassandra Leeman (ME), Ken Stanvick, Liam Sullivan, Bobby Nudd (NH), Chris Adamaitis (NH), Vincent Prien (NH), Pete Flanigan (NH), Jeff Riccio (NH), Erik Anderson (NH), Ross Nugent (NH), Jim Titone (NH), Bob Bryant (NH), Greg Marshall (NH), Jeff Thurlow (NH/MA), Mike Flanigan (NH)

Commissioners/Council Members: Cheri Patterson (NH), Dennis Abbott (NH), Ritchie White (NH), David Borden (RI)

Staff: Caitlin Starks (ASMFC), Toni Kerns (ASMFC), Julie Simpson (ASMFC), Allison Murphy (NOAA), Renee Zobel (NH), Anna Webb (MA), Nicholas Buchan (MA)

Hearing Overview

- All public attendees that commented supported Option A, status quo
- Many were concerned that there are too many unanswered questions regarding how these requirements would be implemented in practice
- In particular, concerns were raised about what would happen if the tracking device were to malfunction; harvesters did not want to be unable to go fishing if their device was not working
- Multiple attendees also felt that the tracking data would be used against the fishery rather than to help them
- Several people said fishermen should not have to pay for the devices because these data are most useful for other purposes (e.g., protected resources, aquaculture, wind development)
- There were concerns that the technology has not been sufficiently tested on enough vessels

Public Comment Summary

Ross Nugent (NH, LCMA 1 lobster):

- Supports Option A, status quo
- Additional information is needed and the processes are not fully fleshed out

Erik Anderson (NH, commercial lobster):

- Supports Option A, status quo
- Does not think this is developed enough for final action to be taken in 2022.
- Believes ASMFC has underestimated the volume of data that will come from this and will not be capable of processing it
- Has reservations about this information being used for protected species; does not think the data will have value in the protected species arena, and doubts if it will be beneficial for other applications.
- Worried that this information could be processed or developed incorrectly and could be used against the fishery for regulatory actions.
- Seems like there are conceptual benefits, but it could backfire in reality.

Liam Sullivan (RI, LCMA 2 lobster):

- Supports Option A, status quo

- It is hard not to look at this and think the data are most useful for offshore development and right whale issues.
- Questions whether it would be really be used to defend fishing grounds, or instead to remove fishermen from those areas in the future. Offshore development employs expensive lawyers that can find ways to work around the rules, so giving them more data gives them more opportunities to figure out how to move into the fishing grounds.

Chris Adamaitis (NH, commercial lobster)

- Supports Option A, status quo
- Has listened to many older fishermen who have gone through their devices malfunctioning, and that leaves them tied to the dock. There needs to be a plan so they are not forced to stop fishing because of a device malfunction, before implementing something like this.

Vincent Prien (NH)

- Supports Option A, status quo
- Concerned with the electronic aspect of this proposal. Has fished for a long time and thinks VMS was a disaster because if the computer wasn't working, they had to wait forever to be allowed to go fishing. It was also very expensive.
- It seems like this is a cash cow for somebody to make money.
- It is more government regulation that is not needed.
- Already have eVTRs where we report where we fish, when we fish, what we catch, etc.

Jeff Riccio (NH)

- Supports Option A, status quo
- Too many unanswered questions and too soon to be implementing this. Fishermen need answers before the Board votes on this.

Michael Flanigan (NH)

- Supports Option A, status quo
- Why is this any different than AIS? Seems like AIS is more accurate.
- This seems like too much

Bobby Nudd (NH)

- Supports Option A, status quo
- The lobster AP needs to be consulted on this.
- Understands the need for improved data, but is very concerned about this data becoming available to some organizations with a history of using this data in ways that end up being detrimental to fishery through public media.
- If this requirement goes through, afraid there may be unintended consequences to the fishery.

Greg Marshall (NH)

- Supports Option A, status quo
- Does not want to be tracked and feels like it is an invasion of privacy

Jeff Thurlow (MA)

- Supports Option A, status quo
- Agrees with reasons that were stated before

Lobster Addendum XXIX & Jonah crab Addendum IV Public Hearings

Massachusetts and Rhode Island Webinar Hearing

January 20, 2022

24 Public Participants

Public: Thomas Achterberg (RI), Charles B., Thomas Balf, Leah Baumwell, Kalil Boghdan (MA), Peter Brodeur (RI), Beth Casoni (MA), Jane Davenport, Katharine Deuel (MA), Joseph Fessenden (ME), Jay Kim (ME), Eric Lorentzen (MA), David Magee (MA), Marc Palombo (MA), Derek Pascale (RI), Jocelyn Runnebaum, Arthur Sawyer (MA), Scott Schaffer (MA), Robert Stewart, Liam Sullivan (RI), John J. Swoboda Jr (RI), Russell Sylvestre (RI), Brian Thibeault (RI), Barbara Skapa

Commissioners: David Borden (RI), Raymond Kane (MA), Jason Mcnamee (RI), Daniel Mckiernan (MA)

Staff: Caitlin Starks (ASMFC), Toni Kerns (ASMFC), Julie Simpson (ASMFC), William DeVoe (ME), Kathleen Reardon (ME), Allison Murphy (NOAA), Anna Webb (MA), Nicholas Buchan (MA), Crystal Franco (NOAA), Marianne Ferguson (NOAA), Scott Olszewski (RI), Richard Balouskus (RI), Story Reed (MA) Kelly Whitmore (MA), Steven Wilcox (MA)

Hearing Overview

- 3 attendees provided public comments in support of Option A
- 2 attendees supported Option B
- Other comments did not explicitly support either option but provided considerations for the Board
- Questions/concerns with tracking requirement included:
    - The proposed costs will impact harvesters; financial support from the agencies is needed and a precedent was set for it by funding provided to the scallop fleet for their VMS equipment.
    - Concerns about the units not being readily available or being difficult to find should be considered.
    - Installing these devices on small boats/skiffs may present practical difficulties.
    - Concerns about data from when the vessel is not fishing being recorded.
    - Information already exists from trip reports and log books to provide what managers need for wind and whale issues.

Public Comment Summary

Brian Thibeault (RI, LMA 2):

- Supports Option A, status quo
- Reason is because there are still a lot of questions with uncertain answers.
- Regarding funding, for small businesses this will be a burden as it is already difficult times. Even this relatively small cost will have an impact.
- Regarding the availability of units, thinks it needs to be certain that they would be available for everyone, because if they are not readily available it defeats the purpose of the program.
- Supports option A until there is definite availability and funding to pay for it.
- Would like to see an expanded pilot program in the next year and wants to see what the data look like so we can better understand this.
- Asked about confidentiality concerns about data becoming public information and personal fishing data being compromised.

    - Staff explained that no one would be able to access the confidential track data for individuals except managers and law enforcement.
- The wind companies already have maps of fishing areas - there are no spots in the ocean that is not highlighted on their maps. There is no consideration by them of this usage map for lobster. It hasn't seemed to reflect a difference to them. It may help for conservation or mitigation purposes, but it could also hurt if they claim there is no usage in their immediate area.

John Swoboda Jr. (RI)

- Has filled out VTRs for years and thinks all the info the managers want/need are in the VTRs so this seems redundant.
    - Dan McKiernan responded that many lobstermen do not have a VTR requirement, and the resolution of data is not adequate to describe the fishing grounds.
- Concerned about trackers showing when the vessel is used recreationally (not lobstering) and whether that will get confused for fishing activity.
- Commended the commission for the speed of this action, but there are so many uncertainties so cannot yet form an opinion.

Peter Brodeur (RI)

- Supports status quo.
- The expense of having VMS on every lobster, crab, or gill net boat fishing federal waters will be high. The last few years since VMS were required in the scallop fishery, NOAA assisted many of those boats and acquiring funds to pay for the required equipment. Monthly fees vary between suppliers, and with the amount of information that needs to be sent. The number of scallop boats pales in comparison to the number of lobster boats being asked to comply with this proposal, so is anyone going to step up to the plate to provide financial assistance to the small business operators that make up the majority of the lobster fleet?
- Since 1984 fishermen have been sending NOAA VTRs or logbooks to the states. In those records are areas, length of trip, landings and other useful information to show our use of the ocean and I hope these data have been used for wind and whales over the years. I have brought this up at other hearings and asked if those records have been used by those programs and teams, and it seems like they just do not want to access them. Now we are now asked to put VMS on anything that floats to prove that we are fishing. Is NOAA too lazy to put our records to use? The existing information may not cover everyone, but it goes a long way to drawing up the heat maps. The only benefit to this is the exact location of up and down lines.
- I want to point out that one of the hot spots, Coxes ledge, has been very profitable to many different fleets, but does anyone thing that any records would have stopped the wind farm from coming there?
- Asked a question about the units' power sources, internal batteries, size, and waterproofness.
- Stated that at the end of the season when they take the gear out of the water and are not fishing for several months, it seems like that should be a reason to not allow the device to be powered down.
- Some vessels at his dock are very small boats or skiffs with federal permits; it seems like installing a device on those small boats would be difficult or not feasible in some cases.
- There is pertinent info in VTRs that seems like it has been hidden away in a closet. That should be used before implementing additional regulations. Extra work should be done at NOAA to provide the information that is already there. There are already heat maps for showing where gear density is.

Jane Davenport, Defenders of Wildlife, DC

- Urge the approval of option B. The need for better temporal and spatial information for lobster is long overdue and would benefit all stakeholders. From a conservation perspective we are In favor of the addendum for several reasons.
    - We need high resolution data to be used in the decision support tool for the ALTWRT to inform future actions. A criticism of the LMA1 restricted area recently promulgated is that it didn't have effort data for the LMA 1 area. NMFS is obligated to make decisions on best available data. This addendum will increase quantity and quality of lobster effort data to inform future management measures.
    - This data will help law enforcement in offshore fishery. It is a huge area with no dedicated vessel and no specialized expertise to haul and resent long trawls. It serves the interest of law abiding fishermen to make sure everyone is in compliance and hold anyone who is not accountable.
    - Will benefit the lobster resource by improving the stock assessment.
    - It is also important to understand footprint of the fishery because of competing ocean uses. Future plans for offshore wind, aquaculture, and MPAs need to be considered, and need to be informed by data to show where lobster fishery is operating. This is a cost effective solution to benefit all stakeholders.

Liam Sullivan (RI)

- Asked if there has been any discussion of funding assistance. Staff responded that there have been discussions to try and secure funding to help offset costs.
- The costs that have been presented may not be much to the larger operations, but for smaller ops it would be a bigger hit.

Derek Pascale (RI)

- Has anyone looked into the availability of units with different companies? These days it is difficult to get things and it wouldn't surprise me if this is implemented and lots of units are ordered and it takes months to get them.

Arthur (Sookey) Sawyer (MA)

- Asked if people who already have trackers for other federal fisheries will have to get these devices also?
- The feds paid for VMS for other fisheries so it would only be right for them to find the money to find this.

Marc Palombo (MA, AOLA, MLA)

- Supports Option B, because he supports anything that will help enforcement. There is little to no enforcement in Area 3, and this is a start.

Beth Casoni (MA, MLA)

- Supports status quo. Will provide written comments.

Eric Lorentzen (MA)

- Provided comments in the chat during the hearing:

- If the trackers were to be approved, I would like to see a more simplified reporting report/requirement. For example, not having to report the 10 minute square and management area since the tracker would capture that data. I want these devices to make catch reports easier by not having to fill out so much information.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
55 Great Republic Drive
Gloucester, MA 01930

January 28, 2022

Robert Beal, Executive Director
Atlantic States Marine Fisheries Commission
1050 N. Highland Street, Suite 200A-N
Arlington, VA 22201

Dear Bob,

Please accept the following comments on the proposed vessel tracking program for the American lobster and Jonah crab fisheries, as outlined in draft Addendum XXIX to Amendment 3 of the Interstate Fishery Management Plan for American Lobster and draft Addendum IV to the Interstate Fishery Management Plan for Jonah Crab. I want to highlight and commend the efficient work of Commission staff and this action's Plan Development Team in developing this draft addendum. It provides a thorough, well organized, and plain-language explanation of the main components of this program.

Overall, we are supportive of the proposed vessel tracking program for the Federal lobster and Jonah crab fisheries, as these data will enhance our ability to manage, enforce, and assess impacts to the fishery. The types of positioning systems envisioned for use are cost-effective and balance the impacts to industry with the need for the data collection program. We have two suggested modifications intended to increase the effectiveness of this program.

First, we suggest eliminating Federal Area 5 waiver lobster permits from requiring these tracking devices. While these permit holders fish with traps, they do so under an exemption program to target black sea bass that treats these permits similarly to the non-trap permit designation, which was excluded from the proposed requirements in this document. While collecting this information may have some benefits for evaluating interactions with other ocean uses, the small number of Area 5 waiver permits we issue each year (12-14 in the last 3 years) minimizes the utility of this information, especially when compared to the several hundred black sea bass permits issued each year. Rather than burdening this handful of permits, pursuing a more comprehensive black sea bass monitoring program in conjunction with the Mid-Atlantic Fishery Management Council would provide more complete black sea bass fishery information.

Second, consistent with requirements in our Federal vessel monitoring system regulations, it may be useful to consider requiring that vessel tracking service provider companies support state or Federal enforcement investigations. Federal regulations at 50 CFR 600.1515 state that

1. All technical aspects of the vessel monitoring system may be admitted as evidence,
2. That service providers must provide technical and expert support for litigation, and
3. That service providers must sign a non-disclosure agreement to ensure the confidentiality of the program.

While not all of these requirements may be necessary, highlighting the need for investigative and litigation support will likely aid enforcement's nexus with this data collection program.

I understand that additional details concerning the state implementation of this program will be developed through standard operating procedures, likely to occur late this spring and summer. My staff are committed to providing the Commission, ACCSP, and states with continued support where there is a nexus with Federal data collections, with information on the Federal vessel monitoring system requirements that may serve as an example for state implementation, and with the data necessary to manage this program. As always, I look forward to working with you and the Commission to facilitate the cooperative management of our fisheries and marine resources.

Sincerely,

Michael Pentony
Regional Administrator

cc: Caitlin Starks, Fishery Management Plan Coordinator, ASMFC

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Caitlin Starks
Atlantic States Marine Fisheries Commission
1050 N. Highland St. Suite 200A-N
Arlington, VA 22201

January 31, 2022

Dear Ms. Starks:

The Maine Lobstermen's Association (MLA) provides these written comments in response to the Atlantic States Marine Fisheries Commission (ASMFC) American Lobster Draft Addendum XXIX (29) for Public Comment. The MLA was founded in 1954 and is the oldest and largest fishing industry association on the East coast. The MLA advocates for a sustainable lobster resource and the fishermen and communities that depend on it.

The MLA understands the overall objective of this addendum – to collect data to better characterize efforts in the lobster fishery to improve stock assessment, inform discussions and management decisions related to protected species, and enhance offshore enforcement. However, we are very concerned about mandating the use of electronic vessel trackers in the LMA 1 federal lobster fleet to provide these data. Rather than adopt Addendum 29, the MLA urges the ASMFC to fully implement the provisions of Addendum XXVI (26), including 100% trip level reporting for all commercial lobstermen by ten-minute square, and to implement the three recommendations to address data deficiencies for federal lobster permit holders who are not required to report through a state program.

The ASFMC must identify what data deficiencies will exist after full implementation of Addendum 26, and then focus on whether electronic vessel tracking is the best approach to address any data gaps. As described below, MLA members have many concerns with using electronic vessel tracking to collect data.

<u>Addendum 26 and its Recommendations are not Fully Implemented</u>

In 2018, ASMFC adopted Addendum 26 to the Lobster FMP to "to improve harvester reporting and biological data collection in state and federal waters" and "utilize the latest technology to improve the spatial resolution of harvester data, increase the collection of fishery effort data, and promote the collection of biological data offshore." This management action requires all states to implement 100% harvester trip level reporting by 2023 and requires new data elements, such as number of buoy lines fished and data collection by ten-minute square.

The ASFMC determined that one of the deficiencies in Addendum 26 is that not all federal permit holders are required to participate in trip level harvester reporting. However, that is not the case for Maine's state lobstermen or federal permit holders. To address concerns with data collection for federal

permit holders, Addendum 26 recommends 1) establishing a harvester reporting requirement for federal permit holders (presumably those federal permit holders not reporting through a state); 2) creation of a fixed gear vessel trip report (VTR) for federal permit holders; and 3) implementation of a targeted lobster sampling program in federal waters. The MLA is not aware that any of these measures have been implemented.

The MLA strongly urges the ASMFC to fully implement Addendum 26 and act on its three recommendations before putting additional operational burdens and costs on all LMA 1 federal permit holders by mandating electronic vessel tracking. MLA also urges ASMFC to consider improvements to Addendum 26. For example, better spatial resolution of lobster fishing effort could be achieved by requiring lobstermen to report each of the ten-minute squares in which they fish, rather than being limited to one. ASMFC should also proactively work with NMFS to implement a harvester data collection program for federally-permitted lobster vessels that do not report through a state.

Full implementation of Addendum 26 and its recommendations will significantly improve our understanding of effort in the American lobster fishery at a much finer spatial-temporal scale and thus satisfy the objectives ASMFC has identified under Addendum 29.

Concerns with Addendum XXIX (29)

MLA members have identified many concerns with the mandatory vessel tracking for federal permit holders proposed under Addendum 29 which relate to a) how the data will be used and potential for benefit versus harm; and b) operational concerns and cost to the industry.

a) Concern over Data Usage and the Potential for Benefit versus Harm

MLA members express strong concern with how data collected through electronic vessel tracking will be used. From a lobsterman's perspective, VMS in other fisheries has been used predominantly to close areas to fishing and for enforcement of those closures. Lobstermen are not aware of examples in which VMS data has benefitted these fisheries.

Maine lobstermen feel certain that adopting electronic vessel tracking in the Area 1 federal lobster fleet will lead to future closure of prime fishing grounds under the federal ten-year whale plan. Maine lobstermen are currently subject to a nearly 1,000 square mile closure in offshore LMA 1 for four months each year, based on detection of a very small number of right whales in that area (73% of whale detections from the survey were in Area 3)[1].

NMFS has adopted a strategy that is punitive towards the lobster fishery because the agency assumes that all buoy lines pose significant risk to right whales, even when the presence of right whales is extremely low. As demonstrated in the most recent Final Whale Rule, NMFS's Decision Support Tool (DST) used to assess the percentage of risk reduction from right whale conservation measures, is very sensitive to the number of vertical lines in an area. The LMA 1 closure demonstrates that the detection of just a few right whales in an area where vertical line density is higher than that of adjacent areas will result in a closure. Identifying areas of high buoy line density, as will be done through electronic vessel tracking, is akin to identifying areas for closure to protect right whales.

The entire Northeast lobster fishery is facing a new 60% risk reduction in 2025 and another 87% risk reduction in 2030, and NMFS has postured these reductions may be required sooner based on revised

[1] Maine Department of Marine Resources comments on Proposed Rule, March 1, 2021. *See* https://www.maine.gov/dmr/science-research/species/lobster/documents/ME%20DMR%20Comment%20Letter%20on%20Proposed%20Rule%20-%20color.pdf

PBR and right whale population estimates. Adopting electronic vessel tracking will identify prime fishing bottom, and if any right whales are detected near these areas, they will very likely be closed to lobster fishing.

The MLA strongly urges ASMFC to fully understand the probability that providing electronic vessel tracking data will translate directly into a closure of prime lobster fishing bottom in LMA 1 under the ten-year whale plan before mandating electronic vessel tracking for this portion of the federal lobster fleet.

MLA members are also concerned that they do not fully understand how data collected through electronic vessel tracking, at fishermen's expense, will be used. The Addendum makes broad statements that these data will be used to improve stock assessment, inform management decisions related to protected species and marine spatial planning, and enhance offshore enforcement. While it may seem a cliché for fishermen to oppose electronic vessel tracking for fear that these data will be used against them, in today's world it is not. Lobstermen are being aggressively targeted by the federal government and environmental community for draconian risk reductions under the guise of right whale protection. Lobstermen are seen as obstacles by multi-national energy companies seeking leases to industrialize large expanses of the ocean with offshore wind farms. Lobstermen are expected to trust in marine spatial planning which seeks to define static use areas in the ocean when the Gulf of Maine and commercial fisheries are dynamic. Electronic vessel tracking is not capable of informing such dynamic processes – it cannot identify fishing grounds that were historically important or those which may emerge as important fishing areas in the future.

Fishermen should no longer be considered paranoid or their concerns commonplace when it is nearly certain that some portion will lose access to fishing grounds as these pressures mount. Fishermen are well-justified in not wanting to accelerate this process or to pay for it. Managers must acknowledge these very real threats facing commercial lobstermen and be honest about the strong potential that data collected through electronic vessel tracking will, in fact, hurt many commercial fishing businesses.

It is incumbent upon ASFMC to provide a more thoughtful and informed response to fishermen when they ask how these data will be used. At a minimum, ASMFC should be able to clearly explain to lobstermen how VMS data collected in other fisheries have either benefitted or harmed these fleets and be more specific in how the program envisioned for lobstermen may harm or benefit the lobster fleet. Generic responses relating to improvements in stock assessment, management, and enforcement do not begin to address these very real concerns.

b) Operational Concerns and Cost to the Industry

MLA members express a variety of operational concerns regarding implementing the proposed electronic vessel monitoring program. As stated above, many lobstermen do not believe that this data collection effort will benefit the fleet, and in fact, sincerely worry that these data will be used against them. Given the lack of understanding for how these data will be used, and whether these data will benefit or harm them, the MLA does not support requiring lobstermen to be financially responsible for the electronic vessel tracking program. If ASMFC ultimately moves forward with this Addendum, it should provide funding to purchase, operate, and maintain the equipment required to implement this program.

The MLA is opposed to requiring fishermen to operate more than one electronic vessel tracking system aboard their vessel. There are many lobstermen who participate in other federal fisheries which require

VMS. Managers must review existing VMS systems and ensure that lobstermen are required to use only one system which best addresses the data needs across these fisheries.

MLA members are also concerned with the lack of information on who will produce these units, the actual cost of units and monthly data charges, the reliability of the units and ramifications if a unit malfunctions. Members are also concerned about the requirement that the unit must be in operation even when the vessel is not fishing. Specifically, lobstermen question the actual costs, whether a lobsterman will be able to fish if the unit malfunctions, the cost to maintain the units and to receive technical support if a unit malfunctions, and questions about battery life and keeping the units active when a vessel is in port. The ASMFC has indicated a willingness to address these questions, however, Commission staff were not able to provide specific answers during the public hearings.

The lobster industry is facing significant pressures through massive risk reductions required under NMFS's ten-year whale plan and pressure to make room for large-scale offshore wind farms. They justifiably worry that implementing an electronic vessel tracking program at this time is just one more barrier to maintaining a successful and profitable fishery.

Finally, it is important to be mindful that the virtual public hearings necessitated by Covid restrictions are not effective in soliciting public comment from fishermen. It is very likely that many lobstermen remain unaware of this draft Addendum and they would likely raise additional concerns that have not yet been brought forward.

In closing, the MLA supports improving data collection to better understand effort in the American lobster fishery. However, the Association believes that Addendum 26 already lays out a plan, yet to be fully implemented, that will achieve this goal. We remain very skeptical that an electronic vessel monitoring program for the LMA 1 lobster fishery will benefit the fleet, and in fact, we worry that this program may instead cause harm.

Thank you for your consideration.

Sincerely,

Patrice McCarron
Executive Director

ATLANTIC OFFSHORE LOBSTERMEN'S ASSOCIATION

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Caitlin Starks
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Arlington, VA 22201
Submitted via email

Dear Caitlin,

The Atlantic Offshore Lobstermen's Association submits the following comments on American lobster FMP Draft Addendum XXIX / Jonah Crab FMP Draft Addendum IV. The Association generally supports the objectives sought by implementing electronic tracking as a means of documenting the footprint of the fishery, (Option B), however our membership is not uniformly in favor of this alternative. We recognize that this program offers a cost-efficient means to gather much needed spatiotemporal data to inform decisions on wind power siting, whale entanglement risk reduction, and other issues. However, we have questions and concerns regarding the proposed tracking program as outlined, which we describe below.

Our members main concerns are threefold:

Privacy
AOLA members are legitimately concerned about data privacy. While the draft addenda address data handling and confidentiality procedures, they are silent on the issue of privacy and access to data by outside parties through legal action, e.g., freedom of information act (FOIA) requests. We ask that the Lobster Board receive a legal briefing on whether or not these data could be petitioned for via FOIA request, or other judicial/legal action, before this program is implemented. Further, we strongly suggest that the Commission convene the Lobster Board Advisory Panel expeditiously to discuss the issues of privacy, confidentiality, data ownership/management/access, as there may be other related issues that we have failed to consider.

Enforcement
The draft document notes that the state agencies will be tasked with resolving "mismatches between vessel trip reports and associated vessel tracking information, or when tracking data are missing or incomplete." A standard needs to be developed by ASMFC, prior to implementation, which specifies when such inconsistencies trigger an enforcement investigation and what enforcement body has the lead in investigations.

Also related to enforcement, it is a normal practice for federal lobster and red crab trap gear to be fished close to boundary lines (e.g., LMA jurisdictions, the Hague Line, just outside closure areas). The location of the vessel when setting gear should be the legal standard for enforcement, not the location of the vessel when gear is hauled, as ocean conditions may require the vessel to

temporarily cross a line to reach a buoy and commence hauling. In these cases, enforcement needs to factor in the precision and accuracy of the tracking devices, and a buffer may need to be considered before enforcement actions are taken. The details of boundary area enforcement should be published prior to implementation of this program or, at a minimum, discussed by the Lobster Board Advisory Panel in advance of implementation.

Further, while we understand it is not the intent of the draft addendum to use tracking data to enforce trap limits, we note that offshore vessels frequently, and legally, haul the same gear multiple times on a single trip. Similar concerns about using tracking data to count traps hauled were raised repeatedly at public hearings.

Extent of Program

As this program is outlined, it is primarily proposed as a data gathering tool. With that framing in mind, data may not need to be collected into perpetuity to establish an accurate spatiotemporal footprint of the federal lobster fleet. Therefore, we suggest the Board consider adding a provision to Option B that builds in a requisite re-evaluation of the program 2-3 years after implementation.

The following additional items are relevant if Option B is approved. If the intent is to expand on and clarify these items in an implementation and operations procedures document, the Board might consider simplifying the final addenda to exclude all but the minimum requirements of each party.

Management Options

It is unclear whether a tracking device needs to be installed and active for the whole federal fishing year (section 3.2.1) or only prior to the first fishing trip where lobster/jonah crab gear will be fished (section 3.0 Option B). For example, if a permit holder declares into the LMA3 fishery, but fishes exclusively with red crab pots from May 1 – Nov 1 only fishing lobster trap gear in the winter, when is a tracker required?

The third clarifying bullet under proposed option B may need to be refined to exempt vessels participating in federal non-lobster/jonah crab trap gear fisheries, such as with fish or red crab pots, if that is the intent of the Board. Specifically changing: "does not fish trap gear at any point in the fishing year" to "does not fish lobster trap gear at any point in the fishing year."

Tracker Specifications and Approval

We suggest that a requirement be added to Table 2 that requires all devices to have a means for the user (vessel crew) to visually confirm that the device is on, working, and transmitting, such as external indicator lights. ACCSP should also develop an automatic process (text or email) to notify fishermen and the responsible state agency if unit data is not being received.

The operations procedure document should outline processes and responsibilities to identify and fix broken devices. Vessel operators should not be penalized for cases of unidentified technology failure, particularly in cases where a defect is not detected until the vessel returns to cellular

transmission range or not until the data validation process. In the case of a device malfunction discovered mid-trip, we support a provision that allows the trip, including multi-day trips, to continue. In cases where a device cannot be fixed or replaced promptly, we support state waivers to allow for short periods of fishing without tracking.

We also believe it is important to have a method to quickly approve qualified devices, as they become available, to ensure a wide range of options. The suite of certified products needs to include systems that allow vessel owners and fleet managers to view their own data, for example via a secure web server that is kept synchronized with data transmissions to ACCSP. We encourage ASMFC to communicate with current VMS, electronic reporting, and electronic monitoring providers to see if there is interest in offering solutions to this fleet. Many of these companies have partnerships to offer integrated reporting and tracking solutions, which could be particularly beneficial to permit holders already using vessel monitoring, communications, and/or reporting technologies.

To that aim, we ask that the ASMFC include a provision to allow lobster vessels with communication and/or compliance VMS systems to be exempt from additional tracker requirements, provided the vessel's existing satellite-based system is utilizing an acceptable ping rate. It takes LMA3 vessels approximately one hour to haul each 35-45 trap trawl. Therefore, a ten or fifteen minute ping rate, would be sufficient to document hauling locations for this portion of the federal fleet. VMS devices offer a proven technology capable of real time tracking and data transmission, as well as offering value added features for trip vessels, such as weather updates, email communication and eVTR integration. Permit holders should be given the option to increase the ping rate on existing technology, rather than be required to add duplicative cellular trackers.

State-Level Administrative Processes

We suggest the program be administered in a cycle the matches the federal fishing year or trap tag calendar. The states and NMFS should agree to a specific deadline for the transmission of GARFO permit data to state agencies, or implement a process that occurs on a routine schedule.

Federal-Level Administration Processes

We are unsure about the appropriateness of including eVTR language in this document. If the Board wishes to retain this language, it should be clarified to make clear that GARFO will include available eVTRs in their QA program from the implementation date forward. While lobster only permit holders are not yet required to submit eVTRs, a majority of LMA3 lobster vessels already do so as a requirement of other endorsements on the vessel's permit.

Thank you for the opportunity to comment and I look forward to discussing these and other issues at the Board meeting.

David Borden

Executive Director

Conservation Law Foundation
Center for Biological Diversity • Defenders of Wildlife • Whale and Dolphin Conservation

January 31, 2022

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Sent via Email: comments@asmfc.org

Re: Public Comment on Draft Addendum XXIX to Amendment 3 to the American Lobster FMP and Draft Addendum IV to the Jonah Crab FMP (Draft Addendum XXIX)[1]

Dear Ms. Starks,

These comments are submitted on behalf of Conservation Law Foundation, Center for Biological Diversity, Defenders of Wildlife, and Whale and Dolphin Conservation. Our organizations write in strong support of Draft Addendum XXIX (Addendum) and the requirement for federal permit holders in the American lobster fishery, including those targeting Jonah crabs, to use an electronic vessel tracking system consistent with certain requirements. The need for high-resolution spatial and temporal data to appropriately characterize the effort in the federal American lobster and Jonah crab fisheries in future management decisions, is long overdue.

While we stand by our previous recommendations for Vessel Monitoring Systems (VMS) on all federal fisheries, we recognize that vessel trackers are a more cost-effective solution to address several long-standing issues in the fishery at this time. Areas where enhanced data collection could improve future management actions in the lobster fishery include: (1) stock assessments, (2) protected species interactions, (3) future marine spatial planning, and (4) enforcement.

Specifically, our organizations urge you to adopt <u>Option B</u> and Require Electronic Vessel Tracking for Federal Permit Holders: Option B will require all federal lobster and Jonah crab vessels issued commercial trap gear area permits to install an approved electronic tracking device that collects and transmit spatial data to participate in the fishery. Further it will prohibit such vessels from landing lobster or Jonah crab taken with trap gear without an approved device. And, finally, permit holders will be required to activate an approved device prior to beginning a trip, keep the device powered on at all times unless authorized to power down by port state, and prohibited from tampering with the device. See Table 1.

We support the required criteria for approved units in Table 2 (p. 8) that ensure appropriate data collection rates: Required criteria include the ability to collect location data

[1] http://www.asmfc.org/files/PublicInput/LobsterDraftAdd_XXIX_JonahCrabDraftAdd_IV_PublicComment_Dec2021.pdf.

at a minimum rate of one ping per minute for at least 90 percent of the fishing trip to best distinguish lobster fishing activity from transiting activity, the location of individual trawls, and to estimate the number of traps per trawl. At a minimum, a "ping" will collect the device's current datetime, latitude, longitude, and device/vessel identifier. And that data initiated from the tracking device will be transmitted to the vendor as soon as possible, but no more than 60 minutes from the time the fishing trip concludes.

The data storage approach is reasonable: Atlantic Coastal Cooperative Statistics Program houses the data received from tracking vendors as well as the eVTR data from GARFO, matches the vessel tracks to the relevant trip, and maintains data confidentiality in accordance with federal law with dissemination to authorized entities only. This is a reasonable approach and would appear to address the confidentiality concerns raised by lobstermen at public hearings.

* * *

High resolution spatial and temporal effort data is necessary to address several challenges facing the fishery, including:

1. **Stock Assessment Limitations**

Higher resolution spatial data, such as that obtained by tracking devices, could significantly improve the stock assessments for lobster and Jonah crabs. Currently the assessments are only able to analyze stock composition data by NOAA statistical area due to differing state and federal reporting requirements. This creates challenges because some of the parameters in the model vary at a finer spatial scale than statistical area. Tracking data will both improve the assignment of effort between the stock units (Gulf of Maine, Georges Bank, and Southern New England) and improve the size composition data used in the model to improve the accuracy of exploitation and abundance.

2. **Fishery Interactions with Protect Species**

Currently, the Atlantic Large Whale Take Reduction Plan aims to reduce serious injuries and mortalities to large whales in the American lobster fishery by a minimum of 60 percent. However, that risk reduction goal was based on a potential biological removal rate (PBR) of 0.9. According to NOAA Fisheries most recent right whale draft Stock Assessment Report, PBR has declined to 0.7. Therefore, the 60 percent risk reduction target is insufficient given the declining status of North Atlantic right whales. Putting that aside, the required risk reductions over the next ten years will be informed by the Decision Support Tool (developed by the Northeast Fisheries Science Center, Industrial Economics, and Duke University), which marries information on the distribution of whales with distribution on commercial fishing gear, as well as the strength and weight of that gear, to predict areas where whales may be prone to entanglement and to estimate risk reduction from various management measures. The use of electronic vessel tracking data would significantly improve the effort models used to assess the location of vertical lines in the lobster fishery and their associated risk to right whales.

3. Future Marine Spatial Planning in the Region

Several recent actions in the Northeast, including the coral amendments developed by the New England and Mid-Atlantic Fishery Management Councils and the designation of Wind Energy Areas, lacked fine spatial data on the "footprint" of the lobster fishery, as well as other fisheries. Increasingly, our ocean waters are being identified as sites for offshore aquaculture farms, conservation to increase ocean resiliency to climate change and protect biodiversity, and offshore energy development such as what is contemplated in the Gulf of Maine. Rather than rely on coarse and potentially inaccurate data, the ASMFC should approve this amendment so that future planning for ocean use and conservation benefit from more accurate and precise data.

4. Law Enforcement Challenges:

There have been longstanding concerns about enforcement in the lobster fishery, particularly in the offshore where the geographic size of the area and distance from shore, lack of a dedicated offshore enforcement vessel capable of inspecting, hauling, and re-setting long trawls, and the need for specialized expertise, loom large.[2] In addition to other efforts to enhance enforcement capabilities, the ability to differentiate hauling from transiting would be critical to identifying when illegal fishing is occurring. In most instances it is not necessary for law enforcement personnel to know this data in real time as the data transmitted upon reaching port will identify critical issues and allow for follow-up actions. The one-minute ping rate will allow for the detection of setting of gear when no hauling occurred (such as when gear is wet stored), and for greater precision when estimating the length of smaller trawls. We agree with the Addendum's conclusion that "[g]iven finite enforcement resources, information on distinct fishing locations would improve the efficiency and capability of offshore enforcement efforts." (see p. 5).

Conclusion

Slides shown during the public hearings confirm the results of the pilot project – several vendors can supply devices that deliver vessel positions and detect individual trap hauls at much lower cost and faster ping rate than satellite systems, delivering valuable information for future use by scientists, managers, and decision-makers. We urge you to move forward on this Addendum and thank you for considering these comments.

Erica Fuller
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Kristen Monsell
Center for Biological Diversity

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[2] *See* Nov. 4, 2021 Op Ed published by David Goethel in the Seacoastonline available at: https://www.seacoastonline.com/story/opinion/letters/2021/11/04/opinion-column-grievous-assault-lobster-resource/8539764002/; *see also* 2019 Lobster Fishery Enforcement Report to Congress attached to this letter as Exhibit 1.

REPORT TO CONGRESS

NORTHEAST LOBSTER FISHERY ENFORCEMENT

Developed pursuant to: Senate Report (175-275) accompanying the Consolidated Appropriations Act, 2019 (Public Law 116-6)

Chris Oliver, Assistant Administrator
National Marine Fisheries Service
National Oceanic and Atmospheric Administration

Neil A. Jacobs, Ph.D.,
Assistant Secretary of Commerce for Environmental Observation and Prediction,
Performing the Duties of Under Secretary of Commerce for Oceans and Atmosphere

THE SENATE REPORT (115-275) ACCOMPANYING THE CONSOLIDATED APPROPRIATIONS ACT, 2019 (PUBLIC LAW 116-6) INCLUDED THE FOLLOWING LANGUAGE

"Northeast Lobster Enforcement.—The Committee encourages continued collaboration between States, NOAA, and the U.S. Coast Guard to improve Federal capacity for offshore lobster enforcement in the Northeast. Offshore enforcement of fixed-gear fisheries, such as lobster, is critical to ensure fishing gear is compliant and minimizes negative impacts on whale health. The Committee directs NOAA to report to the Committee within 180 days on its progress on this issue and any further steps needed to ensure adequate enforcement of offshore lobster fishing."

THIS REPORT RESPONDS TO THE SENATE COMMITTEE'S REQUEST.

TABLE OF CONTENTS

Executive Summary

The National Oceanic and Atmospheric Administration (NOAA) has conducted meetings with the United States Coast Guard (USCG), our state Cooperative Enforcement Partners, and our Atlantic Large Whale Take Reduction Program team to discuss the challenges in offshore lobster fishery enforcement, as well as options for how to best address the situation. As a result of this review, it was recognized that enforcement in Lobster Conservation Management Area 3 (see Appendix A) is challenging given the distance from shore, the need for specialized equipment and expertise, safety concerns, and the extensive size of the fishing area. Given these challenges, a multifaceted approach is required to effectively enhance enforcement of the offshore lobster fishery.

Enhanced enforcement of the offshore lobster fishery would promote the accomplishment of two goals: 1) increased compliance with the Atlantic Large Whale Take Reduction regulations, which are designed to limit marine mammal entanglements; and 2) increased compliance with trap allocations. The options considered have the added benefit of improving the data available to the agency regarding conduct of the offshore lobster fishery and compliance with current regulations that will support lobster management and large whale conservation.

I. Federal Management of the Offshore Lobster Fishery

The Federal offshore lobster fishery extends from Maine to North Carolina. There are seven Lobster Conservation Management Areas, designated as Area 1, Area 2, Area 3, Area 4, Area 5, Area 6, and the Outer Cape Cod Area (see Appendix A for a map of the seven Lobster Conservation Management Areas). The American lobster fishery is cooperatively managed by the states and the NOAA National Marine Fisheries Service under the framework of the Atlantic States Marine Fisheries Commission.

The area examined in this report is the offshore Lobster Conservation Management Area 3, which is larger than all the other areas combined. The trap allocation for Area 3 is 1,945 traps per permit, and more than 60 vessels typically fish in excess of 100 miles from shore. Although the western boundary of Area 3 is close enough to shore that federally deputized state law enforcement partners can reach it during favorable weather with existing patrol vessels, states lack the capability to retrieve, inspect, and reset lobster traps due to the distance from shore and the water depth in most of Area 3. NOAA's Office of Law Enforcement (OLE) vessels are similarly constrained. USCG has the ability to reach the entirety of Area 3, but their current vessel configurations do not allow them to retrieve and reset lobster traps.

Lobster fishing managed in Federal waters (3 to 200 miles offshore) must adhere to regulations implemented through the Atlantic Coastal Fisheries Cooperative Management Act, including but not limited to the following:

- Fishermen must have a permit to harvest lobster. A temporary moratorium on the issuance of Federal lobster permits, which limits the amount of available permits to control the number of fishermen harvesting lobster, was extended indefinitely in 1999.

- Limits on the minimum and maximum size of lobsters that can be harvested, which varies by management area.
- Prohibition on possession of lobster meat and lobster parts. Lobsters must be landed live and whole to ensure they are of legal size.
- Measures to protect egg-bearing females – fishermen may not harvest them and, in most areas, if one is caught in their trap, they must notch its tail fin in a "v" shape before returning it to the water. The harvest of "v-notched" lobsters is also prohibited.
- Gear restrictions and specifications, including trap size, gear marking requirements, escape vents, and ghost panels.
- Trap limits, which vary among management areas.
- All Federal lobster dealers must submit weekly electronic reports for all lobsters they purchase from fishermen with Federal permits. Federal lobster permit holders are not required to report landings unless they have another Federal fishery permit, in addition to their Federal lobster permit, that requires landings reports (e.g., Northeast multispecies permit).
- Area-specific measures have been enacted to reduce fishing effort on the Southern New England stock, including biological and effort control management measures.

A related concern regarding offshore lobster fishing is the ongoing mortality rate of the endangered North Atlantic right whale. In recent years, most documented fishing gear entanglements of large whales that result in serious injury and mortality come from trap/pot gear. These traps lie on the ocean floor and are connected to buoys at the surface by long vertical buoy lines. While many whales determined to have succumbed to entanglement are found without gear attached, when gear is present it is often consistent with vertical lines from fixed gear.

II. Offshore Lobster Enforcement Challenges

Due to the distance from shore and the large total area it encompasses, enforcement of Federal lobster fishery regulations within Area 3 has been a challenge.

In an effort to address these longstanding challenges, NOAA and USCG recently increased the sharing of lobster fishery-related information resulting from dockside contacts, overflights, patrols, and vessel monitoring activities. In July 2017, NOAA held the first of a series of enforcement meetings with state and Federal law enforcement partners that included intelligence planning, USCG vessel capabilities, enforcement operations, and legal considerations. A significant observation from these meetings was that none of the states, USCG, or OLE currently has the capability to physically travel to the offshore fishing grounds, retrieve traps from the ocean floor, and reset those traps safely and properly.

As a result of these meetings, the following enforcement challenges were identified:

1. Trap limits and trap tagging requirements. In cooperation with the states and lobster industry, and pursuant to the Atlantic States Marine Fisheries Commission's Interstate Fishery Management Plan for American Lobster, NOAA has implemented a lobster management program in offshore Area 3 based on effort control through limited entry

and permit-based trap allocations. These allocations change annually due to a series of trap reductions at the start of each fishing year, and permit holders can buy and sell partial allocation on an annual basis to mitigate the trap reductions. The result of this effort control is a relatively low number of traps – approximately 112,000 traps compared to more than 1 million in the Federal waters of Area 1. One management and enforcement concern is whether offshore fishermen are actually reducing or adjusting their traps each year commensurate with the trap cuts and trap allocation transfers. The current regulations require a uniquely numbered tag be attached to each trap a fisherman is permitted to use to prevent fishermen from fishing more traps than they are allowed. However, without actively hauling gear to check the tag or deploying some type of technology to monitor traps or fishing activity, effective enforcement of trap allocations and associated reductions is a significant challenge and, consequently, the level of compliance is difficult to determine.

2. Lack of fisheries data. NOAA and its enforcement partners have been hampered by a lack of reliable fisheries data regarding offshore lobster industry activity in Area 3. Knowing where fishing activity is taking place is crucial in determining where to focus limited enforcement resources. However, the current offshore lobster fishery requirements do not allow for the appropriate level of tracking and reporting that would be conducive to effective enforcement (see initiatives described in Section III below.)
3. Gear configuration, marking, and specifications. The gear used in Area 3 "soaks" in the fishing grounds all season. As a result, enforcement of trap gear specifications such as trap size, escape vent size, ghost panels, and surface gear marking requirements requires an ability for law enforcement to either pull gear where it is located, or to monitor gear while it is being retrieved by fishermen.

III. Offshore Lobster Enforcement Initiatives Under Consideration

NOAA has identified the following as the most viable initiatives to increase Federal enforcement activities in the Area 3 Offshore Management Area.

A. Mandatory Vessel Trip Reports

At present, there are no requirements for trip reporting for offshore "lobster only" permitted vessels fishing in Area 3. Adding a vessel trip report (VTR) requirement that includes data on location, gear (traps per trawl), and haul times would be a vital first step in improving compliance monitoring and enforcement efforts.

NOAA has already initiated the rulemaking process to expand the harvester reporting requirement to all Federal lobster vessels, including those trap fishing vessels operating in Area 3. The proposed rule is expected to be published in late 2019 with implementation of the requirement at the start of the 2020 fishing year. This action would require an additional 1,434 Federal lobster permit holders (47 percent of the 3,056 permit holders) to submit a VTR for each fishing trip.

Requiring all Federal lobster vessels to report through the VTR program will provide important information on where the fishery is occurring. This information with support

compliance monitoring and enforcement efforts, as well as lobster management and whale conservation.

B. Mandatory Vessel Monitoring System

Unlike many other fisheries in the area, there is currently no vessel monitoring system (VMS) requirement within the Federal lobster fishery. Implementing a VMS requirement would allow law enforcement personnel to know in real time when and where a vessel is fishing, as well as activity associated with the vessel's tracks. Real-time vessel location data is essential for an effective and efficient on-the-water enforcement capability.

To explore the feasibility of this option, NOAA is working with the offshore lobster industry and others to develop a pilot program to test various VMSs that would also support enhanced fisheries data collection. A pilot program will help determine which systems and technologies are best suited to provide enhanced fishery-dependent data (e.g., location, effort, traps hauled, etc.).

C. Electronic Monitoring

The use of electronic monitoring (EM) technology is one promising option that could increase deterrence and improve enforcement targeting efforts. EM creates an opportunity to see the fishery and gear through video recordings, without enforcement officers physically boarding vessels at sea. Onboard camera systems could be installed on lobster fishery vessels to monitor trap configuration, gear, markings, and allocation.

While camera systems are not a perfect substitute for a physical boarding, and the types of violations that an EM system is able to detect are not all-inclusive, EM could fill a critical gap by monitoring activity onboard vessels. It can also assist enforcement of regulations relating to trap counts, tagging and marking requirements, gear configuration (i.e., use of weak links, escape vents, and ghost panels), and discards for stock assessment. Because EM records the gear being hauled onboard during normal fishing operations, it allows for increased compliance monitoring without the need for law enforcement to haul and inspect the gear, thereby minimizing any loss of fishing time and protecting fishing gear from being damaged or improperly reset during law enforcement inspection operations.

To explore the feasibility of this option, NOAA will initiate a pilot program involving the testing of various EM technology on offshore lobster vessels in Fiscal Year 2020.

D. Dedicated Law Enforcement Patrol Vessel

Presently, there is no dedicated or properly configured law enforcement vessel capable of patrolling the mid and far edges of Lobster Conservation Management Area 3. A capable patrol vessel would be a valuable tool in enforcing regulations by allowing for the

physical retrieval of gear for inspection and the direct observation of trap marking, allocation, and configuration.

While significant consideration has been given to acquiring a large dedicated and properly configured offshore lobster law enforcement vessel to be manned by OLE and federally deputized state law enforcement partners, this option was assessed to be impractical due to the varied labor and personnel regulations in each state and the amount of time required to be "on station" to make patrols effective and efficient. In addition, the skill set needed to safely operate an offshore vessel and pull and reset offshore lobster gear is considerably different than that required for the lighter near-shore gear in shallow waters – creating a significant officer safety issue.

As a second option, USCG has the ability to reach the entirety of Area 3, but also presently lacks the specialized equipment and trained personnel capable of safely retrieving and resetting lobster traps. In addition, in a "traditional" fisheries boarding by USCG, the fishing vessel and its crew, not the patrol vessel, retrieve their own gear so that it can be properly and safely hauled in and inspected. Configuring a USCG vessel to haul and reset commercial lobster gear would be a significant deviation from this current approach.

A third option is to use the skills and resources of the NOAA Commissioned Officer Corps aboard NOAA research vessels, under the direction of OLE, to haul and reset traps. While this option is still under review, the requirement and challenges to properly and safely haul and reset commercial offshore lobster gear are significant considerations.

E. Increased Observer Coverage

A final option under consideration is to increase observer coverage in the offshore lobster fleet to improve data available for lobster fishery management and enforcement. Currently, very few observer sea days are allocated for the lobster trap fishery in Area 3, leading to gaps in the amount of fishery-dependent data available for the lobster fishery. Furthermore, observer data is a useful means of checking self-reported data from VTRs and other sources. While it is important to maintain the clear distinction of the role of fishery observers as biologists collecting fishery, gear, protected resource data, etc., they currently collect information on fishing gear characteristics of fisheries where they are deployed.

Additional observer days would allow NOAA to gather this data rather than continue to rely on sporadic offshore sampling efforts by the industry through Federal grants and other funds.

Summary

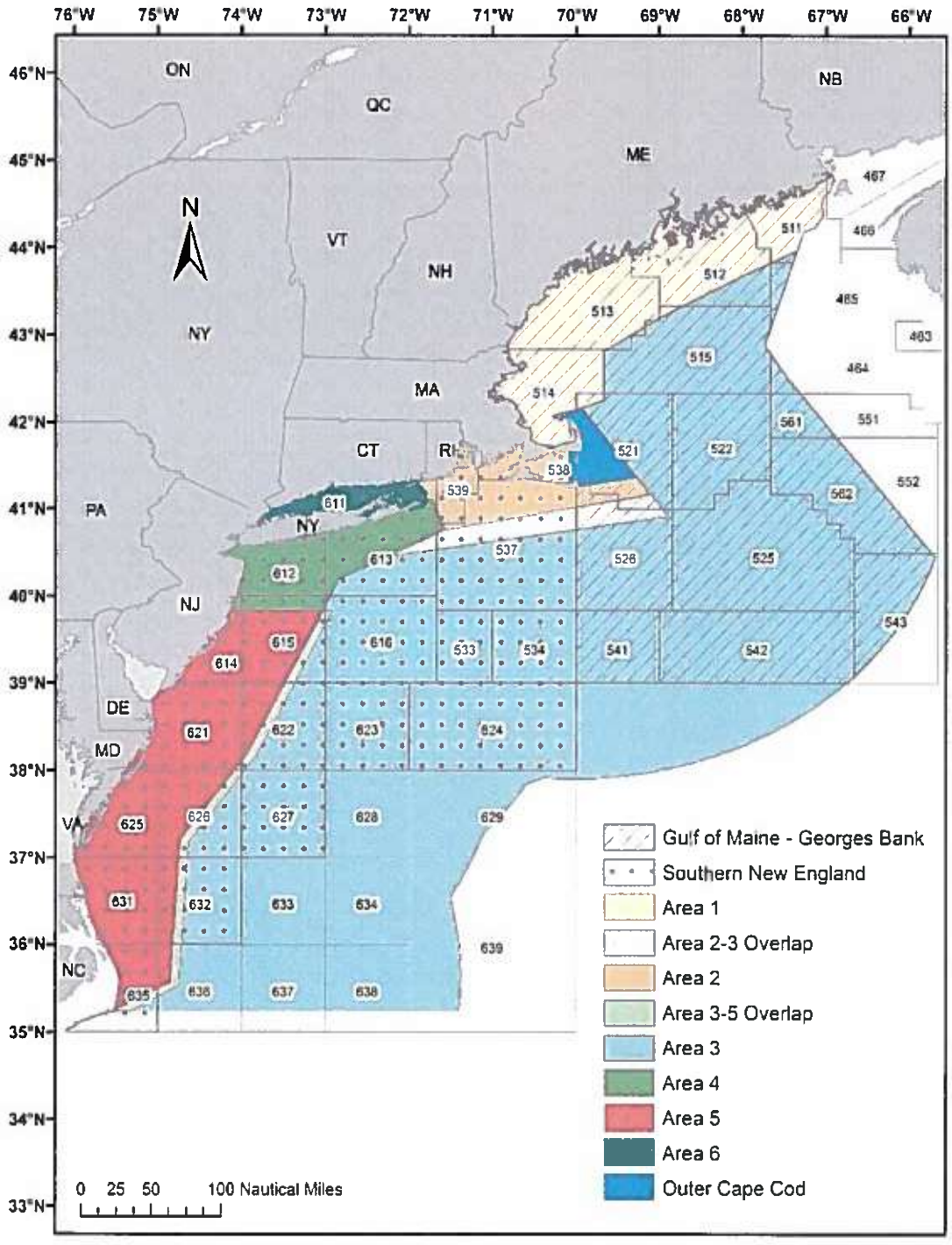
NOAA and its state and Federal partners have endeavored to identify ways in which offshore enforcement in the Federal lobster fishery can be enhanced.

The field evidence shows entanglement from vertical lines to be a significant contributor to recent North Atlantic right whale entanglements, which adds a sense of urgency to increased enforcement efforts, especially given the lack of reliable information regarding the potential undocumented number of traps and lines in far offshore waters.

The most viable enforcement measures under consideration include an expanded mandatory VTR requirement, a new VMS requirement, an EM pilot project, and increasing onboard observer coverage. Options for acquiring or configuring a vessel to provide a dedicated on-the-water law enforcement capability were also considered.

While all the options would increase current enforcement efforts, no single option is a complete solution. Rather, a combination of mutually reinforcing initiatives, such as VMS+EM with a "traditional" USCG at-sea boarding response to monitor fishing effort and compliance with lobster fishery regulations, would provide the most effective deterrent to those who seek to circumvent those regulations.

Appendix A: Map of Offshore Lobster Enforcement Areas



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Dear Ms. Starks,

On behalf of The Nature Conservancy (TNC) in Maine, thank you for the opportunity to **comment in favor of the action alternative (Option B) of the American lobster and Jonah crab draft addendums**, XXIX and IV respectively.

The Nature Conservancy is a nonprofit conservation organization dedicated to conserving the lands and waters on which all life depends. Guided by science, we create innovative, on-the- ground solutions to our world's toughest challenges so that nature and people can thrive together. Working in more than 70 countries, we use a collaborative approach that engages local communities, governments, the private sector, and other partners.

TNC believes that timely and accurate catch information is a critical component of successful and sustainable fisheries management programs. It provides scientists the data needed to develop accurate and reliable stock assessments, a critical aspect of sustainable fisheries management. As the draft addendum highlights, for several years the American Lobster Management Board has recognized the critical need for high-resolution spatial and temporal data to characterize effort in the federal American lobster and Jonah crab fisheries (Draft Addendum, pg. 1). The draft addendum recognizes that vessel tracking would 1) provide fine scale effort data to accurately apportion effort within the stock units; 2) provide finer scale resolution of trap locations for use in estimating risk reduction under the Atlantic Large Whale Take Reduction Plan; 3) provide necessary data on the American lobster and Jonah crab fishery, not currently available, in marine spatial planning conversations around offshore wind and marine protected areas; and 4) improve the efficiency and efficacy of offshore enforcement efforts. We agree these are all critical issues to address with implementing Addendums XXIX and IV. However, we want to highlight how critical the implementation of vessel tracking is for the stock assessments, and therefore sustainable management, of American lobster and Jonah crab.

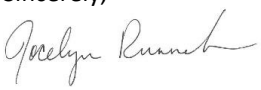
Currently, the American lobster stock assessment estimates fishing effort in a variety of ways depending on the data available. The 2020 American lobster peer reviewed stock assessment report states that: "the standard unit of fishing effort is difficult to define in the American lobster fishery, there is no linear relationship between the number of traps fished and fishing effort" (ASMFC, 2020, pg. 46). We believe this is a critical limitation to the American lobster stock assessment and the proposed vessel tracking approach is a very reasonable, and cost effective, approach to resolving this issue. Additionally, the effort data used, total numbers of licenses and trap limits, does not account for any changes in fishing effort over time because latent effort is included (ASMFC, 2020, pg. 3). The 2020 lobster stock assessment peer review panel highlighted the need to improve the estimates of total trap hauls by season and location to improve the understanding of changes to the fishery which can be paired with the documented changes in habitat suitability from the fisheries independent data sources (ASMFC, 2020 p. 3-4). We know climate change is impacting the American lobster stock, but we don't have a clear sense of how the fishery is responding to that change. This is going to be important for managers to understand as uncertainty from climate change increases with warming waters.

To date, there has not been a stock assessment for Jonah crab in the United States (ASMFC, 2021). "Landings of Jonah crab from U.S. waters have increased significantly over the last 20 years, quadrupling from an average of 4.8 million pounds per year during 1997-1999 to an average of 20.1 million pounds per year during 2017-2019" (ASMFC, 2021 pg. 22). However, we do not have a clear sense of stock status for this fishery. The Jonah crab pre-assessment workshop report indicated that Jonah crab fishing effort is not yet well characterized

and will be an important data need for the development of a stock assessment. There is essentially no data on the seasonal dynamics, fishing strategies, and socioeconomic aspects of the fishery (ASMFC, 2021 pg. 2). The proposed vessel tracking addendum will help develop a standardized and accurate approach to evaluating effort, provide an avenue for understanding the seasonal dynamics and socioeconomic aspects of the fishery by pairing effort data with available catch data, and will likely provide some insight on fishing strategy as well. We believe that vessel tracking will allow for a more robust stock assessment approach to be considered for this fishery.

We strongly encourage the American Lobster Management Board to pass Option B of the American lobster and Jonah crab draft addendums XXIX and IV to improve the stock assessment and management for these species. Thank you for considering our comments on the Addendum and please feel free to contact me directly if you would like to discuss in more detail.

Sincerely,



Jocelyn Runnebaum, PhD
Marine Scientist | The Nature Conservancy in Maine

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RE: American Lobster Draft Addendum XXIX

Email: comments@asmfc.org
Subject Line: Lobster Draft Addendum XXIX

We support the purpose of this action, which is to introduce electronic vessel monitoring to collect high resolution spatial and temporal effort data which will provide valuable and critically needed information to support stock assessments, appropriately address protected species interactions, improve marine spatial planning, and aid in offshore enforcement of the lobster and Jonah crab fisheries. The fact that this one technological improvement to collecting fishing information would then help inform management, science and conservation across atleast four important areas shows the potential value in this addendum.

We would request the ASMFC vote in favor of *Option B: Implement electronic tracking requirements for federally permitted lobster and Jonah crab vessels with commercial trap gear area permits*. Option B would improve the management of the fishery in the four following areas:

Stock Assessment
Presently as outlined in the addendum the stock units don't overlap with management areas. Tracking data for the fleet showing where the catch is happening would improve the science and long-term management of the fishery.

Protected Species
NOAA is currently giving the lobster fishery a ten-year time frame to significantly reduce risk to right whales by 98% and to reduce risk of entanglement to other large whale species. Entanglement in vertical lines is a moral and humane issue that the public and seafood consumers want fishery managers to solve. Presently the ALWTRT is relying heavily on models to calculate risk and the amount of risk reduction needed. The present Decision support tool made for use in the analysis is only as good as the data that is introduced so that it mirrors the reality of where fishing is happening and where whales are located.

Understanding the economic impact valuation of NOAA closures to lobster fisheries like those recently implemented under the NOAA whale rules is important. Throughout the process NOAA officials asked for information from the fishery and states. In the final rule, NOAA proposed a LMA1 clousure and suggested that 45 vessels would be impacted. Many within the lobster industry and State officials it would affect significantly more fishermen. Without finer scale data a clear sense of what the outcome would be was hard to understand. The data in this case would be of enormous value to understanding the trade offs and coming up with strong management.

Marine Spatial Planning

The addendum describes how Aquaculture, Offshore Wind, MPA's, etc. are all areas where lobster fishery may be competing for area and habitat. The recent NEFMC Omnibus Habitat Coral amendment proved extremely challenging given the lack of precise data hard to determine where fishing was taking place. All of these issues will need to understand where fishing is happening over time and show the fluid and mobile nature of the fishery.

Offshore Enforcement

Clearly law enforcement has a challenge in needing to patrol such a vast ocean. To know where the highest and densest fishing takes place and temporal peaks will improve the work of law enforcement.

For your consideration,

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January 24, 2022

Caitlin Starks
Atlantic States Marine Fisheries Commission
050 N. Highland St. Suite 200A-N
Lobster Arlington, VA 22201

Via Email: comments@asmfc.org

RE: Draft Addendum XXIX

Dear Ms. Starks,

The Massachusetts Lobstermen's Association submits this letter of comment on behalf of its' 1800 members on the; Atlantic States Marine Fisheries Commission on DRAFT ADDENDUM XXIX TO AMENDMENT 3 TO THE AMERICAN LOBSTER FISHERY MANAGEMENT PLAN & DRAFT ADDENDUM IV TO THE JONAH CRAB FISHERY MANAGEMENT PLAN (Addendum XXIX) Electronic on Vessel Tracking for Federal Permit Holders.

While the objective of Addendum XXIX is to give a high resolution and temporal image on effort data to better depict what the effort is of the commercial lobster industry to better serve new users. The MLA does not support the implementation of vessel tracking systems for the commercial lobster industry as a management measure to better serve stock assessments, protected species interactions, marine spatial planning, and offshore enforcement. The MLA is deeply active in all of these areas and is wary that vessel tracking will benefit the commercial lobstermen and be anything but another expense.

Established in 1963, the MLA is a member-driven organization that accepts and supports the interdependence of species conservation and the members' collective economic interests. The membership is comprised of fishermen from Maryland to Canada and encompasses a wide variety of gear types from fixed gear and mobile gear alike. The MLA continues to work conscientiously through the management process with the Division of Marine Fisheries, Atlantic States Marine Fisheries, Atlantic Large Whale Take Reduction Team, and the New England Fisheries Management Council to ensure the continued sustainability and profitability of the resources in which our commercial fishermen are engaged in.

The commercial lobstermen have been reporting their locations for many years now, and this data ought to be used as it is available today and free. The commercial lobster industry complied to the implementation of the 10-minute squares to give even a better depiction of the commercial lobster fisheries spatial foot-print and now, that is not good enough. The commercial lobster industry is continually being "asked" to do more, and at their expense, for the betterment of stock assessments, protected species interactions, marine spatial planning, and offshore enforcement without any compensation or appreciation. The MLA does not support any more and unnecessary financial burden to be placed on the commercial lobstermen.

During the recent public hearings on Addendum XXIX there were several comments on the use of these vessel tracking systems and who will have access to the data. As we are watching the industrialization of the Exclusive Economic Zone (EEZ), whether is it aquaculture or offshore wind, the MLA is concerned that this data will paint the commercial lobster industry into a corner, a box, and or right off the water. Zoning the ocean into user groups is being foreshadowed here, and the MLA cannot support the implementation of vessel tracking.

For the reasons noted above, the Massachusetts Lobstermen's Association **SUPPORTS Option A: Status quo** Under this option no changes to current management and monitoring requirements for lobster and Jonah crab would be implemented.

Thank you for your thoughtful deliberation and consideration on our comments.

Sincerely,
Beth Casoni
MLA, Executive Director

Maine Lobstering Union

IMLU Local 207: By Lobstermen, for Lobstermen

January 31, 2022

Caitlin Starks
Atlantic States Marine Fisheries Commission
FMP Coordinator
1050 N Highland St.
Suite 200A-N
Arlington, VA 22201

Electronic Comment Submission

Re: Comments Relating to Lobster Draft Addendum XXIX/ Jonah Crab Draft Addendum IV Electronic vessel tracking in the federal lobster and Jonah crab fisheries.

Dear Ms. Starks:

Thank you for the opportunity to comment on the electronic vessel tracking in the federal lobster and crab fisheries. On behalf of the Maine licensed commercial lobster and crab fishing license holders who are members of, and represented by, the Maine Lobstering Union (Local 207 of the International Association of Machinists and Aerospace Workers (IAMAW)), we write to express our concerns with Draft Addendum XXIX and IV. This is another reach into the wallets of hard-working fishermen at a time when they can least afford it. This data will not be used for "Stock Assessments, or Fishery interactions with protected resources" this data will be used for 2 things, Siting Offshore Wind and Enforcement. Maine is transitioning to mandatory reporting; why are you not even allowing the data to come in before we are asking for more information? This is a violation of our privacy at best, and something to take away our fishing grounds at worst.

We firmly stand behind STATUS QUO, no change.

Thank you,

The Maine Lobstering Union
Virginia Olsen
Local 207

150 Bar Harbor Rd, Trenton, ME 04605
(207) 240-0556

Citizens Opposing Active Sonar Threats (COAST)
536 Point Road
Hancock, ME 04640

January 30, 2022

Caitlin Starks, FMP Coordinator
1050 N. Highland St. Suite 200A-N
Arlington, VA 22201

I am writing on behalf of Citizens Opposing Active Sonar Threats (COAST) to provide comments on Lobster Draft Addendum XXIX.

COAST fully supports Option B for several reasons.

Requiring electronic vessel tracking of federal permit holders will allow for a more precise understanding of when and where fishing activity is actually taking place, meaning managers and law enforcement can better do their jobs, not having to rely on ballpark information.

It will make it easier for enforcement to locate gear, including non-compliant gear, and for managers to help insure a healthy lobster stock.

Ensuring a healthy lobster stock will benefit not only lobsters and the ecosystems they are part of, but also lobster fishermen.

In addition, and very importantly, electronic tracking will better enable managers to minimize co-occurrence of persistent vertical lines and whales, helping reduce entanglement risk and all the suffering that entanglements cause, for the critically endangered North Atlantic right whale, as well as for other whales and marine life.

This will benefit not only the whales, but also our oceans and all those who depend upon them, including lobsters and fishermen, and all the rest of us.

During the public hearings on this matter, it became clear that one of the reasons some fishermen oppose this requirement is due to the fact that they would be responsible for bearing the full costs of this electronic monitoring. We have seen a similar response from fishermen with regard to

the recent federal regulations aimed at reducing right whale entanglements. If fishermen were given financial assistance by federal and state governments in making the required gear changes, there would no doubt be far less resistance, and more willing compliance with those regulations. COAST believes that if fishermen were financially assisted by federal and state governments with purchasing and operating costs for the proposed electronic tracking, the same would hold true.

Lastly, COAST believes electronic tracking should go into effect in 2023. The earlier this more precise data can be collected, the sooner it can be put to good use.

Thank you for considering our comments.

Sincerely,

Russell Wray
Citizens Opposing Active Sonar Threats (COAST)

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Caitlin Starks
Fishery Management Plan Coordinator, American lobster, Jonah crab
Atlantic States Marine Fisheries Commission
1050 N. Highland St. Suite 200A-N
Arlington, VA 22201

Via electronic mail to *comments@asmfc.org* subject line: Lobster Draft Addendum XXIX

Re: Comments on Atlantic States Marine Fisheries Commission Addendum XXIX

Ms. Starks:

Oceana is the largest international ocean conservation organization solely focused on protecting the world's oceans, with over 1.2 million members and supporters worldwide, including 340,000 members and supporters in the U.S. Atlantic states. Oceana has been engaged in the conservation and management of America's fisheries for nearly twenty years with a particular longstanding interest in reducing bycatch and improving the monitoring and transparency of America's fisheries. More recently Oceana has collaborated with our offices in Canada to campaign internationally to lower the instances of vessel strikes and reduce entanglements of critically endangered North Atlantic right whales in fixed gear fisheries in both the U.S. and Canada.

Throughout the recent Risk Reduction Rule development and rulemaking, it was apparent that the U.S. American lobster and Jonah crab fisheries suffer from a lack of high-quality spatial data to track effort and catch trends across the fishery throughout the year. Currently available low-resolution, fishery-dependent data hampers analysis of management options, slows management responses and leads to imprecise management. High-quality spatial data is critically important in crafting focused management measures that avoid entanglement while mitigating and minimizing the impacts on the fisheries.

Because of this clear need, Oceana fully supports the efforts of the Atlantic States Marine Fisheries Commission to require electronic vessel tracking for Federal permit holders in addendum XXIX to the lobster fishery management plan and addendum IV to the Jonah crab fishery management plan. Specifically, Oceana supports option A: (i)mplement electronic tracking requirements for federally-permitted lobster and Jonah crab vessels with commercial

trap gear area permits. This action is a strong first step to bridging data gaps in these fisheries and should be approved by the Commission as soon as possible. Additionally, Oceana recommends the Commission use the decision-making process at final approval of this action to commit to a follow-on action to ensure all vessels in these fisheries carry electronic tracking devices by a date certain.

Oceana offers the following comments on Section 3.1 of the addenda relative to the requirements for electronic tracking devices that will satisfy the needs of the fisheries.

Recommendation for Electronic Monitoring Requirements in Addendum

The draft addendum section 3.1 specifies a series of proposed requirements that electronic monitoring systems and vendors will need to satisfy to be approved for use in the affected fisheries.[1]

Section 3.1 also describes the general approval, certification and administrative processes that will support this program going forward. However, these general guidelines are unlikely to be enough to establish this urgently needed program in a timely manner. Additionally, it is unclear whether any existing systems meet these criteria or whether vendors are willing and able to create cost-effective technologies that meet these requirements.

In light of that uncertainty and the pressing need for effective monitoring of these fisheries, Oceana suggests that the Commission seriously consider adding an alternative adopting an existing technology to address the purpose and need of this action. Oceana recommends **requiring Class A Automatic Identification System (AIS) carriage and use on all federally permitted vessels in the American lobster and Jonah crab fisheries.**

Class A AIS is a cost-effective, existing technology that is used in marine industries and fisheries around the world. AIS provides high-quality spatial information that is transparent, presented in a universal format compatible with most data collection, storage and analysis programs, and meets most of the requirements set forth in Section 3.1. Additionally, AIS is already widely used in fisheries in the Northeast region, has been required for all U.S. fishing vessels over 65 feet in length since 2015, and has the added benefit of significantly improving safety and maritime domain awareness in the increasingly busy waters of the Northeast U.S.

Since 2015 all fishing vessels over 65 feet in length have been required to carry at least a Class B AIS device while operating in the navigable waters of the U.S., interpreted to be 12 nautical miles from shore by various agencies.[2] Therefore, many vessels in the affected fisheries already carry the lower quality AIS device and many likely carry Class A devices.

[1] Addendum Section 3.1 Table 2 (attached)

[2] Final Rule *Vessel Requirements for Notices of Arrival and Departure, and Automatic Identification System* 33 CFR § 164.46 (b)(2)(i) (80 Fed. Reg 5282 January 30, 2015)

Recent research suggests that even when not required to do so, close to 50% of fishing vessels in the NE region operate their AIS at sea beyond 12 nm.[3] Whether for safety, documentation of compliance, or documentation of fishing history, this demonstrates that AIS is not a burden to fishing and the benefits outweigh any concerns about confidentiality or fishing secrets.

AIS Meets Addendum Criteria

The Commission should carefully consider AIS carriage requirements relative to the requirements included in the draft addendum. Apart from the confidentiality and vendor requirements, AIS meets or exceeds the requirements with a universal technology that is used around the world.

Data Collection-

AIS signals are intended to help vessels identify one another and avoid at-sea collisions. AIS transponders come in three classes, A, B, and B+, which determine how frequently the vessel transmits a signal and how strong that signal is. Each of these classes report the information specified in the addendum action about the vessel's identity, speed, bearing, location, and time with an effective ping rate of 2-30 seconds. Class A transponders are the most robust and transmit every 2-5 seconds with the strongest signal. Class B devices broadcast a weaker signal at a fixed interval of 30 seconds, and Class B+ emit a medium strength signal with transmission intervals of 5-30 seconds.

Because of the increased signal strength, reporting frequency, and minimal cost difference, Class A devices should be required in the addendum. Coupled with machine learning capabilities of Global Fishing Watch, which has been designed to use this information to capture the behaviors and compliance of a variety of fisheries and gear types around the world, AIS devices will provide ample information to address the needs of these fisheries.

Data Utility-

AIS data has been used to support and inform assessment and management of fisheries around the world for years. AIS is increasing in popularity and power each year as more analytical tools are built based on AIS data and capabilities. Dozens of research projects around the world have harnessed the power of AIS and analytical tools like Global Fishing Watch to evaluate and manage fisheries issues.[4]

Durability and Interoperability

[3] Lynham, John. 2022. Fishing activity before closure, during closure, and after reopening of the Northeast Canyons and Seamounts Marine National Monument. Scientific Reports 12:917.

[4] *See* Global Fishing Watch Publications (https://globalfishingwatch.org/publications)

AIS units have been used in marine industrial settings for many years and have been designed specifically for these purposes. A wide range of technologies exist to collect, manage and share AIS data with shoreside users. Compatibility and interoperability between existing application programming interface (API) and data management systems is possible and may require less innovation and modification than vendor adaptation for this purpose.

Confidentiality of personally identifying information

Because AIS is designed explicitly to be shared among users to identify one another at sea and prevent collisions, the data will never be confidential. However, as the U.S. Coast Guard advised in its 2015 AIS rulemaking, concerns about divulging hot spots are outweighed by other factors:

> "(e)ven if analysis of AIS data would somehow attract vessels to the same spot, this situation would not supersede the importance of AIS in providing fishing vessels and other operators with situational awareness to help safely navigate while in close proximity to other vessels.[5]"

The pressing need for high quality spatial information to manage issues such as North Atlantic right whale entanglements supersede the concern for retaining confidentiality. Furthermore, it should be noted that fixed gear fisheries currently have little to no confidentiality since each buoy is individually identifiable to the vessel or permitholder and AIS data platforms only show where fishing activity has occurred *in the past*, but they do not predict where fish are currently located or where they might move to in the future.

Cost-effective-

Because many vessels are already equipped with AIS devices, action by the Atlantic States Marine Fisheries Commission to require use of the device while at-sea will likely create minimal costs for each vessel.

If, as we suggest, the Commission requires higher-quality Class A devices, this will still present a minimal one-time cost for each vessel between $700 - $2,600. Regardless of device type, both Class B and Class A AIS are likely to be significantly more cost-effective when compared to alternatives provided by third party providers that assess fees for both equipment purchases and ongoing use of the services.

Safety of Life at Sea-

Finally, the Commission should not underestimate the value of AIS for its original intended purpose of avoiding collisions at sea. Collisions between fishing vessels and other vessels,

[5] Final Rule Vessel Requirements for Notices of Arrival and Departure, and Automatic Identification System 33 CFR § 164.46 (b)(2)(i) (80 Fed. Reg 5282 January 30, 2015)

including large seagoing ships, are not uncommon and the waters of the Northeast are busier every year with vessel traffic operating in all conditions. Requiring AIS carriage and operation by all fishing vessels will improve visibility of the boats and provide additional safeguards against collisions.

Conclusion-

Oceana thanks the Commission for its work to improve the tools that are available to inform assessment and management of the American lobster and Jonah crab fisheries. Harnessing technology will improve management and fill the data gaps that have impeded effective management in recent years. The Commission should approve this action with a clear plan to have data collected on-the-water as soon as possible. The requirements described in the action are a step in the right direction, but the Commission should take the additional step to require vessels to use existing, cost-effective, and powerful Class A AIS. AIS is here now. It works and is supported by ample shoreside tools and should be adopted by the Commission for all vessels in these fisheries.

Thank you for considering these comments,

Gib Brogan

Oceana

Washington, DC

3.1.1 Required Components and Minimum Technological Standards

Addendum Table 2. Required criteria for approval of vessel tracking devices and vendors

- Collection of location data at a minimum rate of one ping per minute for at least 90% of the fishing trip
- Data events must contain device's current datetime, latitude, longitude, device and vessel identifier
- Minimum accuracy of 100 m (328.1 ft) accuracy and position fix precision to the decimal minute hundredths
- Ruggedness specifications allowing function in the marine environment
- Ability to PUSH location data to the ACCSP trip locations API
- Vendor customer service requirements
- Vendor must maintain the confidentiality of personally identifying information and other protected data in accordance with federal law[6]

[6] Addendum Section 3.1 Tracker Specifications and Approval (http://www.asmfc.org/files/PublicInput/LobsterDraftAdd_XXIX_JonahCrabDraftAdd_IV_PublicComment_Dec2021.pdf)

Automatic Identification System

AIS is an automatic vessel tracking system that can be used to prevent illegal fishing, provide transparency at sea, and enhance traceability of seafood.

What is AIS?

- Automatic Identification System (AIS) is a vessel tracking system that transmits a vessel's location, behavior, and identity. This includes the name, unique vessel identifier, callsign, size, flag state, and type of the vessel, along with its speed, direction, and geographical position.
- AIS was developed to increase maritime safety, reduce vessel collisions, and enhance awareness of vessel locations at sea. It functions as the "eyes of the boat," enabling vessels to "see" each other's location and activity – of critical importance at night and in hazardous conditions.
- With tens of thousands of ships operating daily in the U.S.'s waters, AIS technology is a vital tool in maintaining maritime domain awareness. AIS sends identity information as well as position and transit information, telling the Coast Guard who is in U.S. waters, where they've been, and which other ships they may have met up with.

Why is AIS critical?

- Commercial fishing has the highest fatality rate of any occupation, and its workers are over 30 times more likely to die on the job than the average. Using AIS is one way to improve safety in an incredibly dangerous profession.
- AIS is also invaluable for transparency and monitoring, as it allows fisheries managers and authorities to detect suspicious and illegal behavior. NGOs such as Global Fishing Watch use AIS data collected from satellites to map fishing activities across the world's oceans, so fisheries managers and others can use this publicly available information to track compliance with regulations and make informed decisions regarding fisheries.
- At an Oceana roundtable event focused on Illegal, Unreported and Unregulated (IUU) fishing, former Secretary of the Navy Ray Mabus said, "When [IUU boats] 'go dark,' they become a maritime danger to anyone in the area, and that includes our Navy — first because of the risk of collisions at sea, but also because you can't tell what they're up to. It could be IUU, but it could also be piracy, or human trafficking, or weapons smuggling, or almost anything."
- The transparency of knowing where vessels are, and what they are doing, brings illegal behavior to light and discourages environmentally, economically, and socially harmful fishing practices. This can include anything from foreign vessels illegally entering the United States' Exclusive Economic Zone and stealing fish, to fishing fleets pillaging endangered species in marine protected areas.

How does AIS work?

- The AIS device consists of a very high frequency (VHF) radio to broadcast the vessel's location and identity and a GPS receiver to detect incoming signals. These signals can be picked up by neighboring vessels, land-based receivers, and satellites.
- AIS transponders come in three classes, A, B, and B+, which determine how frequently the vessel transmits a signal and how strong that signal is. Class A transponders are the most robust, Class B devices broadcast a weaker signal at a fixed interval, and Class B+ emit a medium strength signal.

What are the legal requirements?

- The United Nations Convention on the Law of the Sea requires Class A AIS on all large cargo vessels (over 500 tons) and all passenger vessels regardless of size.
- The United States requires all fishing vessels over 65 feet to transmit AIS while operating in U.S. navigable waters, defined by The Coast Guard as the territorial seas of the U.S., which extend 12 nautical miles from shore.

What are the limitations?

- The effectiveness of AIS for safety and transparency is stunted by loose legal requirements; only U.S. vessels over 65 feet are required to carry AIS; 85% of fishing vessels are smaller than this.
- U.S. non-passenger vessels are only obligated to transmit AIS within "U.S. navigable waters," which are defined as waters within 12 nautical miles of shore.
- As a result, just 15% of the US commercial fishing vessels are required to broadcast AIS and only two-thirds of these vessels are visible on Global Fishing Watch.
- Vessel operators can tamper with their AIS to falsify their location or identity – a practice called "spoofing" – or turn off their AIS altogether. These behaviors can protect a vessel by concealing it from pirates or competitors but can also be used to mask illegal activity from the authorities and public.
- Class A transponders transmit position data every 2-5 seconds while Class B+ transmits every 5-30 seconds. Class B transponders are the weakest devices transmitting every 30 seconds. Many vessels equipped with AIS use the weaker Class B or B+ transponders, substantially reducing the safety and transparency benefits.
- Signal reception changes by geography. In the high seas, vessels are sparsely distributed so most signals are successfully transmitted and received. However, in areas of high vessel density, such as near port or in the South China Sea, the cloud of signals causes interference, and only a small fraction of messages reach their destination.
- Some fishermen fear losing their "secret" fishing spots. But most commercial fishing vessels are already using sophisticated technology to find and catch fish such as helicopters, satellite data, and fish-finding forecasts. Platforms like Global Fishing Watch use AIS to show where fishing activity has occurred in the past, but they do not predict where fish are currently located or where they might move to in the future.

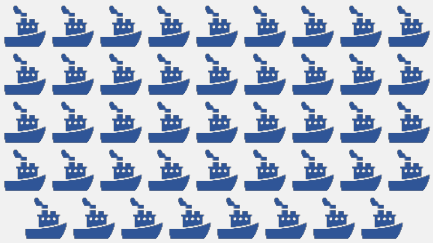
What can be done to improve transparency at sea?

- The United States should require commercial fishing vessels over 49 ft (15 m) to carry and continually broadcast AIS. The European Union already requires AIS for their fishing vessels 15m and greater.
- Regional fisheries management organizations can require AIS usage by all commercial fishing vessels in their territory.
- Fishing vessel owners can be required to give notice when and for what reason they stop transmitting AIS.
- Governments should transition to requiring Class A transponders for stronger and more reliable signal strength.

How does AIS compare to VMS?

- Some fishing vessels are required to carry VMS (vessel monitoring system) technology, which is also used to track vessels via satellite. VMS was designed for fisheries monitoring and provides myriad benefits: consistent detection by satellites, protection from spoofing, and more reliable signal transmission.
- However, in the U.S., VMS is required only on certain types of fishing vessels. Only 2,000 U.S. vessels are equipped with VMS vs. 44,000 with AIS. VMS data are proprietary and only accessible by the government to which the vessel is registered.
- The VMS device costs approximately $4,000 and can incur thousands more in fees throughout the vessel's lifetime. AIS devices cost between $700 - $2,600 and have no associated fees.
- While VMS is an essential monitoring tool, the high temporal resolution of AIS (which transmits signals every few seconds versus VMS's as little as once per hour) along with its lower cost, near real-time reporting, public availability, and mandatory carriage render it invaluable.
- AIS and VMS are two distinct systems that work best together.

By utilizing both VMS and AIS systems, the benefits are combined. With the high resolution (more signals per day) of AIS, in conjunction with the full coverage of VMS, monitoring is substantially improved.

	Automatic Identification System (AIS)	*Vessel Monitoring System (VMS)*
Publicly available data?	✓	✗
Potential pings per hour	1,800	1
Signals increase with vessel speed?	✓	✗
Required on all vessels greater than 65ft?	✓	✗
Number of vessels carrying (x1000)		
Tamper-proof?	✗	✓
Typical cost	$	$ $ $

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January 31, 2022

Ms. Caitlin Starks, FMP Coordinator
Atlantic States Marine Fisheries Commission
1050 North Highland Street, Suite 200 A-N
Arlington, Virginia 22201

Re: American Lobster Draft Addendum XXIX and Jonah Crab Draft Addendum IV

Dear Ms. Starks:

We are writing on behalf of The Pew Charitable Trusts to support the Atlantic States Marine Fisheries Commission's (ASMFC) efforts to implement vessel tracking to improve data on fishing effort in the American lobster and Jonah crab fisheries through Addendum XXIX to Amendment 3 to the American Lobster Fishery Management Plan and Addendum IV to the Jonah Crab Fishery Management Plan (Addendum XXIX/IV). If approved by the Lobster Management Board, Addendum XXIX/IV would require all American lobster and Jonah crab fishing vessels with federal commercial trap/pot permits to use an approved electronic vessel tracking device that collects and transmits fine-scale spatial data to determine when and where fishing is occurring. Any federally permitted vessel would be prohibited from landing American lobster and Jonah crab without an approved electronic tracking device. Addendum XXIX/IV would require that approved devices remain on board and be powered on when the vessel is in the water, unless authorized to power down by the principal port state.[1]

To be approved for use in the American lobster fishery and Jonah crab fishery (lobster fishery), electronic vessel tracking devices must meet certain criteria and specifications. The device must collect vessel location information at a rate of one ping per minute for at least 90 percent of the trip with high accuracy and precision to differentiate fishing activity from transient activity, and to allow for the estimation of number of traps per trawl.[2] This information would better inform future fishery stocks assessments, and improve marine mammal co-occurrence and risk-reduction models.[3] Current harvest regulations only require trip-level reporting and are limited to reporting location by federal statistical areas and state management areas.[4] Higher resolution spatial and temporal data are required for effective management and enforcement of the lobster fishery.

[1] ASMFC, December 2021. Draft Addendum XXIX to Amendment 3 to the American Lobster Fishery Management Plan and Addendum IV to the Jonah Crab Fishery Management Plan. P. 6.
[2] ASMFC, December 2021. Draft Addendum XXIX to Amendment 3 to the American Lobster Fishery Management Plan and Addendum IV to the Jonah Crab Fishery Management Plan. P. 8.
[3] ASMFC, December 2021. Draft Addendum XXIX to Amendment 3 to the American Lobster Fishery Management Plan and Addendum IV to the Jonah Crab Fishery Management Plan. P. 3-4.
[4] ASMFC, December 2021. Draft Addendum XXIX to Amendment 3 to the American Lobster Fishery Management Plan and Addendum IV to the Jonah Crab Fishery Management Plan. P. 1-2.

Pew's primary reason for supporting Addendum XXIX/IV is the critical need for high-resolution spatial effort data to show where and when the lobster fishery effort occurs to determine where and when vertical buoy lines from trap/pot gear interacts with North Atlantic right whales. To meet the mandates of the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA), the lobster fishery must reduce risk of entanglement interactions that cause mortality and serious injury (MS/I) to right whales. Addendum XXIX/IV would ensure updated and enhanced spatial effort data to improve risk reduction models. Recent information shows that the offshore lobster fishery is growing rapidly, making the need to understand the footprint of this sector of the fishery especially imperative.[5] Fine-scale information on where and when trap/pot lobster fishing occurs is also essential to improving lobster fishery management and enforcement. We support option B and urge the board and commission to approve and implement this option without delay.

Specifically, the ASMFC should:

1) **Approve management option B of Addendum XXIX/IV requiring electronic vessel tracking for federally permitted American lobster and Jonah crab vessels with commercial trap/pot gear permits, with implementation beginning no later than 2023; and**

2) **Follow this action with an addendum that would improve harvest reporting in state waters, exploring options for electronic tracking for all state-permitted American lobster and Jonah crab vessels.**

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A. Background:

The situation for the North Atlantic right whale is dire. In July, 2020 the International Union for the Conservation of Nature elevated their status from "endangered" to "critically endangered" because they are "facing an extremely high risk of extinction in the wild."[6] Experts have determined that the 2020 estimate for the North Atlantic right whale population was approximately 336 whales, an 8 percent decline over the 2019 estimate.[7] There were only about 88 breeding females remaining by September 2021, the most crucial demographic for reproduction.[8] National Marine Fisheries Service (NMFS) has estimated that between 2011 and 2019 approximately 218 North Atlantic right whales died from entanglements and vessel strikes,

[5] ASMFC, December 2021. Draft Addendum XXIX to Amendment 3 to the American Lobster Fishery Management Plan and Addendum IV to the Jonah Crab Fishery Management Plan. P. 5.
[6] IUCN Red List Categories and Criteria. Version 3.1, p. 15.
[7] Pettis, et. al. (2022). North Atlantic Right Whale Consortium 2021 Annual Report Card. ("2021 Annual Report Card") p. 3.
[8] Pettis, et. al. (2022). North Atlantic Right Whale Consortium 2021 Annual Report Card. ("2021 Annual Report Card") p. 5.

"a rate of roughly 24 right whale deaths per year."[9] Since 2017, there have been 34 *known* mortalities and 16 *known* serious injuries in the U.S. and Canada, totaling 50 *known* mortalities and serious injuries.[10] Of those 50 M/SIs, all determinable causes were anthropogenic (with the exception of one perinatal mortality), with 13 due to vessel strikes and 23 due to entanglements in fishing gear.[11] The true M/SI toll is considerably higher. A recent scientific paper co-authored by the Northeast Fisheries Sciences Center's leading right whale population biologist concluded that from 2010 to 2017, only 29 percent of right whale mortalities were detected, and that "cryptic [i.e., unobserved] deaths due to entanglements significantly outnumbers cryptic deaths from vessel collisions or other causes."[12] All known deaths to right whales (with the exception of one perinatal death) are the result of entanglement in fishing gear or vessel strikes,[13] and entanglement in commercial fixed fishing gear is the greatest threat to the species.[14] If mitigation efforts are not implemented, human activities will cause an "inhumane and certain extinction of this species in the all-too near future."[15]

In addition to these lethal impacts, sub-lethal impacts to right whales caused by entanglement in fishing gear are also contributing to population decline and the right whale's trajectory towards extinction. Scientists estimate that at least 85 percent of North Atlantic right whales have scars showing they have been entangled at least once,[16] 59 percent have been entangled more than once,[17] and many have been entangled three or more times.[18] Chronic and systematic entanglements that don't lead to immediate or even protracted mortality can still have sub-lethal impacts on the health of individual right whales, reducing their ability to eat, breed, and produce young.[19] These sub-lethal impacts from entanglement contribute to poor body condition and shorter and smaller whales, leading to lower birth rates and higher risk of subsequent lethal entanglements.[20] Poor overall health of right whales is reducing survival rate, undermining reproduction, reducing calving intervals, and ultimately plays a crucial role in the population

[9] NMFS October 26, 2020. Statement on preliminary January 2019 North Atlantic right whale population estimates.
[10] NOAA Fisheries, 2017-2022 North Atlantic right whale unusual mortality event.
[11] NOAA Fisheries, 2017-2022 North Atlantic right whale unusual mortality event.
[12] Id.
[13] Sharp, et. al. (2019); NOAA Fisheries, 2017-2022 North Atlantic right whale unusual mortality event. (A single perinatal mortality was noted in 2020).
[14] NOAA Fisheries, 2017-2022 North Atlantic right whale unusual mortality event.
[15] Id.
[16] NOAA. Species directory. North Atlantic right whale.
[17] 2012. Knowlton, et. al. Monitoring North Atlantic right whale *Eubalaena glacialis* entanglement rates: a 30 yr retrospective. P. 293.
[18] 2012. Knowlton, et. al. Monitoring North Atlantic right whale *Eubalaena glacialis* entanglement rates: a 30 yr retrospective. P. 297.
[19] Anderson Cabot Center for Ocean Life. New England Aquarium. Right Whale Facts. If whales are successfully disentangled, does the entanglement still have negative effects?
[20] Id.

decline.[21] Since 2010, calving rates have dropped by nearly 40 percent,[22] and between 2008 and 2018 female right whales expanded their average breeding interval from 4 years to 10 years between calves.[23] It is now clear that entanglements are not simply preventing the species from recovering, they are actively causing extinction of the North Atlantic right whale.

B. Why electronic vessel tracking matters to North Atlantic right whale protection:

There are two main reasons why electronic vessel tracking in the lobster fishery is essential to implementing effective protections for right whales. First, the ability to a determine how, when, and where to implement management measures to reduce risk of entanglement to North Atlantic right whales in trap/pot gear depends entirely on the quality and accuracy of the data and models that demonstrate and predict co-occurrence of right whales and trap/pot gear.[24] Second, enforcement of measures aimed to protect right whales will be greatly enhanced by electronic vessel tracking.[25]

1. Electronic vessel tracking would significantly improve scientific models used to determine co-occurrence of vertical lines associated with trap/pot gear in the American lobster and Jonah crab fisheries and North Atlantic right whales:

NMFS recently published regulations that amend the Atlantic Large Whale Take Reduction Plan (ALWTRP) and aim to reduce risk of entanglements leading to mortality of and serious injury to North Atlantic right whales in lobster trap/pot gear, in accordance with the requirements of the MMPA and the ESA. The American lobster and Jonah crab fisheries are responsible for 95 percent of vertical buoy lines regulated by the ALWTRP along the Atlantic coast.[26] The latest round of regulations claim to reduce entanglement risk by 67 percent, in part by limiting interactions between right whales and vertical lines in the lobster fishery.[27] The management measures and their ability to reduce interactions and reduce risk, are based on a Risk Reduction Tool (also known as Decision Support Tool) that attempts to quantify co-occurrence of American lobster and Jonah crab trap/pot gear and right whales. The co-occurrence models are generated using right whale sightings and acoustic data and the American lobster and Jonah crab

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[21] 2020. Christiansen, et. al. Population comparison of right whale body condition reveals poor state of the North Atlantic right whale. Mar. Ecol. Prog. Ser. Vol. 640: 1–16

[22] 2016. Kraus, et al. Recent Scientific Publications cast doubt on North Atlantic right whale future. *Front. Mar. Sci*. 3:137.

[23] 2018 Pettis., et. al. North Atlantic right whale Report Card. p. 5.

[24] April 20, 2019, TRT Meeting Risk Reduction Tool PPT, and ASMFC, December 2021. Draft Addendum XXIX to Amendment 3 to the American Lobster Fishery Management Plan and Addendum IV to the Jonah Crab Fishery Management Plan. P. 4-5.

[25] ASMFC, December 2021. Draft Addendum XXIX to Amendment 3 to the American Lobster Fishery Management Plan and Addendum IV to the Jonah Crab Fishery Management Plan. P. 5.

[26] Taking of Marine Mammals Incidental to Commercial Fishing Operations; Atlantic Large Whale Take Reduction Plan Regulations; Atlantic Coastal Fisheries Cooperative Management Act Provisions; American Lobster Fishery, Proposed Rule. 85 Fed. Reg. 86,878 (December 31, 2020).

[27] 86 Fed. Reg, 51970, 51988, 51996.

harvester reporting data.[28] Thus the effectiveness of these management measures at reducing interactions between right whales and trap/pot gear is directly related to the accuracy and comprehensiveness of the data on which they are based.

Efforts to quantify where and when whales congregate is difficult to acquire and varies with climatic changes and right whale prey distribution shifts. Despite those challenges, a commitment to understanding North Atlantic right whale's range and distribution has resulted in the data both increasing in quantity and improving in quality. The counterpart to this information is a quantification of when and where the American lobster fishery is using trap/pot gear, and a clear understanding of the vertical line footprint of the fishery. To date, resistance in the fishery, particularly in Maine where the majority of the lobster fishery is located, has prevented a clear picture of where and when trap/pot fishing and vertical lines occur. Daily or weekly vessel trip reports are required in nearly all federal fisheries except the lobster fishery to help ensure effective monitoring and sustainable management of fisheries and protected resources.[29] Current spatial information of effort in the lobster fishery is incredibly coarse as it is limited to NOAA statistical areas and state management areas, giving NMFS (and ASMFC) minimal information about when and where effort is occurring in the lobster fishery.[30] Addendum XXIX/IV would require that 100 percent of federally-permitted commercial American lobster and Jonah crab boats be equipped with electronic tracking devices that produce date at a rate of one ping per minute. This level of fine-scale spatial data will substantially improve the co-occurrence models used by managers to reduce interactions between right whales and vertical lines associated with trap/pot gear in these fisheries.

2. Electronic vessel tracking for federally permitted vessels would greatly improve enforcement in the rapidly growing offshore fleet:

Electronic vessel tracking for federally permitted lobster vessels is critically important for enforcing the management measures that protect right whales. Not only do limited data make it difficult to accurately determine *how* to reduce risk to right whales, but data limitations reduce the ability to ensure *if* risk reduction measures are even effective. Requiring electronic vessel tracking would ensure that federally permitted lobster and crab vessels are not fishing in times and areas that are closed to vertical lines. In addition, the information captured from the minute-ping rate would improve enforcement's ability to determine each vessel's fishing activity (including soak time), transit activity, and estimate trap numbers and trawl lengths to ensure compliance with right whale regulations. This information is vital in ensuring that the recent ALWTRP changes will reduce risk to right whales at the level required by the ESA and MMPA.

[28] April 20, 2019, TRT Meeting Risk Reduction Tool PPT.
[29] Sept. 2021. Greater Atlantic Regional Fisheries Office (GARFO). Fishing Vessel Trip Report (VTR) Reporting Instructions. P.6.
[30] ASMFC, December 2021. Draft Addendum XXIX to Amendment 3 to the American Lobster Fishery Management Plan and Addendum IV to the Jonah Crab Fishery Management Plan. P. 1-2.

3. **Improve harvest reporting, and an electronic vessel monitoring program, for state-permitted vessels that fish with trap/pot gear:**

Electronic vessel tracking for federally permitted vessels is the first step in quantifying entanglement risk to right whales. The offshore fishery is growing rapidly[31] and potentially poses the greatest risk to right whales. Offshore trap trawls are longer, and the rope is thicker and heavier than inshore gear. Therefore, potential entanglements are more likely to result in right whale mortality or serious injury. However, the ASMFC should also improve harvest reporting in state waters, both to better manage the risks that this gear poses to right whales and to improve management of lobster and crab stocks. A trailing addendum should review options for electronic vessel tracking in state waters.

4. **Conclusion**

We appreciate the Commission's efforts to significantly improve information about where and when federally permitted fishing effort occurs in the American lobster and Jonah crab fisheries through electronic vessel tracking. A nuanced understanding of the footprint of these fisheries is necessary to ensure management measures reduce risk of entanglement interactions that cause mortality of and serious injury to North Atlantic right whales. Electronic vessel tracking in the federal lobster and crab fishery with also ensure that the offshore fishery is compliant with the new regulations to protect right whales. In addition, the data from this program will improve the ASMFC's ability to manage the American lobster and Jonah crab stocks and will improve enforcement of lobster and crab regulations intended to sustainably harvest these species in federal waters.

We look forward to contributing further as the ASMFC works to enhance data and spatial analysis in the American lobster and Jonah crab fishery.

Sincerely,

Peter Baker
Director, U.S. Oceans, Northeast
The Pew Charitable Trusts

K. Purcie Bennett-Nickerson
Executive Director and Staff Attorney
Bennett Nickerson Environmental Consulting

[31] ASMFC, December 2021. Draft Addendum XXIX to Amendment 3 to the American Lobster Fishery Management Plan and Addendum IV to the Jonah Crab Fishery Management Plan. P. 5.

W. William Anderson
702 Dixie Road
So. Trescott. Maine 04652
USA
Phone 207-733-2179
Fax 207-733-2442

January 22, 2022

Caitlin Starks, FMP Coordinator
Atlantic States Marine Fisheries Commission
1050 N. Highland St., Suite 200 A-N
Arlington, VA 22201

Dear Caitlin:

I read in the Ellsworth American that you were seeking public comment on Lobster Draft Addendum XXIX, which would create an electronic tracking system for lobster boats in federal waters.

I would like to support this proposal. There is a lot you do not know about what these boats are doing. This would improve the information about where they are fishing, when they are fishing, etc. With the proposed Whale Closed areas the gulf of Maine is getting smaller and this could present new problems. Having tracking on these lobster boats would allow you to see these problems immediately, if they should arise. I have thought that you should have required tracking on these lobster vessels some time ago. I understand it is not widely supported by the industry. There is a VMS tracker on my lobster boat and has been for many years now. I also hold a scallop Permit.

I do not want to be required to have one tracking system for lobster and a different tracking system for the other fisheries I might peruse on one boat. Then have to declare something for one fishery and declare something else on the other system before I could even leave the dock. What ever you do one tracker on a vessel is all we need.

I have had a VMS tracking system on one of my lobster boats since 2005. I started with Skymate but as I had difficulties getting Windows updates and Skymate updates by 2007 I was forced to move to Boatracs. This was an expensive experience by lost fishing time and the purchase of a second machine. Boatracs worked well but towards the end I had some problems with this company too. I was paying for an extended warrantee in my monthly fee. If my machine went down they would just send me another machine and I returned the old one to them. This worked well for years. Eventusily I lost some fishing days with Boatracs and there was no need of it. Just people playing games. I was paying for that extended warrantee. Parts were eventually shipped. I could say more. In the spring of 2020 Boatracs services ended. I had to pick a new service and purchase a new machine. Skymate had changed completely and was using a tablet that comes with the machine. I have started having problems again not receiving a update. Today I could not complete my preland so I could not send it. He tried to update my tablet this weekend but my Internet connection was to slow as it is for many things. So tomorrow I need to go find somewhere to get a good Internet connection. I will say that the person at Skymate this time is very helpfil and the Tablet program is easy to use.

You have some comments about the costs associated with tracking systems. I know all about the costs, frustrations and lost fishing day these systems can bring but I still support the concept. I could say a lot more sbout why.

You mention that the cellar systems and how you loose contact with boat when they are out of range. With satellite systems you can contact a boat anywhere. So if a boats enters a closed area or Canadian waters. You can notify him soon after he does. There is also a safety feature of the satalite systems for boats to send out destress messages. Lost or missing boats have also been located using VMS information.

Sincerely,

Bill

W. William Anderson

Caitlin Starks

From: Glenace Breton <glenace@breton.us>
Sent: Friday, January 21, 2022 4:41 PM
To: Comments
Subject: [External] Objection to Lobster Draft Addendum XXIX

To Whom It May Concern:

Let's imagine that every person the USA is required by law to wear a tracking device to show where they go so that their habits, routines, preferences, and where they work can be tracked. Wait, that's ILLEGAL. Oh, an INVASION of PRIVACY. And an INFRINGEMENT on personal LIBERTY. Not to mention it's UNCONSTITUTIONAL!

This is exactly the kind of thing that the United States Marine Fisheries Commission is proposing for lobstermen and women up and down the coast through the Lobster Draft Addendum XXIX. Our lobstermen and women will be forced to place tracking devices on their boats and have their EVERY MOVE tracked, whether fishing or taking a family Sunday picnic or a weekend trip. It's BIG BROTHER on the ocean! Wait, this sounds ALOT like what is done to CONVICTED CRIMINALS- they get ankle monitors so the justice system knows exactly where they are at ALL times. So, now our hard-working fishermen are to be treated like CRIMINALS??!! Though they have done nothing wrong, they are to have their RIGHTS VIOLATED, being tracked at every move??!! Seems to me the government is sending the message loud and clear that it doesn't trust the men and women who are self- motivated to do the work that they need to make an honest living. It's an INJUSTICE to fishermen and a TERRIBLE idea, no matter what the intent is of the monitoring system. This proposal to force these hard-working people of an environmentally sustainable industry who are already unfairly threatened with extinction by having the scales stacked against them through impossible, unattainably expensive, looming whale regulations just strips them of whatever dignity that remains to them. How could the USMFC propose such an INVASIVE thing be done to these people?? Not to mention it would add more burden to the financial cost of fishing, which is already heavily burdened with financial legal requirements. Why is the government trying to grind fishermen into the dust, all the while happily collecting their taxes and numerous fees?! If fishermen go extinct, there won't be any taxes and fees to collect. In it's place will be economic depression and desperation up and down the coast, combined with poverty and devastation. Expect lobster prices to skyrocket - only the rich will be buying. And this proposal contributes to their extinction.

I would look into the LEGALITY of this proposal, if I were you, and back off our fishermen! I smell a ripe lawsuit waiting to happen. The USMFC is going too far with this proposal. Does anyone there have a heart AT ALL, have any of you spent time with fishermen or their families and seen what they have to go through just to SURVIVE today? If things do not change, they will NOT survive.

My husband and I stand FIRMLY with the lobster and Jonah crab fishermen AGAINST this ILL-CONCEIVED proposal. It's time our fisheries had a BREAK!

Glenace Breton (native of Beals Island, Maine) Jeffrey Breton Brunswick, Maine

Caitlin Starks

From: tomi plummer <plummer.tomi@yahoo.com>
Sent: Tuesday, January 18, 2022 1:47 PM
To: Comments
Subject: [External] Lobster addendum xxix

Hello my name's Adam colson as a federal permit holder and fishermen who fish year round outside 3 mile lines I have no problem with you putting a tracking system on my boat. However if I go aboard to haul and the device isn't working I'll call to have it fixed when I get in. I have a family to feed and cannot miss good days. I rely solely on fishing proceeds to survive I don't have another job. Also, how are these funded. I have enough to pay for there needs to be some way fishermen get these without paying. This isn't something we need in order for a.boat to fish.
Nor, is it helping this whale program this is only helping you find out how much room you need for your offshore wind which I'm not in favor of.

Sent from Yahoo Mail on Android

Here is my public comment on Addendum XXIX to Amendment 3 to the American Lobster Fishery Management Plan and Draft Addendum IV to the Jonah Crab Fishery Management Plan

My name is Timothy Field, and I own a lobster boat based out of Westport, MA. I have a Federal Area 2 permit, have owned my own vessel since 2006 and started lobstering way before that. I was unable to attend the virtual meeting regarding this Addendum.

I support "Option A: Status Quo", for several reasons.

The lobster fishery is mostly made up of small owner operated vessels. In the last several years there have been significant increases in cost of fuel, bait, traps, and the vessels themselves. While the average lobster/crab price per lb has increased, it has not increased in comparison to expenses. There is also a substantial labor shortage, even in good times it is not easy to find a deckhand. This past year my own vessel has had to delay trips because of crew shortages. The percentage that deckhand's are paid has increased, but it doesn't solve the problem. While purchasing a electronic tracking device and subscription costs are not a large percentage of a year's gross, it is still another small increase that small vessels will have to bear, without being able to pass on these operating costs to the customers. There's no guarantee that consumers will be willing to pay more for lobsters/crabs, because of these increased operating costs. Additionally many new regulations will take effect May 1, 2022 which will increase operating costs, not to mention the three month long South Islands Closure area.

The ability to "improve stock assessment" is frequently stated as a reason for needing electronic tracking. I don't see how this is true. How would being able to specifically identify where gear is set, improve the stock assessment? All landings are reported and fishing effort based on the number of traps set is also reported. It seems to me that the problem with the stock assessment is that, the stock areas do not coincide with the Lobster Management Areas. Many years ago the Management Area idea was adopted, creating LMA 1-6 and LMA OC. We should continue to stick with that, or do away with Lobster Management Areas completely, which I see as unlikely. We already have the data to be able to see landings and fishing effort by Lobster Management Area. Electronic tracking would be redundant to area management and further complicate everything. With more specific data, would different management areas be created? Would more regulations be placed within some management areas, while not being applied to the entire management area? Or will regulations continue to be applied to the entire lobster management area, when perhaps they are only meant to address a specific area within the lobster management area?

It is claimed that there is a need to "identify important transit routes and fishing grounds". To me it seems as if we are closing the barn door after the horse has left on

this one. BOEM (Bureau of Ocean Energy Management) has already designated lease areas for offshore wind with no input from the fishing community. The only input from the fishing community came after the areas had already been leased! I fish primarily within such wind lease areas and I doubt that any decision about offshore wind leasing would have been different if BOEM or anyone else knew specifically where I did fish. The same goes for the ALWTRP (Atlantic Large Whale Take Reduction Plan), areas that have already been defined for closure, without having this "high resolution spatial and temporal effort data". Once again I doubt any changes would have been made if managers knew specifically where I fish. I also happen to primarily fish within the newly created "South Islands Closure Area" If prior to the leasing of offshore wind areas and the new ALWTRP, electronic tracking was proposed in order to gain this specific data so that the lobster fishery could continue without being severely impacted, that would have made more sense! Even then I doubt the management decisions would have been different.

I personally feel, and I can tell you that a lot of other fisherman feel the same as I do, that frequently the priorities of fisherman are not considered when new regulations are made. It seems like we always take a backseat to whatever the particular "goal" is for any given regulation. In this country we frequently take our food supply for granted. It is the norm to be able to obtain whatever food we want, whenever we want and it being reasonably affordable. That is not the case throughout the entire world. I believe more priority should be given to this nation's food supply and those that produce it.

The enforcement issue is also something I see as problematic. Lobster gear is NOT hard to find. Our fishing locations ARE already available to state and federal enforcement. I also ask how hauling and inspection of gear would be handled. It is one thing to haul and small string of pots, in shallow water and set them back without disturbing the contents. Longer trawls, deeper water, and more congested fishing areas are a different story. I sometimes primarily fish for Jonah crabs even in the warmer months. My vessel is equipped with a refrigerated sea water system, which is necessary to keep the crabs alive. I ask how would a coast guard vessel haul and inspect a 30 pot trawl of mine and keep the lobsters and crabs alive during the summer months. There is quite a difference between the water temperature at the bottom and surface temperature, not to mention the air temperature. Lobsters and crabs do not survive well, if at all in air temperatures of 80 or 90 degrees. Would the crabs be sitting on the deck on the vessel exposed to the sun and 80 or even 90 degree temperatures for time it takes to haul, inspect and re-set the trawl? It takes someone with experience to efficiently haul and set gear, not to mention being able to reset gear EXACTLY where it was. Knowledge of tides and wind is crucial to be able to reset gear EXACTLY to where it was set. Another potential problem is how the gear is set back out. Ask any lobsterman and they will tell you that traps set upside down do not catch lobsters or crabs. Everyone has a method of setting to ensure this doesn't happen (speed at which traps are set, whether they are set from the stern or over

the rail, and this differs from boat to boat, person to person). I frequently fish around mobile gear fisherman. To avoid gear interactions there has been an age old agreement between the two groups on where to fish. An inaccurate set, could mean gear loss. Who will be responsible for such issues? The best way to inspect gear for compliance, is with a USCG boarding team onboard the vessel while they are hauling and setting gear. There is no other reasonable way to do this.

I hope that my concerns will be addressed, even though I am just one voice against many others.

Sincerely,

Timothy Field
F/V Green Dragon
252 American Legion Hwy
Westport, MA 02790
508-264-3838
tfield@protonmail.com

From: G2W
To: Caitlin Starks
Cc: Comments
Subject: FW: [External]
Date: Thursday, January 20, 2022 11:06:08 AM

To night meeting , sorry I got off track but I don't believe the state needs to no every thing we do . I believe it will hurt us more then help . Thank you Walter Willey
-----Original Message-----
From: Walter Willey [mailto:mistymorning4@yahoo.com]
Sent: Tuesday, January 18, 2022 7:34 PM
To: G2W <G2W@asmfc.org>
Subject: [External] To night meeting , sorry I got of track but I don't believe the state needs to no every thing we do . I believe it will hurt us more then help . Thank you Walter Willey

Sent from my iPhone

From:	G2W
To:	Caitlin Starks; Comments
Subject:	FW: [External] We support tracking
Date:	Thursday, January 20, 2022 11:05:37 AM

Sending to comments in-box

From: Barbara Skapa [mailto:saverightwhales360@gmail.com]
Sent: Wednesday, January 19, 2022 11:20 AM
To: G2W <G2W@asmfc.org>
Subject: [External] We support tracking

Anything that creates more data equals facts equals science. All for it.
B. Skapa
Executive Director

--

Caitlin Starks

From: mlhodges56@verizon.net
Sent: Sunday, January 30, 2022 2:46 PM
To: Comments
Subject: [External] Lobster

My name is Mark Hodges, I am a Seabass Trap Fisherman out of Virginia Beach, VA. I have an A5W Lobster permit, one of the 2 licenses in VA. I strongly disagree with the ASMFC proposed requirement for electronic vessel tracking for my vessel. Below are several reasons for my disagreement:

1. I objected to giving anyone the access to my multiple secret fishing locations.

2. It will not yield any additional information other than my reported locations. The information collected will not show exactly where I might have caught one lobster for that day.

3. I sold $1058.00 of lobster in 2021. The cost for the equipment and service will most definitely cost more to me than the market value of the lobster I may catch for the year.

4. It will be an undue cost for our vessel without gaining any additional information on lobster research than my reported VTR's.

5. Typical government overreach for the very few lobsters that I catch in a year.

Thank you,
Mark

-----Original Message-----
From: Somers Smott <somers.smott@mrc.virginia.gov>
Cc: Shanna Madsen <shanna.madsen@mrc.virginia.gov>; Patrick Geer <Pat.Geer@mrc.virginia.gov>
Sent: Fri, Jan 14, 2022 8:48 am
Subject: RE: ASMFC American Lobster Board Releases American Lobster Draft Addendum XXIX/Jonah Crab Draft Addendum IV for Public Comment: Public Hearings and Webinars Scheduled for January 2022

Hi Lobster and Jonah Crab Waterman –

The meeting went well, but not many watermen participated from Virginia. There were several watermen from Delaware that had lots of questions and provided good comments – mostly about how the cost of the equipment would not be worth it as lobster isn't plentiful here and doesn't provide much income. I've attached a screenshot I took from the presentation. These prices are not the most up to date, and we were told it's possible we could get some updated numbers soon. Either way, I wanted to include it for you to see.

We also discussed in the meeting exactly which permits would require a tracker. The permits included in the current document are trap gear permits – A1, A2, A3, A4, A5, AOC, and A5W. Any other federal lobster permits would not be required to install a tracker. There were discussions about watermen that have the A5W permit, which is primarily used for black sea bass. It was the understanding of ASMFC that even though the watermen were not targeting lobster, if they used trap gear under this permit, they would need a tracker.

We appreciate those of you that have already sent in public comments to ASMFC regarding the proposed addendum (found here: http://www.asmfc.org/files/PublicInput/LobsterDraftAdd_XXIX_JonahCrabDraftAdd_IV_PublicComment_Dec2021.pdf).

Caitlin Starks

From: Cindy Johnson <johnsonemploy@aol.com>
Sent: Wednesday, January 12, 2022 4:22 PM
To: Comments
Subject: [External] American Lobster Draft Addendum XXIX/Jonah Crab Draft Addendum IV for Public Comment

Am I understanding this straight? You want to track "vessels" aka lobster boats to understand crustaceans better? Shouldn't you track the crustaceans and not the people then? It appear the main goal then is to track people-why??

Respectfully,
Cindy Johnson
Turner. Me

Caitlin Starks

From: Jim Kimbrell <jimthepotter002@yahoo.com>
Sent: Wednesday, January 26, 2022 10:50 AM
To: Comments
Subject: [External] Comments

Hello
Just a comment about tracking lobster boats.
For one thing, it seems expensive, for the individual boat and for the overall project. Even if you did know where a boat is . You don't know how many lobsters are getting caught by that boat. It could be half the traps did good and half did poorly.
Shore side catch reporting has gone on for years. We know they catch a lot of lobsters.

Have you ever seen the following?
https://www.marinetraffic.com

Jim Kimbrell

Sent from my iPad

Caitlin Starks

From: Brenda Pennell <bpennell@comcast.net>
Sent: Monday, January 31, 2022 10:06 AM
To: Comments
Subject: [External] Tracking vessel

This a waste of time and money and unnecessary just a hassle for lobsterman about 75 present of lobsterman only lobster outside the three mile line 4to 6 weeks out of a year why track them all the time for a few weeks of lobstering what could they possibly gain from it is they a big crime going on no one knows about or people just need something to do Stupid idea leave things alone thank you

Sent from my iPad

January 31, 2022

Atlantic States Marine Fisheries Commission
Draft Addendum XXIX and IV

Subject: Electronic Vessel Tracking for Federal Permit Holders

Please consider the following comments on the Draft Addendum XXIX to Amendment 3 to the American Lobster Fishery Plan and Draft Addendum IV to the Jonah Crab Fishery Management Plan. I would prefer Option A Status Quo and not require electronic vessel tracking devices for federal permit holders.

1. Requiring boat owners to buy and install tracking devices, as well as pay yearly costs for the service, is a significant burden without funding assistance that is not currently available.

2. Powering of the devices could cause issues for boat owners. If something were to malfunction, it may cause the batteries to drain. Without power, boat could risk sinking from the failure of bilge pumps or miss a trip when the boat is unable to start. Also, there is nothing currently in place to address if the device malfunctions that would allow the boat to still make the trip. Losing days at sea through no fault of their own would be a heavy blow to fishermen.

3. I have serious concerns about the use of the data. ASMFC has stated that the data can be used to help protect important fishing grounds from offshore development. It may be the case that the data will help, however it may hurt fishermen through unintended consequences. All of the landings and stock data used in the offshore wind development process so far have done little, if anything; in regards to protecting vital bottom. Also, although I do not have a specific scenario, I know from my experience as a former engineer that people can come up with creative ways to use and present data to favor their goals. To be frank, I don't believe that offshore wind developers want to coexist with fishermen as it would be easier and cheaper to do these projects with us out of the way. It would be a shame to provide more data to developers to help them push their way in while they push us out.

Thank you for your consideration regarding the electronic vessel tracking. Should you have any questions, please do not hesitate to contact me.

Liam Sullivan
Commercial Fisherman
liam.sullivan754@gmail.com
(401) 418-2100

Caitlin Starks

From: jimtitone@aol.com
Sent: Sunday, January 30, 2022 12:04 PM
To: Comments
Subject: [External] Draft Addendum XXIX

Ladies and Gentlemen:
Thank you for the opportunity to comment on the draft addendum.

I am voting against this addendum for the electronic vessel tracking for federal permit holders. It appears the real goal of this addendum is not for lobster/jonah crab stock assessment, but to collect data that would promote the closing of vast areas of fishing grounds due to any perceived threat to whales, and to clear the way for the industrialization of the ocean for development of offshore wind (OSW). Basically, NOAA and ASMFC are capitulating to various NGO's and OSW developers. This addendum would have the fishing industry, **AT ITS OWN EXPENSE**, collect data that would only benefit deep pocketed, well financed foreign and domestic interests outside of the fishing industry.

If this data is so valuable then why not have the real beneficiaries of this data (NGO's & OSW developers) collect this data on their own and at their own cost? Stock assessment for lobsters and Jonah crabs can be accomplished by requiring all lobster permit holders to submit VTR's for each trip.

It is obvious that the Secretary of Commerce is on a mission to populate the entire U.S. Atlantic Seaboard with offshore wind farms, and will exert pressure on all agencies under her control to vigorously pursue her agenda. The fishing industry presents a roadblock to this misguided agenda. What better way to remove the fishing industry hurdle then by having this industry pay for its own demise.

I think it is time for ASMFC and the American Lobster Management Board to start supporting the fishing industry and to stop being puppet agencies for interests which would be destructive to the fishing industry.

NO for Draft Addendum XXIX.

Thank you.

Jim Titone
Seabrook, NH
603 394-5794

Caitlin Starks

From: Tor Vincent <duckislandmarine@gmail.com>
Sent: Wednesday, January 12, 2022 8:50 PM
To: Comments
Subject: [External] Lobster Draft Addendum XXIX
Attachments: 17-25a-MBES-and-Benthic-Survey-Data (4).pdf

Hello,

To begin I hope there can be a clarification about area 4. It was said all lobsters harvested from federal waters need to be from a tracked vessel. Since area 4 extends into New York harbor does a vessel that works within 3 miles from shore and lands in New York need a tracker ? From the presentation I think not, but only area 6 was mentioned as state waters. I guess the same up the coast for small boats that just work the shoreline.

I have looked at several offshore wind applications and I have seen how the data is mapped to show fishing history. I see how this could help clarify the history of the boats working lobster gear offshore. The whale considerations have weakened the buoy lines and allowed some trawl lengths to be extended. I read some of the configurations for offshore turbines that may be real or just the promotion of an idea for funding.The off-bottom turbines were a configuration of several anchors and had loose cables attached that were going midwater for a distance to reduce chafing from the proposed structures. They showed cartoons and maps of going to the edge of the shelf. Since the trap gear has a history of moving after storms I hope this can be recorded from the data. To say there will be a conflict between the footprint of floating windmills and lobster gear is an understatement. More like terrible tangles.

The buried cables are another matter. To achieve efficiency with cable arrays between the windmills the designers use a lighter cable and consider that if the cable was buried too deep under heavy load it may overheat and have a shortened life. Their solution is to try to keep the cables in the top 1/2 meter of bottom because that is where the greatest circulation in the bottom sediments is and the water flush near the cable is the cooling solution. Who is going to keep an eye on them to bury the cables out of harm's way when the solution to a good lifespan on a thin cable is to keep it up high in the sediment? The sand waves and ripples from benthic studies give evidence the sands are mobile, most likely in storm events. Please don't blame the lobstermen when their grapples get into the shallow cables.

In the New York Plan for offshore wind there is a benthic study. It makes a note of a pockmarked bottom. Shows a sonar image on page 38. The pocks are not explained. At the end the study says it came across no habitat. A 2011 NOAA EIS for the shelf recorded the same sort of "pocks". Same dimensions almost exactly. Except the NOAA study recorded them as lobster burrows which were often occupied by several lobsters..In one sonar track picture of the NYOWMP benthic study I counted over twenty lobster burrows. So how many lobster burrows are really out there? I hope most realize there are few rocky patches offshore long island and the New York Bight. It seems very convenient for the wind farm studies to forget habitat built by lobsters and create invalid studies that show "no sensitive" habitats to harm. I hope those of you involved in this will be considerate of the circumstances and help build valid data for the fishermen to show proper history with rather than corrupt it to benefit the wind farms like the benthic study.

I will add that the study to prove the floating windmills and show their efficiency spaced them out far from each other. In the real world the windward edge of the wind farm is most efficient and the middle and lee end far less. The floating turbine data is obvious cherry picked nonsense. They may never happen .

Regards,
Tor Vincent

Caitlin Starks

From: Denise Wagner <wagnerfishingone@yahoo.com>
Sent: Thursday, January 20, 2022 10:20 AM
To: Comments
Subject: [External] Lobster Draft Addendum XXIX

Caitlin,

I am writing you today as a follow up to the public hearing held on January 13th. As you know I have many concerns about the tracking systems to be put on vessel with a Federal Lobster Permit.

First, is the operation of these devices. I am aware you have this equipment on draggers. Draggers are very different from the setting of gear. Those vessels fish year round. We have smaller vessels, a lot smaller, these vessels have a lay up period. My concern is when a vessel is done fishing for the year the tracking system still has to be on. Batteries will go dead and eventually the system will stop working. In my case, when I dock my vessel at the end of the season, we leave the state so I am not even there to make sure they stay charged. I am sure there are other unique cases so what are fisherman expected to do in this case when vessels are laid up? Also, concerned about other fisherman knowing where my gear is set. I was told by staff they wouldn't and I hope that is the case because that will cause conflict among fisherman.

Secondly, in the case of A5. A5 has a waiver. This waiver was put into place because A5 was recognized for not having a large participation in directed lobster fishing. A5 is mainly seabass fishery with very few lobsters landed as a bycatch. Therefore, A5W should continue to do what it was meant to and exempt fisherman from following the lobster recommendations and laws and if this law passes exclude A5W.

Third, is when a vessel has a lobster permit but does not fish for lobster is the vessel still required to have a tracker? For example we have federal permits but we also conch. If I am not fishing under the federal permits would I be required to have a tracker and if I have a tracker would it have to be on if I am conching? Conch pots Do Not Catch lobster.

Fourth, is the cost of the equipment. When we were our public hearing there was some conversation about cost. I find it hard to believe in today's world that the cost is only 500-700 dollars when an ALS is thousands. My son, knows someone who just had to replace theirs and he told my son it was around 7000. For the little bit of lobster we catch in Area 5 this cost doesn't justify. Is there going to be a monthly or yearly fee? This is a HUGE burden on fisherman. It is my understanding the Federal Government reimbursed the scallop fishery the cost of the equipment therefore, they set precedence, which means because they did it for one industry they have to do it for others. Not to mention the scallop industry is a multi-million dollar industry who received Federal funding and we don't even come close to that kind of income.

I know I have a lot of questions I hope that they are discussed and answered for me because on the public hearing phone call there seemed to be a lot of confusion and answers seemed very vague.

In close, we would like status quo. However, if this does have enough support we first would like an A5W exemption and not have it go into effect until Federal funding is available to support us because like I said this is not just a couple of hundred dollars we are talking about and we are not a rich fishery by any means. If, this law passes it should only apply to those who directly fish for lobster.

Respectfully submitted,
Denise Wagner
J W Commerial Fishing Inc.
Phone 609- 515-3788

Caitlin Starks

From: EDWARD WIESSMEYER <baitbag@msn.com>
Sent: Sunday, January 23, 2022 3:35 PM
To: Comments
Subject: [External] Lobster Draft Addendum XXIX

After reviewing the lobster draft addendum XXIX I would like to be on record as strongly opposing its implementation. After reading the proposal I am not in agreement that there is a need for this regulation. Starting with the VTR requirement, I feel that this an unnecessary bourdon dumped on the fisherman. The fisherman is going to incur additional costs to purchase, install, and maintain this unit. Lobstermen have been filing monthly catch reports with the state in Massachusetts that detail effort, location and trawl size in Massachusetts waters that have transient populations of whales and this statistical information has satisfied the Division of Marine Fisheries (DMF) without the use of VTRs.

The addendum proposal states the federal waters that are being lobstered in, have a sparse distribution of lobster gear. This equates to reduced fishing effort and less chance of interaction with whales. This fact tells me that there is no need for the use of a VTR. This fact also tells me that there is reduced fishing pressure on stocks and another reason not to require a VTR for stock assessment. In regards to the claim that a VTR is needed for spatial data collection, the use of the same spotter planes that are used to track whales, should be used to collect the spatial data from the air.

There are presently new regulation being implemented regarding the use of new buoy line marking regulations. This already equates to an added expense and labor intensive requirement of the lobsterman in order to comply. The industry does not need anymore new regulations. It is top heavy with restriction and regulations now!!!!!! I hope that this agency will take this feedback seriously and drop their proposal for the VTRs.

Sincerely
Edward Wiessmeyer
F/V Laura Jean II
Permit #149608

Sent from Mail for Windows

From: David Nichols
To: Comments
Subject: [External] Addendum: Lobster 2022.
Date: Wednesday, December 15, 2021 8:30:14 AM

CS: As a past offshore Lobster employee (crew on Two Dukes, Sandwich, Massachusetts, Jim Brady owner); I found my Maritime background (IOMMP Union, Linthicum Heights, MD) somewhat useful.

1. USCG Licensed Chief Mate Unlimited Tonnage
   A. Medical requirement (John Hopkins, MD)
   B. Seamanship
   C. Cooking 101 Wilma Nina Nichols
   D. Maritime Gear to work (required for US Maritime Industry)
2. I didn't have knowledge of:
   A. Lobster reproduction norm
   B. Seawater temperature and how it affected Lobster growth (natural feed)
   C. How to bait a trap (Although I did lobster as a child out of Nahant, MA)
   D. Current Worldwide market of catch

Therefore, it's my believe a Federal Observer should accompany all Commercial boats on a timely basis. This would allow further knowledge of catch, methods, and improvement to keep such a business alive, rather than farming or Aquaculture of species.

Merry Christmas from Boston.

From: Pete Mason
To: Comments
Subject: [External] Electronic tracking for lobster boats
Date: Wednesday, December 15, 2021 9:49:05 AM

RAPTOR REMARK: Alert! Please be careful! This email is from an EXTERNAL sender. Be aware of impersonation and credential theft.

My name is Peter Mason I am a federally permitted lobster fisherman also state permitted in the state of Massachusetts. I am 100% against electronic tracking of any Lobster vessel. All federally permitted lobster boats already submit VTR‘s every trip they make, and all the information that would be gathered from this electronic tracking is already provided to you by us through VTR‘s there’s no reason for us to be treated like criminals and tracked everywhere we go. There is already too much government overreach in the fisheries as it is, why burden us with more? it’s ridiculous and redundant. My son Toby Mason is also a federally permitted Lobster boat and state permitted just like me in the state of Massachusetts. He like me he’s also 100% against electronic tracking of our vessels and more ridiculous government overreach. I would like this to go on record for public comment on this topic.
Sent from my iPhone

From: Glenda Beal
To: Comments
Subject: [External] Lobster Draft addendum xxix
Date: Wednesday, December 15, 2021 8:30:44 AM

To Whom it May Concern:

We are writing in opposition to the proposed requirement for lobster and crab fishermen to install tracking devices on their boats holding federal fishing permits. This is not only a completely overreaching invasion of privacy and individual rights, which will bring us ever closer to the "Big Brother" government structure which we are already slipping steadily towards in our country, but also is a costly proposition which will add more burden to the already much harassed fishermen who are being singled out at every turn. Federally permitted lobstermen who hold other permits are already reporting every trip to NMFS. Why is ok for the government to know every move a fisherman makes in his own personal small fishing boat? The majority of these men and women privately own small day trip lobster boats which are typically less than 45 feet. These boats are not just used commercially. Most in Maine are used for family recreation many times during fishing season. When our children were small we camped in our boat every weekend during summer. Families continue to traditionally use their boats for such overnight recreation as well as day picnics to various islands. These boats are taken to ports along the coastline to either watch or participate in boat races. You are saying with this tracking device that it is ok for the government to know exactly where the families go every time they leave the mooring?? How is that even considered to be legal?? This is an incredibly intrusive, heavy-handed example of government overreach into private lives as well as into private business! With all the whale rules that are ever more threatening to the livelihoods of our families from ridiculously difficult and time consuming rope marking systems and the frighteningly real probability that our fishery will be discontinued due to law suits from environmentalists who have forced unnecessary disproportionate restrictions on lobstermen by NMFS to "save whales" which are not even entangled in Maine waters, we do NOT need further government laws and regulations. Government fishing closures are now a real threat with sweeping large swaths of rich fishing grounds being taken from us. How many more closures are we likely to see in our state? Our own government additionally threatens fishing industries with plans to build harmful floating windmill arrays on the ocean. Our heritage industry is in danger already from all sides, and fishermen feel violated and threatened unfairly! To now decide every permit holder needs to be TRACKED is unbelievable! By a device which is extremely costly and invasive! It is unfathomable that we are now having to try to convince your commission that we shouldn't be restricted and burdened any further! At what point does government decide to stop harassing the hard working men and women who are just trying to do their job, freely and independently? Our rights are being violated at every turn and no one in government seems concerned, though the state and federal government are happy to take our income tax contributions! We buy our licenses and we have had to get government permits just to fish outside of state waters. We maintain our vessels and keep buying and replacing ever more expensive safety equipment like life rafts which then need to be repacked yearly at nearly the cost of a replacement. We can hardly keep up with all the requirements and regulations without hiring a personal secretary to keep it all straight! Requirements grow more limiting, restrictive, invasive, burdensome and costly in both time and money. Does the Atlantic States Marine Fisheries Commission really care about the lobster industry?? If so then the proposed tracking equipment requirement should be thrown out and fishermen should be allowed to make a living for their families without further complications and intrusions. We are under too much burden already. Please do NOT require tracking equipment on our small federally permitted lobster boats.

Sincerely,
Travis and Glenda Beal
213 Bayview Drive
Beals, ME 04611

From:	Katy Ellis
To:	Comments
Cc:	TODD ELLIS; Jon Shafmaster
Subject:	[External] Lobster Draft Addendum XXIX
Date:	Monday, January 31, 2022 12:54:20 PM

To Whom it May Concern:

Shafmaster Fishing is the owner/operator of 14 offshore lobster boats based out of Newington, New Hampshire. We are writing today to provide you with our comments in opposition to Lobster Draft Addendum XXIX, the proposed electronic vessel tracking.

Our boats are currently using a VMS network through CLS, successor to Boatracs, which already tracks the boats continually on a 30-minute frequency basis, i.e., ping position mechanism. However, it can be increased to every five minutes and covers all of Area 3 as well as anywhere on the East Coast of the United States fishing grounds. It provides total coverage in real time because its satellite based, not cellular.

The proposed electronic vessel tracking, as we understand it, is only real-time within cellular range, i.e., 10-20 miles off the shore. We currently fish 10-12 day trips so the data accumulated by this possible system will only be downloaded and available when a boat returns to port. Therefore, the data is not "real-time" and by definition "stale."

In addition, VMS provides us with email communication capabilities, at all times, wherever we are fishing. Again, since there are no cell towers out to sea, the cellular based system will not provide email capability.

Lastly, VMS service provides us with access to 24-hour, up-to-date weather reporting. This is a huge safety feature. We all know the story of the "Perfect Storm." Safety is a critical issue, and the VMS system provides this information.

In conclusion, the electronic vessel tracking absolutely is not applicable for offshore fishermen. Further, IF the information potentially available via the electronic vessel tracking system in Addendum XXIX is deemed essential and requisite, the solution is to make VMS required on all boats.

Shafmaster Fishing Co.
158 Shattuck Way
Newington, NH 03801
603-431-3170

From: Beverly Lynch
To: Comments
Subject: [External] lobster draft addendum XXIX
Date: Wednesday, January 12, 2022 10:59:50 AM

From past experience, so called hearings and comments are just for show. You administrators have made up your minds to impose electronic surveilance on lobstermen and you know you can get away with it under the current administration. No where, did I see mentioned how many offshore lobstermen there were. I suspect very few.
My husband will soon be 65. He has worked as a seabass, lobster pot fisherman since he was 16. Last year you imposed electronic vessel trip reporting on him. He had never used an internet device and struggles with this. It is also expensive. Now you will require him to have electronic monitoring as if he were a criminal. No, criminals are treated better. This will add more to his expenses and very likely will not be reliable. He will lose fishing days when these systems are down.
The costs you cited for these devices and the fees is out dated. With inflation, they will cost more.
My husband fishes off VA and MD, not off New England, in a 35' boat. Do you get that, a 35' boat? He no longer fishes in the offshore canyons, but lands lobsters from his inshore sea bass pots. This is about 20 miles out. I think there are maybe three other sea bass pot fishermen active in this area. But you have to know where their boats are every minute! You have to know where their gear is, although it is reported in their vessel trip reports. Why?
Offshore wind farms have damaged European fisheries. These farms will likely go in my husband's fishing grounds. That's ok with you. But a fisherman with a few hundred pots is another matter.

And this may be off subject, but we have millions of people coming across our border, with no monitoring at all. Some may be terrorists, criminals, who knows, but you think it's important to monitor where lobster boats are every minute. Why? Are your brains so fogged with charts and useless data, you can no longer exercise common sense?

Beverly R. Lynch

Painter, VA

From: Travis Fifield
To: Comments
Subject: [External] Lobster Draft Addendum XXIX
Date: Thursday, December 16, 2021 7:50:51 PM

Hello,

I'd like to submit the following comment on the draft lobster addendum:

It is incredibly that ASMFC is expecting fishermen to shoulder the financial burden of yet another unfunded mandate for newly required equipment and additional cellular data plans— or more likely satellite data plans for the remotest of fishermen. This coming on the heels of the $5000 per ropeless trap it is pushing onto the industry. ASMFC and the federal government should spend as much time working on funding the purchase of this equipment and data plans as it does calculating gaussian mixture models. If ASMFC is requiring this new equipment, then the draft rules should be required to include a section on financing the installation on boats.

I have boats that sell at my wharf that may not be opposed to the trip recording which is what this actually appears to be since it's not in real-time, but they will absolutely get hung up on spending more money on equipment they see as pointless and unnecessary.

Travis Fifield
Fifield Lobster Co.
Stonington, ME

Atlantic States Marine Fisheries Commission

1050 N. Highland Street • Suite 200A-N • Arlington, VA 22201
703.842.0740 • 703.842.0741 (fax) • www.asmfc.org

MEMORANDUM

TO: **American Lobster Management Board**

FROM: **American Lobster Advisory Panel and Jonah Crab Advisory Panel**

DATE: **February 16, 2022**

SUBJECT: **Advisory Panel Reports on Lobster Draft Addendum XXIX and Jonah Crab Addendum IV**

A joint meeting of the American Lobster Advisory Panel (AP) and Jonah Crab AP was held virtually on Tuesday, February 15, 2022. The purpose of the meeting was to review Draft Addendum XXIX to Amendment 3 to the American Lobster Fishery Management Plan/Addendum IV to the Jonah Crab Fishery Management Plan, and to gather input from the lobster and Jonah crab advisors on the proposed management options. The addenda consider implementing electronic tracking requirements for federally-permitted vessels in the American lobster and Jonah crab fishery.

Lobster AP Attendance
Grant Moore (Chair, MA)
Eben Wilson (ME)
Jeff Putnam (ME)
Arthur (Sooky) Sawyer (MA)
John Whittaker (CT)
Lanny Dellinger (RI)
Robert Nudd (NH)
Sonny Gwin (MD)

Jonah Crab AP Attendance
Sonny Gwin (Chair, MD)
Marc Palombo (MA)
Brian Thibeault (RI)

The following is a summary of the AP discussion. Comments provided by AP members do not represent consensus opinions but rather individual perspectives.

Marc Palombo asked if tracking data could be used to show or investigate gear conflict situations. He described having unmarked traps set over his traps and there being no recourse for this. He suggested that tracking data could be used to prove where gear was set, and wanted to know if lobster tracking data could be compared to VMS data. Staff explained that this may be possible but additional permissions would need to be granted in order to use VMS data because it is under the authority of NOAA's Office of Law Enforcement. Additionally, individual track data are confidential and would also require permissions for access.

Brian Thibeault asked how the track data can be used to improve the stock assessment, and indicated that this question has not been fully answered. Staff explained that with the current spatial data (one latitude/longitude per trip report, or ten minute squares) it is not always clear

in which stock the effort is taking place, especially near boundaries. Tracking data would be much more precise and allow for effort to be more accurately assigned to stocks.

Lanny Dellinger said he thinks this proposal is happening too late to benefit Area 2 in terms of wind development because all areas have already been leased out. Staff mentioned that the data could also be used for mitigation or compensation purposes. Lanny expressed doubt that any benefit will really come from tracking.

Several AP members emphasized that in order for a tracking program to be useful, there needs to be 100% harvester reporting from the federal fleet that has trackers so that additional information on fishing activity is associated with vessel locations.

Grant Moore asked about data access and whether individual or confidential data would be released if requested under the Freedom of Information Act (FOIA). Staff responded that they believe confidential data will not be released, but will follow up to get legal advice on this issue ahead of the Board meeting. Other AP members also spoke about concerns that their data would not be legally protected.

Grant Moore also spoke about his experience using one of the tested tracking devices. He has had it on his vessel for three years with no issues, and has looked extensively at the data. He believes the technology is dependable.

AP Comments on Addendum Options

AP members provided input on which of the proposed options they support and why. Six of the attending AP members supported Option A (status quo) and two supported Option B (tracking requirements). One member was undecided. Individual comments is summarized below.

Brian Thibeault (Jonah Crab AP, Area 2): Supports Option A, status quo.

- His justification is that after attending many meetings there are still many unanswered questions on how the devices and program will work. As for the equipment, he does not think it is possible for enough equipment to become available in such a short timeframe. There is no certain timeframe for when the vendors could manufacture devices. He also stated that equipment and data plans need to be paid for by some of the user groups who are going to benefit from the data; wit CLF, law enforcement, and wind, it should be possible to get funding to cover this. As for enforcement uses, he thinks the idea that the one minute ping rate could be used to determine the number of traps per trawl is concerning, and it makes him nervous that such information would be used for enforcement because it will not always be accurate. Before this tracking program happens, all of the Addendum 26 requirements should be implemented and all lobster permits should have mandatory reporting. Having mandatory reporting would already significantly increase the information on where lobster activity is occurring.

Lanny Dellinger (Lobster AP, Area 2): Supports Option A, status quo.

- Rationale is that fishing is dynamic, and there is no baseline for the last 20 years. As a result the current data will not protect all of the important areas. Fishermen could provide some historical data in fishing areas. Additionally, he does not think the tracking data will help to protect Area 2 against wind development because all of the available areas have already been leased. Fisheries managers will have no say in identifying which areas will be built or not. Cox's ledge is an example; it is essential fish habitat for many commercial species and they still put a wind farm there. He also stated that the number of traps per trawl being counted is nonsense, because hauling time is not consistent; it takes longer to haul trawls on a windy day than a calm day. He has talked to many Area 2 fishermen about this and hasn't talked to anyone who supports this. No matter what damage is done to the stocks by wind development it will be the fishermen who wind up responsible for it.

Jeff Putnam (Lobster AP, ME): Supports Option A, status quo.

- After spending time reading public comments, he agrees with all of the reasons given for supporting option A. He says it is not as much about the data that is available, but rather the data that might be missed. There are not many people lobstering in the deep basins in Area 1 now, but in 10-20 years there might be lots of lobster there, and tracking can't show that. If there is ever a shrimp season again, there are a lot of places lobster boats cannot fish when mobile gear are there. The tracking data will not be able to show the whole story of why the boats move to different areas.

Sooky Sawyer (Lobster AP, MA): Supports Option A, status quo.

- There needs to be more harvester reporting first. Without reporting data and catch rates, tracking will not help.

Bobby Nudd (Lobster AP, NH): Supports Option A, status quo.

- Bobby stated that he has been doing this a long time, and the AP is usually pretty conservative and rational about needs of the fishery. He has always campaigned for more accurate data, but this addendum needs to be further thought out. It seems that the intitial need for this tracking program came from the protected species people, and other purposes were added onto it after that. He is concerned that spatial information from this is going to lead to significant area closures and experiments with buoy-less fishing. He is always in favor or better data but is concerned about the motivation and fast tracking of this action. He shares concerns of others about the wind energy aspect and thinks the results will be the same with or without tracking. He said that if this were more thought out, in the future he could possibly be in favor of it.

Marc Palombo (Jonah Crab AP, MA): Supports Option B.

- There is a lot of distrust of people feeling this will hurt them, but I think on the more positive side: we need people to see where we fish and have proof to back it up. I have filed VTRs for years and hope this tracker data will add more up to date information. I see a huge gap in law enforcement offshore. I get set over every year with untagged

traps and nothing is done. Maybe if tracking were in effect, problems like this could be resolved. Also, we are losing too much bottom area and I am not sure how much time is left in the offshore business. Lobsters are getting fewer and there are more people. Losing more fishing areas will make this a moot point, because we will not have more area to fish if we can't document where we are fishing.

John Whittaker (Lobster AP, CT, SNE): Supports Option A, status quo.

- Small businesses have been squeezed too much already and do not need the extra cost of tracking, especially inshore. We have already lost sites to wind, and the old fishing areas are beat up. Does support everyone being required to report on VTRs.

Sonny Gwin (Lobster and Jonah Crab APs, MD): Undecided support

- Thinks the timing of this addendum is happening too quickly, and it needs to be more thought out. A lot of people are opting for Option A, with good reason, but Option B is important too because of the information we can get from it. We are asking to put trackers on a lot of boats. We do not know the future between all of the marine spatial planning and what the industry is going to look like in five years. It would be nice to have a study to see how the industry changes, and would like to have more time before adding this requirement. Being in this industry for a long time, status quo is just part of the process, but it is never going to work. I know we are going to end up doing this, but we just need more time to do it right and have all the information. Cannot say right now which option I support.

Grant Moore (Lobster AP, MA): Supports Option B

- I echo Sonny's sentiments on status quo. We are finding that more often than not that status quo is just going to kick us. I have lots of questions about the program, but I know that the only way to get good spatial data is this tracking addendum with mandatory VTRs. With that we will have a very accurate footprint of the fishery in a few years. Think if Area 2 had data before all of the wind development it could have been better. For the whale issues, the closures are much bigger than they need to be because we do not have fine scale data on the fishery. It is the same with the marine national monument and the deep sea coral amendment. On the enforcement topic, as I understand tracking, it is not going to tell them how many traps per trawl, but it might show patterns of where boats are fishing or hauling gear. I think it will also help with improving the stock assessments to ensure we manage these resources correctly. I understand Sonny's concerns, but I think we will be in more trouble if we do nothing and stay status quo.