Atlantic States Marine Fisheries Commission

American Lobster Management Board

October 28, 2013
9:45 a.m. – 11:45 a.m.
St. Simons Island, Georgia

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 *(D. Grout)*	9:45 a.m.
2.	Board Consent • Approval of Agenda • Approval of Proceedings from August 2013	9:45 a.m.
3.	Public Comment	9:50 a.m.
4.	Consider Draft Addendum XXII for Final Approval **Final Action** • Review of Draft Addendum XXII management options *(K. Taylor)* • Public Comment Summary *(K. Taylor)* • Consider final approval of Addendum XXII	10:00 a.m.
5.	Consider Draft Addendum XXIII for Public Comment (*K. Taylor*) **Action**	10:30 a.m.
6.	Review of Lobster Trap Transferability Database Progress (*M. Cahall*)	10:40 a.m.
7.	Update on federal management actions (*A. Murphy*)	11:00 a.m.
8.	Review of lobster gear marking regulation inconsistencies *(D. Grout)*	11: 35 a.m.
9.	Other Business/Adjourn	11:45 a.m.

The meeting will be held at:
The King and Prince Beach & Golf Resort, 201 Arnold Street, St. Simons Island, GA (800) 342-0212

MEETING OVERVIEW

American Lobster Management Board Meeting
Monday, October 28, 2013
9:45 – 11:45 a.m.
St. Simons Island, Georgia

Chair: Doug Grout (NH) Assumed Chairmanship: 01/12	Technical Committee Chair: Josh Carloni (NH)	Law Enforcement Committee Representative: Joe Fessenden (ME)
Vice Chair: Dan McKiernan	Advisory Panel Chair: Vacant	Previous Board Meeting: August 6, 2013
Voting Members: ME, NH, MA, RI, CT, NY, NJ, DE, MD, VA, NC, NMFS (12 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from August 2013

3. Public Comment – At the beginning of the meeting public comment will be taken on items not on the agenda. Individuals that wish to speak at this time must sign-in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Consider Draft Addendum XXII for Final Approval (10:00 – 10:30 a.m.) Final Action

Background

- In August the Board approved Addendum XXI which implements changes to the transferability program for Lobster Conservation Management Areas (LCMAs) 2 and 3. These changes are designed to allow for flexibility in the movement of traps provide a mechanism for industry to maintain a profitable fishery as the consolidation and trap reduction program for LCMAs 2 and 3 occur.
- Draft Addendum XXII will address single ownership and aggregate ownership caps in LCMA 3. These measures were previously considered under Addendum XXI, and are being further considered in Draft Addendum XXII in order to clarify the resulting trap limits after trap reductions are implemented. (**Briefing CD)**
- The draft addendum was available for public comment from September 16 – October 17. No public hearings were held. (S**upplemental material)**

Presentations

- Review of Draft Addendum XXII management options by K. Taylor
- Public Comment Summary by K. Taylor

Action for consideration

- Consider final approval of Addendum XXII

5. Consider Draft Addendum XXIII for Public Comment (10:30 – 10:40 a.m.) Action

Background

- A habitat addendum was developed for American Lobster by the Habitat Committee **(Briefing CD).**

Presentations

- Review of habitat considerations contained in Draft Addendum XXIII by K. Taylor

Action for consideration

- Consider Draft Addendum XXIII for Public Comment

6. Review of Lobster Trap Transferability Database Progress (10:40 – 11:00 a.m.)

Background

- In order for all jurisdictions to implement transferability programs, a trap transfer data base would be needed to track the movement of traps bought and sold.

Presentations

- Overview of lobster trap transferability design , development, and timeline for completion by M. Cahall

7. Update on federal management actions (11:00 – 11:35 a.m.)

Background

- NOAA Fisheries has recently published proposed rules and advanced notice of proposed rules on management measures pertaining to limiting access into the lobster trap fishery in LCMA 2, 3, and OCC; implementing a trap transferability program; and reducing lobster exploitation by 10 percent and reduce trap fishing effort in the SNE lobster management areas.

Presentations

- Overview of recent federal management actions by A. Murphy

8. Review of lobster gear markings inconsistencies (11:35 – 11:45 a.m.)

Background

- In April, the New England Fishery Management Council (NEFMC) discussed the inconsistency and related safety concerns of lobster gear marking regulations. The NEFMC believes that some of the current gear marking requirements may be unobservable on the water's surface and, in some cases, not strictly followed.
- The NEFMC recommends a minimum standard for fixed gear similar to the current EEZ regulations for traps in a trawl with more than three traps **(Briefing CD)**.

Presentations

- Overview of NEFMC letter and recommendations by K. Taylor

9. Other Business/Adjourn

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

AMERICAN LOBSTER MANAGEMENT BOARD

Crowne Plaza Hotel - Old Town
Alexandria, Virginia
August 6, 2013

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

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ATTENDANCE

Board Members

Terry Stockwell, ME, proxy for P. Keliher (AA)
Steve Train, ME (GA)
Rep. Walter Kumiega, ME (LA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)
G. Ritchie White, NH (GA)
Jocelyn Cary, MA, proxy for Rep. Peake (LA)
Dan McKiernan, MA, proxy for P. Diodati (AA)
Bill Adler, MA (GA)
Mark Gibson, RI, proxy for R. Ballou (AA)
Bill McElroy, RI (GA)
David Borden, RI, Governors Appointee proxy
Rick Bellavance, RI, proxy for Sen. Sosnowski (LA)
David Simpson, CT (AA)
Rep. Craig Miner, CT (LA)
James Gilmore, NY (AA)
Pat Augustine, NY (GA)
Anthony Rios, NY, proxy for Sen. Boyle (LA)
Peter Himchak, NJ, proxy for D. Chanda (AA)
Tom Fote, NJ (GA)
Adam Nowalsky, NJ, proxy for Asm. Albano (LA)
Loren Lustig, PA (GA)
John Clark, DE, proxy for D. Saveikis (AA)
Roy Miller, DE (GA)
Bernie Pankowski, DE, proxy for Sen.Venables (LA)
Tom O'Connell, MD (AA)
Catherine Davenport, VA (GA)
Bill Cole, NC (GA)
Peter Clark, NMFS

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

Ex-Officio Members

Joe Fessenden, Law Enforcement Representative

Staff

Robert Beal
Kate Taylor
Toni Kerns

Guests

David Pierce, MA DMF
Kelly Denit, NMFS
Raymond Kane, CHOIR
Charles Lynch, NOAA
Aaron Kornbluth, Pew Trusts
Bonnie Spinazzola, AOLA
Benson Chiles, Chiles Consulting
Gregory Blackler, MEFA
David Spencer, AOLA
Bonnie Hyler, AOLA
Janice Plante, Commercial Fisheries News

The American Lobster Management Board of the Atlantic States Marine Fisheries Commission convened in the Presidential Ballroom of the Crowne Plaza Hotel Old Town, Alexandria, Virginia, August 6, 2013, and was called to order at 11:10 o'clock a.m. by Chairman Douglas Grout.

CALL TO ORDER

CHAIRMAN DOUGLAS GROUT: Welcome, folks. This is a meeting of the American Lobster Management Board. My name is Doug Grout, I'm the Chair. We have an agenda before you. Are there any changes to the agenda or additions?

APPROVAL OF AGENDA

WILLIAM A. ADLER: I would just like to take this opportunity to congratulate Bonnie. This will be her last Lobster Board meeting. She has had a long, successful tenure on the Atlantic Offshore Lobstermen's Association and has been a fixture here at the ASMFC Lobster Board. I think she will be missed, and we want to thank her for contributions to the lobster management and the lobster resource. I just wanted to bring that to the board's attention. (Applause)

CHAIRMAN GROUT: Thank you, Bill, for recognizing that. Yes, Bonnie has been a fixture here for a number of years, long before I was, but we do appreciate the work that she's done here. Are there any other agenda items that people would like to either change or add? Seeing none; I'll consider the agenda approved.

APPROVAL OF PROCEEDINGS

At the last meeting we discovered that we had the wrong proceedings in the packet; so for this meeting we need to approve both the February and the May proceedings. Are there any suggested changes or comments on any of those proceedings? Is there any objection to approving both of those proceedings? Seeing none; we'll then move on to public comment.

PUBLIC COMMENT

This is public comment for items that are not on the agenda. Does anybody have that? Bonnie.

MS. BONNIE SPINAZZOLA: I would just like to let the board know that as with the groundfish closed area comments that the commission sent to the council quite a while ago, the council is now looking at opening Groundfish Closed Area 2 to scalloping. The same issues are prevalent that were before with the groundfish areas.

We've tried to work as an industry to get the scallop industry to sit down and work out an agreement with us. We've been unsuccessful to date; but as time goes one, we would appreciate it if the commission might get involved in this and send a letter to NMFS to ask them to look at the ramifications of opening the closed groundfish area because of the resource issues and gear conflict issues to scalloping and to at least perhaps try and mitigate some sort of a problem or to bring together the two groups to come up with some sort of an industry agreement or something. Whatever it might be, I'm just throwing it out there so that you're aware of it at this time. Thank you.

CHAIRMAN GROUT: Thank you, Bonnie, for bringing that up. What does the board feel? Do you think it would be worth sending a letter to the council to express our concern about potential gear conflicts and the impacts on egg lobsters if they were to allow scallops into certain parts of Closed Area 2? Is there an objection to us sending a letter? Okay, I'll work with staff on crafting that letter to the council. I have Roger Frate. Again, this is on items that are not currently on the agenda.

MR. ROGER FRATE: Thank you, Mr. Chairman; for letting me speak for a while here. My name is Roger Frate; I'm president of West End Long Island Sound Lobster Association, owner of Darien Seafood Market. I've been coming here with Senator Gunther for the last 14 years now and Doc passed away, it will be a year ago Saturday.

I want to talk about that 15-year rebuilding plan after the die-off in 1999 Hurricane Floyd. I would like to know, and I'm asking you people, the commission and our DEP, if they could seriously look at redoing this or completely getting rid of it. Fourteen years later we have no industry in the Long Island Sound; 1,200 families are bankrupt. We have about maybe 15 or 20 part-time fishermen like myself.

It was a hundred million dollar industry before West Nile 1999. We have spent thousands of dollars, myself, v-notching and trying to get this industry back. Every time they use pesticides, those lobsters die. I have something that is really important to know. Our state last year gave money to the DEP and to the pathologists to look at these lobsters for chemicals.

They have found methoprene and resmethrin in the lobsters in the west end of Long Island Sound, which I fish, where 70 percent of the lobsters were caught. Now the 24th of July, Darien Seafood had a press conference. Craig Miner and Terry Backer, God bless you. They had a bill passed outlawing methoprine and resmethrin.

Senator Duff, Senator Leone came, Linda Wright wasn't there, but she had a big part of getting this bill passed. Lance Stewart was there. Governor Malloy, God bless him, signed it. I'll tell you Senator Gunther is so proud and so proud of Craig Miner, a young man who has been here for two years who read and listened to the fishermen and listened to the research and got this bill passed.

Now New York, at this time I called the Godfather to the pesticides, Dom Ninivaggi, from Suffolk County, and he didn't care. He is still using the methoprine, the resmethrin, the scourges. There is no way I could talk to this man. I've been talking for the last 14 years. Brian Backer in Albany tried to get him to change, but for some reason he has the power over Albany.

Now with this plan, as lobsters come back knee deep – and I know, Dave Simpson, you heard me talking – no one is going to be able to make a living. They are going to be part-time fishermen. Trap reduction; I don't want to go through the plan, but if this Sound was cleaned up without the pesticides, these lobsters would migrate back in like they have done over the years.

Where Lance Stuart and Eric Smith, all the best breeding grounds really in the world, in the United States and any lobster organization, when I saw the logbook in 1974, I could speak here all day, all night. My biggest point here, Doc Gunther said, before he passed away was keep bringing up Rhode Island and Newport, Al Gettman. Now those fishermen in, I think it was 1999 and 2,000, the inshore boats were all bankrupt. Lobsters ran 100, 200 miles out.

Now Al Gettman is the head of mosquito control. They only used methoprine; they didn't use the adulticides. He listened to the fishermen. They outlawed the methoprene. They had lobsters right back in the harbors again, Wesley, Rhode Island, 26 boats. Whatever hung on, they're all in business.

But boats, I was up there last week, four boats sold because of these restrictions, the lobsters are getting too big. Like Long Island Sound they run off to the shelf. I would just like to ask Dave Simpson if he could really look at this; and the commission, if you could look at this. It is the only way that we're ever going to have a lobster industry in Long Island Sound.

It was a hundred million dollar industry. The graph from 1 to 10; we were at an 8, Maine was at a 3 before the pesticides started. Now every year they are killing them. It is not the die-off in '99. I fish in the western end, right against Greenwich and Port Chester. I knew by Darien Seafood what was going into those catch basins and storm drains; what pesticides.

When I changed, those lobsters came back. Whatever stayed there, they were healthy for a couple of years. Then here they come in 2005, 2006; right back to the worse chemicals, the adulticides. The methoprene has got two parts according to our DEP pesticide committees are adulticides. When it hits the chlorine and

nitrogen, it brings it to the bottom, we see what is in our traps. Everything is dead; and when the lobsters die, they stink.

I wish Lance Stewart was here, he is the head pathologist, but he is flying here now. I met him up in Mystic last week. I guess he missed the plane. But I would ask the commission from 1,200 fishermen that are bankrupt, lost families – two of my friends dropped dead in the middle of the night. One of them, it was sad. He had the check in him from the federal money, Don Boise. My friend went to pick him up and he had a check after losing a home; dropped dead.

I would just ask – and I know our state has worked so hard. That v-notch program worked so well. It was done out of our store. When those helicopters flew, any larvae that floated up to the top – when Ernie Beckwith was there, they flew and sprayed and the larvae just disappeared. It died. Eventually it gets to the bottom, because they are putting these methoprene pellets that last 60 days to 90 days in the catch basins.

The lobsters don't know where to swim. Now our side has been great. We haven't been using; very little inland. Our lobsters stayed alive for a good month, month and a half, before they died in New York and down the middle. I just would ask our DEP, who now found the pesticides in the lobsters – New York is not going to stop. Albany has no power over this one guy, Dom Ninivaggi, and I hope he hears me speaking, because he spoke – I spoke to him during the press conference just before they came.

Terry Barker, Sounds keeper state rep, who is a friend of mine, who has brain cancer; who if fighting it now; and when we went up to Hartford, he questioned the methoprene company. He literally told them what you are telling me is you are putting poison on the bottom of our water. That is in the food chain. Now I am clamming with my son and oystering now. Now I know chlorine and nitrogen, taught to me by the state, lives in the clam's bellies. Now the adulticides are all cancerous. When you cook them, as Senator Gunther said, they get four times as strong.

I just think there has got to be a way our DEP could look at this. No one is making fun of anyone; no one has tried harder in our state to get this going. I've been talking to Mr. Pat Augustine about this and Owen Johnson's man about this, but for some reason they can't control their chemicals.

Our politicians are going to go over and try to work with these guys, but it is too late. If you don't change these laws, trap allocation down to 500 traps, gauge is going to three and a half; the lobsters are too big right now. When the water hits near 80 degrees, which it will, they will run a hundred miles off the shelf like they do.

Now we v-notch, we v-notch shorts. In Newport I met a boat, Bill Colombo owned the boat, Timothy McVane; two or three years ago, catching thousands of short lobsters, v-notch keepers, and v-notch; I said where are they coming from? He says from Maine. They are about 80 to 100 miles out.

I asked our biologist, it was Colleen I asked, she goes they don't v-notch shorts up in Maine. I don't want to hear our lobsters don't run in and out that Sound, because half went through to Hells Gates and sat there in '99, because four fishermen went out there and the black lobsters that don't live in Jersey were all along the shoreline.

CHAIRMAN GROUT: Roger, I know you said you could talk all day and all night, but if we could wrap it up I would appreciate it.

MR. FRATE: Thank you very much for listening. I begged the commission; I beg our DEP and God Bless Craig Miner and our state for passing this one bill. It is a start. Thank you very much.

CONSIDER DRAFT ADDENDUM XXI FOR FINAL APPROVAL

CHAIRMAN GROUT: Any other public comment? Well, seeing none, we'll move **to** Agenda Item Number 4; Consider Draft Addendum XXI for final approval.

REVIEW OF THE MANAGEMENT OPTIONS

CHAIRMAN GROUT: Kate, would you like to go through a review of the management options and the public comment summary?

MS. KATE TAYLOR: This presentation is going to go through Draft Addendum XXI and the public comment that was received. We are currently at the Stage 2; approve final management of the document. In December 2011 the board approved the development of this addendum in order to respond to the poor condition of the Southern New England stock by scaling the size of the fishery to the size of the resource.

This addendum addresses changes to the transferability programs to Areas 2 and 3. These changes are designed to allow for flexibility in the movement of traps as the consolidation programs for Area 2 and 3 to address latent effort are implemented. The document is divided into two sections addressing proposed options for Area 2 and proposed options for Area 3.

Under Area 2 measures, the first issue under consideration is the trap allocation transfers. Current ASMFC rules allow entities to transfer full or partial allocations of qualified traps from one owner to another in accordance with the specific criteria in each state and federal law. NOAA Fisheries currently does not allow for the transfer of partial allocations, but is in rulemaking to consider this regulation. They do allow for the transfer of full business sales.

Under Section A of this option, Option 1 would be to maintain the status quo. Option 2 would be that allowance of two areas to be fished under the partial transfer of the multi-LCMA trap allocations. Under Option 3, two areas could be fished and this could be chosen annually; and under Option 4 all areas would be allowed to be fished.

Under the full business transfers, Option 1 would be the status quo. Option 2 would only allow for one area to be fished in a full business transfer. Under Section C, the transfers of a multi- area trap allocation full or partial; Option 1 would be to allow two areas to be fished. Option 2 would allow two areas to be fished, and these designations would be chosen annually.

Option 3 would allow all areas to be fished. If the board would like to consider the same measures for full and partial transfers, they can choose from Section C here. If they would like to consider them separately, then they can choose from A and B. Under the single ownership cap, this was previously called trap banking. Under Option 1, the status quo; no trap banking would be allowed.

Under Option 2, this would be a single ownership cap or an individual permit cap. This would allow for the purchase and accumulation of traps over the current 800 active trap cap for Area 2, up to a single ownership cap of 1,600 traps. There is also an option for a sunset provision. Under Option 1, there would be no sunset provision to the single ownership cap.

Option 2, the single ownership cap would expire one year after the last trap reduction; and under Option 3, this single ownership cap would expire two years after the last trap reduction. The Area 2 aggregate ownership cap is the next option item. Under Option 1 is the status quo. Under this option no single company or individual may own or share ownership of more than two qualified Area 2 permits. This option limits permits and not the number of traps.

Under Option 2, an entity could not own more than 1,600 traps; so this would be the 800 active and 800 banked traps. For both options, those individuals who had more than two permits in December 2003 may retain the number they had at that time, but they can't own or share ownership of any additional permits.

Under the measures for Area 3, the first section is very similar to what was in the document for Area 2 dealing with trap transfers. Under Section A, the partial transfers of a multi-area trap allocation, Option 1 would be the status quo. Option 2 would allow that two areas can be

fished. Option 3 would allow that two areas can be fished, and those areas can be chosen annually. Option 4 would allow for all areas fished.

Under Section B, this deals with the full business transfers. Option 1 would be the status quo, and Option 2 would only allow for one area to be fished in a full business transfer. Section C would allow the board to consider partial and full business transfers the same. Option 1 would allow for two areas to be fished.

Option 2 would be that two areas can be fished, and this would be chosen annually. Option 3 would mean that all areas can be fished. Section 3.2.2 proposed as an Area 3 endorsement; under the status quo there would be no change. Under Option 2, the LCMA 3 designation; under this option, the area selected would be noted on the permit and remain in effect for the entire fishing year. Fishermen would be allowed to change the area of designation once per year as part of the annual permit renewal process effective in the following fishing year.

Endorsement of Area 3, Southern New England, would not restrict fishing in all of Area 3; however, the most restrictive rule would apply. The rationale is to allow the Southern New England portion of the area to fish at a higher number of traps as they historically have. The next three options address measures to inhibit the excessive consolidation of the industry.

Under the active trap cap, this refers to the maximum number of traps that any Area 3 lobster permit holder may actively fish. No single vessel with an Area 3 permit may fish more than the maximum number of active traps. Under the status quo, no action would be taken. The trap cap for all of Area 3 would remain at 2,000 traps.

Under Option 2, the active trap cap option, the active trap cap at the commencement of transferability will be 2,000 traps. This cap would be reduced by 5 percent per year over 5 years for Area 3. Individuals opting to designate the Area 3, Southern New England endorsement area will continue to reduce traps below this endorsement area's 1,800 active trap cap to complete the required trap reductions of 5 percent per year for 5 years.

The permit owner would then have to buy his way back up to the 1,800 active trap cap. Under Section 3.2.4, the single ownership cap or individual permit cap, this allows for the purchase and accumulation of traps over and above the active trap limits. Newly purchased traps along with traps already owned by the permit holder may combine to equal the number of traps necessary to go through the active reductions, so that the final trap level of the holder is 1,800 traps.

This schedule assumes that NOAA Fisheries will implement a 2,000 trap cap with the next set of federal rules and phase in a 25 percent trap cut during the next five years. Section 3.2.5 proposes an aggregate ownership cap or dealer accumulation limits. Under the status quo, no single company or individual may own or share ownership of more than five Area 3 permits.

However, those individuals who have more than five permits prior to December 2003 may retain the number that they had at that time, but may not own or share ownership of any additional permits. Under Option 2, under this option no single company or individual may own traps greater than five times the single ownership cap.

If the existing lobster management program is revised, the American Lobster Board will designate the dates by which the states will be required to implement this addendum and the board will also determine which measures are appropriate and should be recommended to NOAA Fisheries for the implementation in federal waters. Thank you, Mr. Chairman.

CHAIRMAN GROUT: Any questions for Kate on the addendum at this point? Seeing none; can you provide us an overview of the public comment received on this?

PUBLIC COMMENT SUMMARY

MS. TAYLOR: I would just like to make a note in the memo that went out to the board. In the

final table, AOLA and Cote Fisheries were both in favor of Option 2 under Section 3.2.3; the Area 3 active trap cap; and Options 2 under Section 3.2.5, the Area 3 aggregate ownership cap. This was included in the text, but the accompanying table put the X in the wrong box. The text reflects the correct comments by these organizations.

For written comments, one individual comment was received. Seven comments were received from organizations. The majority of comments received were in favor of the active trap cap in Area 3; a single ownership or individual permit cap for Area 3; an aggregate ownership cap for Area 3; and half were in favor of the status quo for the Area 3 endorsement.

Other comments were in support of the status quo for Area 2, partial transfers. Option 2, one area could be fished for full business transfers for Area 2; and Option 3, all areas could be fished for transfers of multi area trap allocations in Area 2. One joint public hearing was held between Massachusetts and Rhode Island on June 26, and four individuals attended.

For Area 2 options, comments were provided in support of allowing all areas to be fished when transferring a multi-area trap allocation, to have a single ownership cap which will sunset after two years, and to have an aggregate ownership cap of 1,600 traps. For Area 3 options, comments were in favor of the status quo for partial transfers; and Option 2, all areas can be fished for full business transfers as well as for an active trap cap.

CHAIRMAN GROUT: Questions?

MR. PETER HIMCHAK: Kate, I'm going to have to ask you when you started out talking about the public comments you said that AOLA and Cote Fisheries; there weren't boxes checked in 3.2.3, Option 2; and then there was another one that I didn't have the chart in front of me to mark. Could you give me those again?

MS. TAYLOR: Yes, they were in favor of Option 2 under the Area 3 active trap cap; and Option 2 under 3.2.5, which is the Area 3 aggregate ownership cap. The text reflects the correct comments submitted by these organizations.

MR. HIMCHAK: Okay, could I ask you one additional question? A joint public hearing, Rhode Island and Massachusetts and four people show up, is that a reflection of the complexity of this document or is it a reflection of the fact that the organizations such as the AOLA has better communicated and gotten the consensus of the fishermen to make the comments on this addendum? This addendum is tough; I'm telling you.

When I look at what is in the best interest of New Jersey fishermen, I want to know where their comments; how they're being funneled into the process. I'll be very straightforward from the beginning here. In Area 2, since I view this as a business plan essentially, I am reluctant to vote. I'm deciding to abstain on Area 2 issues with this trap transferability program strictly because I don't see a resource implication for; that may trickle down to New Jersey.

If I don't understand the complexities of this transferability program, I don't want to be a factor in somebody's business being harmed. Just so you have that understanding of where I'm coming from.

CHAIRMAN GROUT: Thank you Pete; this has been a complex process. I think we've gone through a number of iterations with this to get down to this particular point. One of the main goals of this is to have a reduction in latent effort in both Area 2 and 3. At least personally I feel this also has a resource impact, too. Are there any other questions or comments on the public comments that were provided?

MR. PETER BURNS: I just wanted to briefly address the comments that NOAA Fisheries submitted to the commission on Addendum XXI. Really, in general our comments were that we were concerned that now that – as the board knows, NOAA Fisheries is in the process now of implementing the foundational elements of the lobster trap transfer program that are already incorporated into the existing management plan.

As we move forward toward that end very soon, we're concerned about new elements being added in Addendum XXI and also changes to some of the measures that are already in the plan that we're getting ready to implement now. When we received – I guess it is just difficult for us to begin to implement a program and then have changes coming that would also need to be added to be part of the full plan, I guess.

When we provided our comments, we were also receiving comments on our proposed rule for transferability from the industry. There were some common themes from the commenters in that, which were implement transferability as soon as possible, because the trap cuts that are coming are going to have devastating effects on some fishermen.

That is what they're saying. That is not coming from me, but from the industry. They are also saying you can't do transferability without a database being complete, and at this point the database isn't done and it hasn't incorporated anything in Addendum XXI that is going to be able to allow transferability to get to the next level.

The critical element to Addendum XXI I think, and I think the board would agree, is banking; because without banking you can't bank yourself up to prepare for these trap reductions that are coming in the future. I think the thing we wanted to point out is that we're getting to the point now where we're implementing the basic elements of this program, and some of this isn't done yet.

Maybe some of those additional elements are going to be decided upon today, like banking, but it is going to take time to add those things into the process and into the database. I think we all need to know; and based on these comments that we got from the public, from the fishermen saying that these trap cuts coming were going to be devastating, I think we all know that we have to get transferability right the first time, because there is no turning back once people start paying real money for lobster traps.

Just with the trap cuts coming, with these changes coming, as we're approaching the point where we're trying to have a very aggressive timeline in place to not only qualify and allocate federal lobster permit holders in Area 2 and in the outer Cape, to complete the whole circle of area qualification; but then to try to get in a transferability opportunity for these folks, I think some people may very likely know who they are going to be transferring with, but there may be some who aren't.

I think that there needs to be some kind of lead time to allow that market to develop for finding buyers and sellers, if you will. Without going much further, I think what NOAA Fisheries really just wanted to do was get on record and indicate that there are a lot of things that are going to be happening very soon. Some of them aren't done yet. It is not just about Addendum XXI. It is about the current transferability measures that are already in place and ready to go out.

It is also about trap reductions that are coming and using transferability as a means to mitigate around those things. A lot is going to happen very soon, and I think when the commission's Lobster Board looks today to approve Addendum XXI or do whatever they end up doing, we have to look at this in the whole picture and not just the sum of its parts.

CHAIRMAN GROUT: Thank you, Peter; I have a question for you. There isn't anything in this plan if we were to approve that would prevent you from continuing to move forward with your rule-making process and qualifying – assuming those rules go through, qualifying people and then finishing implementing trap transferability at the federal level. There is nothing, if we approve today this particular document in some form, that is not going to prevent you from continuing to move forward, correct?

MR. BURNS: We intend to move forward with our final rule to implement trap transferability. Anything that gets approved in this plan today would have to go through a separate rulemaking, so banking or any of these other measures that

may be critical to the effective implementation of a trap transferability program.

We'll do our best with what we've got to move forward and qualify, work with the states to do that. We sent out letters this week to the relevant states to ask for their data for Area 2 and Outer Cape qualifiers to be able to work toward that end. We're doing that; but without a database that is going to do this, our rule could come out tomorrow, but trap transferability isn't going to work.

CHAIRMAN GROUT: I think what is also a critical point right now is the fact that the database does not appear to be ready. We need to be talking to our counterparts at ACCSP and the people that are in the process of developing this database; that it needs to be ready for implementation and ready to go here as soon as possible. Is there anything that we could do here as a board to try and push that along?

MS. TONI KERNS: Doug, I think that the states and ACCSP recently have been pushing that a lot faster and more. We are actively meeting probably every couple weeks, maybe every three weeks on the database, trying to iron out a couple of issues. It is moving forward. I can't give you a definite date of when it will be ready, but we are shooting for September 1 to be able to use it as a trial to work out any kinks.

CHAIRMAN GROUT: That sounds excellent. Are there any other questions on the comments at all? Okay, we're at a point now to consider final approval of Addendum XXI. Is there any discussion right now?

CONSIDER FINAL APPROVAL OF DRAFT ADDENDUM XXI

MR. DAN McKIERNAN: Doug, how would you like to handle this? Would you like to deal with Area 2 first?

CHAIRMAN GROUT: Sure, we could do that.

MR. McKIERNAN: At least first as a discussion point.

CHAIRMAN GROUT: As a discussion point, yes.

MR. McKIERNAN: Well, I would like to discuss Area 2 in some detail. I would like to make a set of motions that will accomplish the following. First of all, I would like to just thank the states who aren't part of this process for all of their patience, because it must be painful and I appreciate that.

But what we're trying to do is we're trying to create a complex system that is crossing jurisdictions and lobster management areas. It is a tough, complicated solution to some of these problems. But what we would like to do is we would like to accomplish with the motion I would like to make flexibility in the areas that a fisherman can retain.

Because if you recall, we have two; actually three lobster management areas that each have their own historical performance period, and traps were allocated to each person who was eligible. These independent allocation schemes, independent datasets have to be brought together. When the fishermen see that they are going to be brought together, well, they really want to maintain all of the aspects of those.

A strong theme coming out of the inshore fishermen of Area 2 is that they want to maintain that flexibility to the degree possible. That is an area that I've been watching very closely in working with the ACCSP folks as the database is developed to see if it is possible to retain the so-called multi-area trap allocations, a boat or an entity or however we describe this.

That is part of the challenge of this database; who are we permitting, who are we licensing, who are we identifying? In the state level it is the person and on the federal level it is the boat, so it is complicated to finally force these together. It is worthwhile, but it is complicated. The industry really wants to maintain that flexibility.

I just want to go on the record and say that I was initially opposed to the flexibility concept. In our view back home in Massachusetts if the

industry wants area management, well, make them fish areas, specific areas and stay there. But with these massive trap cuts coming and the fact that especially for Area 2 and Area 3 in Southern New England – it is a single stock – it makes sense to accommodate to the degree possible the maximum flexibility; so that if fishermen did obtain allocation to fish in the offshore zone, that Area 2 fisherman could venture out there.

I want to accomplish flexibility in the areas retained. I want to accomplish some flexibility in the system to allow allocations to be kind of stored up, to withstand the cuts. The cuts in Area 2 are going to be almost 50 percent; and so a lot of guys are ready to weather that storm, and they want to be able to grab some allocation in advance of that from someone who is retiring.

We need the system to accommodate that. We want to accomplish some ownership caps. Area 2 is still an inshore area. It is like Maine, like inshore Massachusetts, the features of this fishery are like single boat for the most part, owner/operator. Not everybody, but I think that the predominant characteristic of this fishery is owner/operator, single boat; so I want to retain that.

Of course, the sunset thing is important; because if we create a system where everybody is allowed twice the allocation as the trap limit, then that business model could become really common where you have a bunch of entities that all own two boats. I think in my conversation with the industry they want to retain that kind of one boat owner/operator, small business feel. One boat accomplishes that better than two boats per entity. Those are the things that I heard from this Southern New England inshore area, too. I would be prepared to make some motions to accomplish that.

CHAIRMAN GROUT: Any other discussion at this point or would you like to have a motion on Area 2? I want the board to be aware of something that was brought to my attention concerning Area 3; and that is that the document that went out for public hearing had some tables in it that did not reflect what the Area 3 LCMT plan wanted.

They specifically apply to – and I will bring the board over to Page 13 and 14 – a single ownership cap table there; we were made aware of last week should have another year on it, Year 6, and a reduction to 1,800. Under Option 2 on Page 14, that table should have also reflected a Year 6 of 9,000 traps as the maximum number of aggregate traps.

There was also a part of Option 2 there on Page 14 that indicated that an owner may not increase trap ownership once NMFS control date has been published. That was applying to the people that already had in excess of five times the single ownership cap; the point being that if they had a bunch of permits with 1,800 traps associated with them, and one was, say, 800 traps associated with them; this would prevent them from buying up to their 1,600.

According to the comments from AOLA, that wasn't the intent here; that they should be able to have an aggregate ownership cap that would be essentially whatever the single ownership cap is times the number of permits that they have. In talking with staff about this – and I'll turn to Bob for his specific interpretation of this – I was concerned as chairman that this was a significant enough change that we might have to go out for public hearing, because that table does not reflect – both those tables on Page 13 and on Page 14 don't reflect what the intent of LCMT 3 was. I think there were three significant changes here, but, Bob, can you provide your input as to whether we need to go out to public hearing again on this?

EXECUTIVE DIRECTOR ROBERT E. BEAL: My take is similar to yours in that the text on Pages 13 and 14 didn't synch up with the numbers that were in the table. When folks were commenting on this, we don't know if they were commenting based on the text or based on the table. There is some discrepancy there.

I think the bigger concern, in my opinion, is the ability of fishermen to increase the number of traps for a permit under the grandfather clause.

That ultimately could potentially result in more traps in the water and more fishing effort, which is less restrictive on the fishermen and provides more flexibility to the fishermen; but on the other side it provides less conservation for the species.

There may be some folks that are interested in commenting either way on that issue. My opinion, as I said, is similar to yours, it probably should go back out to public comment. But if the board is very comfortable that they've got a record that reflects folks were commenting based on the table and not the text or the text and not the table; the public was clearly indicating they wanted the ability and increased flexibility to be able to increase permits associated – I mean, increase; traps associated with certain permits under the grandfather clause, then you may not need to. But the more stable position, more durable position for the board may be to go back out to public comment and just have a quick turnaround between this meeting and the October annual meeting and revisit those issues at that time.

CHAIRMAN GROUT: As I said, that was my thought on this, and I think we would be on firmer ground if we went back out to public hearing. Now, also one of the things I think we have to deal with here is when this is going to be implemented. Hearing some of the comments from the National Marine Fisheries Service, even if we were to approve this today, a lot of this we would have to be recommending to National Marine Fisheries Service that these be put in place, and they are going to have to go through a completely separate rule-making process.

Otherwise, we wouldn't get trap transferability in place next year, which is what I think the states and the public wants to have put in place right away. I don't see at this point any critical loss in time if we were to just send this back out for public hearing with the corrected document and then make the final decision at the annual meeting in October. I will leave that open to the board to see if anybody seriously objects with this process.

MR. PATRICK H. AUGUSTINE: I don't object to the process. I do object to the process of going through the full-blown process. It seems as though the number of people that did show up to pass judgment and make comments on it were so minimal, that to go through an extended period doesn't make sense.

On the other hand, could we not send out a corrected document to the public and put it on our website and so on and accomplish exactly the same thing, if we could do that. It is not going to speed up the process with the federal side. They still have to deal with that full process they have to go through.

But it will show I think the public that we have all good intentions of moving quickly and as appropriately as we can with this without slowing it down. Can we do that in a shortened time as opposed to going out as a full 30-day cycle or 60-day cycle, Bob? I'm not sure; can we do it on a 10 day or 20 day, and would it be beneficial? If it wouldn't be beneficial, then no.

EXECUTIVE DIRECTOR BEAL: I don't think we can short-circuit the 30-day public comment period. That is hardwired into the plan; to make changes, you need 30 days for public comment. That does not require public hearings. The changes in the table versus text issue are relatively minor, all things considered. The states don't have to have public hearings. We don't have to have staff running up and down the coast doing these hearings. It is a fairly simple 30-day process. There is plenty of time between this meeting and the October meeting to do that.

MR. McKIERNAN: But I hope that in the next 30 minutes maybe we can take some votes on some of the non-controversial parts so that the document, when it goes out, will only highlight the parts that were unresolved. Can we resolve some of the options today?

CHAIRMAN GROUT: Is that important to you to have the decision-making split up into two different meetings?

MR. McKIERNAN: I think it is. I think because we are developing this database, it sends a signal to the database developers about how this is going to function in the future. I think we need to make as much progress as we can. I think that about 80 percent of this is resolvable today. Then final approval could come on the total document, but I think it would be better if we took those votes today and then cleaned up the document and got rid of the nonessential parts that we'll throw on the cutting room floor today and then have a cleaner document to comment on.

CHAIRMAN GROUT: Bob, do you see any problem with taking votes on part of this document and then going out to public comment on the whole document, putting it out there knowing that half the document we have already made decisions on; do you see any problems with that?

EXECUTIVE DIRECTOR BEAL: It is obviously different than a normal process. I think staff can probably capture those transactions pretty well in the document, but it does create a strange spot where you've got an addendum that is partially approved, and then you go back out for public hearing for the remainder of it. You could do an entirely separate document and go back out, and that becomes Addendum XXII, if that is what the board chose to do. There is nothing that prevents it, but it just needs a pretty good paper trail of what happened.

CHAIRMAN GROUT: Yes, I would almost think you would have to separate and have a separate document. I think it would be much more advantageous, personally, if we made these decisions all in one document. This is essentially going to be a quick 30-day turnaround. In two months from now we're going to be making these decisions at this point.

But if the board feels that this is important to move forward right now with essentially the first half of the document and split it out, if people want to speak strongly for that, I'll be glad to take that into consideration. I'm going to go to Dave Borden; you had your hand up. I would also like to at this point, since I'm calling on Dave for the first time, recognize that Dave is acting as a proxy for Bill McElroy, and Dave was a long-time administrative commissioner for the state of Rhode Island. Welcome back, Dave, to the commission.

MR. DAVID BORDEN: It is great to be back and seeing a lot of old friends. I would just like to follow up on Bob Beal's suggestion. I think it is a good one. There is nothing in the rules that require us to send this out to public hearing. This is a minor technical revision to a document. For the point of clarity, I think the option that he suggested is the appropriate course of action.

You basically clarify these points that you rightly raised, Mr. Chairman, in the document, and then put it out to notice for 30 days and solicit comments from the industry on the point. That way the record is clear, everyone is clear on what the proposals are, and everyone has an opportunity to comment.

On the issue of whether or not we need to vote today, I would encourage us to vote on the items in this packet that are clear and where there are preferences. We can defer action on these other points that you've raised until a subsequent time and then vote on those. The point that others have made here, I think it is critical to send a message both to the National Marine Fisheries Service and to the industry as soon as possible these are the items that we support, so that there is a very clear record that everyone can utilize in support of their deliberations.

I urge Dan, who sounded like he was willing to make a motion on Area 2; I would urge him to do that. The other point I would make, and then I will be quiet, is that I think it is very helpful to discuss Area 3 and Area 2 measures entirely separately. They are different issues, and they will get confused if we jump back and forth from Area 2 to Area 3. I just urge us to focus on Area 2, take whatever progress we can do and then move on to Area 3.

MR. THOMAS P. FOTE: If we're going to go through the process of looking at this and then basically three months from now we'll start

going through the same document again, the only way I could support this is we split them out. The things that we can approve today, we approve that and you start a new addendum on what you basically can't approve today, if you want to go back out. This process is long and dragged out and we've been doing it for a while.

I just don't feel comfortable voting on things and then three months from now things are going to change, or maybe something else comes up and we go revisit the same things we started today, because I know that has happened on every meeting on lobsters and everything else. If we're going to start discussing, then we should pass it, separate it out and then that is finally done.

Then the items you didn't feel comfortable, Mr. Chairman, approving today, and we want to go out to the document, split them out. We've done that many times in management plans, split out an addendum and handle things for later on. I don't want to start a discussion going through approving things and then three months in October we're sitting here going through the whole plan, because we've got to approve the whole plan. It has got to be a roll call vote. We can't do any of that today unless we're going to approve the whole document – unless you split it out.

CHAIRMAN GROUT: Before I go to Ritchie I have a suggestion here on how we could accomplish this without taking final vote and still get it where what Dan and Dave would like to do is put out a message that this is the direction we're going, at least with our preferred direction, and maybe what we could do is what the councils do.

We could select preferred options at this meeting and put that out in the document that these particular options are preferred options, and then make final comment, make final decisions of the document as a whole at the October meeting. That way we wouldn't have to split things out. We wouldn't be making final decisions, but we would be telling the public and the people putting the database together that these would be our preferred options contingent upon what comes out of public comment during our public comment period. I would be interested in hearing comments using that process.

G. RITCHIE WHITE: I would support your suggestion. I would not support voting on the Area 2 for the following reason. We could vote those in; and then as Tom suggests in October change it. We would be telling the public, when we send this document out, that we passed certain things, and then we could undo those at a later date.

That would not be fair to the public, I don't think. I think your suggestion would work. I am not convinced of the argument that there is any reason not to wait until October. The National Marine Fisheries Service has talked about their timeline, and I don't see that we're delaying anything by waiting until the October meeting.

MR. FOTE: I would be more comfortable if we went and split it out, because you are still doing the same thing by having preferred options. Now you would change the document that you basically sent out to hearing before, because you put preferred options in there. Are you going to go through the whole process of the whole document since you've now changed the document with preferred options in there?

I think it is really confusing and it doesn't suit the process well. I truly think if you want to vote on certain parts of the plan today, a vote put them down, put them up; because then we're done with them. Then we only have to deal with the ones that come up in October that you feel comfortable like you have to go out to public comment for.

MR. MARK GIBSON: I think we could act on this on the whole thing today. I think these inconsistencies between tables and the text are minor. This is an action by and for the industry. We've never had this much industry input. They are well aware of what it is about, what its intentions are, and they know what they want in it.

I suspect I can't get that entire enchilada today, but I would strongly encourage actions and votes on those issues where there isn't any confusion, because we've been meeting by phone every couple of weeks with the ACCSP folks, and they are on a fast track to develop this database. They ask us very difficult questions every week.

One of the refrains we get back, once we've answered those questions to the best of our ability, is but you really don't know what is going to be in the addendum, because you are still developing and so on. We have to provide definitive answers for them now if we're going to have a database available to support transferability in the next fishing year. That doesn't just start in the spring of 2014; that starts at the end of 2013.

We have to start entertaining orders, evaluating transfers between that former allocation to the allocations; and the Service needs answers as well, as they pointed out. They are still implementing parts of an existing program, and these have some differences relative to past actions. I think we've got to make some significant decisions today on those areas where there is clarity and not leave them to a further development in an annual meeting decision. I think we'll put ourselves in a difficult spot and ACCSP in an impossible spot.

MR. ADAM NOWALSKY: I appreciate your attempt at creativity with regards to the preferred option scenario. I would just be very cautious of that approach based on the idea that we're saying we're doing that because of a typo or two in this document, essentially an omitted line from a table.

What happens when we're sitting here tomorrow and somebody comes up from public comment when we're dealing with eels, where somebody finds a typo in the document and suggests to us; well, let's fix it, give us your preferred options and then we can come back and comment again on that at a future meeting? I appreciate that idea, but being that it is not something we typically do, basically showing our cards ahead of time, I think that it would be a dangerous precedent to set at this point today.

CHAIRMAN GROUT: Any other comments?

MR. AUGUSTINE: It has taken a long time to get to this point. To see it all go for naught does not seem to make sense. The document that we've got before us is probably about the best we're going to get. We listened to the issue that we've got with the National Marine Fisheries Service. They're doing the best they can. In the meantime we've gotten this far. There is no reason to send it out twice.

The idea is just send it out once and be done with it. We sent it out once; we got the comments back from it. I think it is incumbent upon us to make the move. This is one of those cases where the board has to step up to the plate and do what they have to do. The information that was incorrect is going to be corrected simply, if I understand it. It is not going to take any action on the public's part.

It is going to take action on the staff's part to get the information out to the public for information purposes, if you will. It is not for assessment; it is not for change; it is not for suggestions or recommendations. It is just correction. I would hope that the folks that want to move this along will make some motions to get it done. If not, I will take the bull by the horns and make some choices and get them on the table for debate purposes or second purposes.

CHAIRMAN GROUT: I'm going to go to the audience. There is one person that has had her hand up very patiently. Bonnie.

MS. BONNIE SPINAZZOLA: I would like to agree with what Pat just said and also with what Mark said. There are technical corrections that have to be made, there is no doubt. The language in the document is absolutely correct. Getting back to what Pete was asking earlier, the industry is well aware of what the meaning and the intent of this document is.

Frankly, I don't even think they looked at the tables, because they didn't need to. They knew what they said; they know what is being done. They know that the industry representatives and the agency and everybody else worked together

to craft the document, and you guys have voted on it and we've worked on it for so long.

I think if you feel that it needs to go out to public hearing, I would take just those areas that specifically need to. The rest I think you should really go through it, get it done. My preference is it is a technical problem. The language is correct. You really don't even need to go out to public comment.

But if you all feel that you need to, then couldn't you possibly just bring those three issues out, let the public know that it was a technical issue and that the language is there, the tables should be thus, and then the board can vote on the things that you've already sent out for public comment today. Just get it over with, and make an agreement that you will send it out 30 days, public comment, and then the board will then vote by e-mail to approve what has come in and then send it off to NMFS. I would assume – and I didn't give them time to answer the question, but 30 days is okay. When you start talking about 60 days or three months; that starts to eat into their time schedule, and I think that is what we're all trying to keep from happening. It is just a suggestion.

EXECUTIVE DIRECTOR BEAL: Hopefully, this will be helpful and not hurtful. Listening to the comments around the table, especially the states that are associated with Area 2 and the folks that have been very involved with the database management; they make very good points I think that the folks at ACCSP need more detail to keep moving forward.
Without those questions answered, they are sort of wandering around developing a database that they don't know all the final rules for. It seems process-wise that the cleanest thing maybe to do is go through Addendum XXI, approve everything that you can. Then that is a final, done product, Addendum XXI. Then there is a new addendum called Addendum XXII, which is going to correct the three issues and include any other issues you could not approve through XXI.

Then that will be the document that is approved via e-mail vote or some sort of vote, and it will go out for 30 days public comment. Then they will have the final decisions on Addendum XXII at the annual meeting. At least listening to what folks are saying, there seems to be a number of pieces that can be approved under XXI, and the board can make some progress today.

CHAIRMAN GROUT: Hearing that; would you be comfortable with splitting that out and we would choose options and approve XXI with everything but Sections 3.2.4 and 3.2.5? We would split those two out, make the changes that need to be made, we'd go to public comment period on that and then have those two sections, which would be for Area 3, the individual permit cap and the aggregate ownership cap sections.

MR. DENNIS ABBOTT: Can you do that in the next 12 minutes?

CHAIRMAN GROUT: I think some motions are up there; and if there are no objections – is there any objection to going through that process? Keep in mind that we also have to come up with an implementation date with the motions that are being – as part of one of the motions that we're going to need here. Without any objection, do we need to take a formal vote to separate this out, Bob, into two addendums at this point?

EXECUTIVE DIRECTOR BEAL: No, I don't think so. I think what you're doing really is status quo on those two issues that you're not taking action on here, which is always an option, and then you're going to revisit those in Addendum XXII.

CHAIRMAN GROUT: But we'll have to at the end of this process move to initiate Addendum XXII that would include those two sections.

EXECUTIVE DIRECTOR BEAL: Yes, and I think you can do that through board concurrence, if you wanted to, when you get done with all the work on Addendum XXI, the final approval there.

MR. McKIERNAN: I have some motions that will accomplish some of this, and I've given them to Kate. Kate, if you could put them up on the screen and hide the first two, I've been told

that the first two are redundant and that the third motion accomplishes what is intended in the first two. Doug, shall I read them?

CHAIRMAN GROUT: Yes, you're going to have to read the motion. Are you going to take them all at once?

MR. McKIERNAN: I would like to take four motions up for Area 2 first. **It starts with for 3.1.1, Part C (multi-LCMA trap allocation): Adopt Option 3, which allows all areas to be fished. I would like to add a phrase at the end of that which says, "and the multi-LCMA history to be retained in the database.**

My next part of this motion is for 3.2.3, (ownership caps): adopt Option 2, which creates a single ownership cap of 1,600 traps.

Next part, for 3.1.3 (sunset provision for the single ownership cap): Adopt Option 3, which would sunset after two years after the trap cap. This means that two years after the last of the six annual scheduled traps allocation reductions, permit holders would not be allowed to own more than the Area 2 trap limit that is currently at 800 traps.

The last part is 3.1.4 (aggregate ownership cap or ownership accumulation limit): Adopt Option 2, which replaces the status quo of two permits per entity and replaces the limit with 1,600 traps.

CHAIRMAN GROUT: Do we have a second? Okay, Pat Augustine seconded it. Is there any discussion on this motion?

MR. ABBOTT: On the first part of the motion, there was verbiage added in the multi-LCMA history to be retained in the database: is that something that was in the document?

MR. McKIERNAN: Yes, it actually was part of Part A, 3.1.1, so I'm bringing that phrase down, because it was pointed out to me that Part C accomplishes what A and B does. I thought that point was important, because that is what is being debated intensely among the LCMTs and the state folks and ACCSP about this database. Is it going to accept when a trap allocation is transferred, the historical aspects of it? For example, if somebody has an Area 2 allocation and an Area 3 allocation of 400 traps, when they transfer that, does the recipient get both aspects? By making that addition of being clear that, yes, the database is going to receive and the recipient will hold in the future both aspects.

CHAIRMAN GROUT: Any other discussion on this motion? Are you ready to vote on this? I'll give you ten seconds to caucus.

(Whereupon a caucus was held.)

CHAIRMAN GROUT: Okay, are you ready to vote? All those in favor of this motion raise your hand; all those opposed; abstentions; null votes. **The motion carries 8 to 0 to 3 to 0.**

MR. McKIERNAN: I have some motions for Area 3. I've given the staff seven and I would like to exclude the last two, because those are the ones that you pointed out need to be postponed. Move to adopt the following elements of Addendum XXI for Area 3. For 3.2.1, Part A (partial transfers of multi-LCMA trap allocations) –

CHAIRMAN GROUT: Dan, I think the same thing applies to this; because if you read in the document Parts A and B; if you're going to approve C –

MR. McKIERNAN: We'll go right to C**. For 3.2.1 Part C (Multi-LCMA Trap Allocation): Adopt Option 3, which allows all areas to be fished. Then I will add "and the multi-LCMA history to be retained in the database. Kate, are you good with that? Next part for 3.2.2 (LCMA endorsements): Adopt Option 1, which maintains status quo - no Area 3 sub-area designation. Finally for 3.2.3 (Active Trap Cap: Adopt Option 2, which would cap traps at 2,000 in Year 1 and 1,548 by year 5.** Maybe I should delete that one, because that is the one that is in error as well, right Doug? Is that accurate?

CHAIRMAN GROUT: That one is accurate.

MR. McKIERNAN: Okay, so we'll keep that one.

CHAIRMAN GROUT: I've been advised by staff that it might be more from a procedural standpoint, proper on Sections 3.2.4 and 3.2.5, that we make a motion for status quo for now and then approve that. Then go to an addendum that would include that Section 3.2.4 verbiage, including the two options.

MR. McKIERNAN: Would you like me to make that on the record?

CHAIRMAN GROUT: Yes.

MR. McKIERNAN: **For 3.2.4, adopt status quo; and for 3.2.5, adopt status quo**.

CHAIRMAN GROUT: Do we have a second? Pat Augustine. Discussion on this motion?

MR. BURNS: Not to complicate an already complicated motion here, I can see how the board would like to move forward with some of these where there is some clarity, but I do have some concern about actually selecting an option for those two elements that we think we're going to split out into another addendum. I'll just throw that out there and see if anyone else has the same concerns about that. I can see how it would help from a procedural standpoint, but it almost makes it look like we're making a decision already.

MS. TAYLOR: By choosing status quo, it would just assist in following the administrative record. In the press release we would mention that status quo was chosen, and that status quo was chosen in order to take these options back out for public comment for further consideration.

CHAIRMAN GROUT: Okay, are there further comments on this? I'm going to go to Pete and then I'll go to the audience for any comments on this particular motion.

MR. HIMCHAK: Yes, I agree with what Kate said, but make sure that it doesn't give the impression that this is the preferred option in the explanation.

CHAIRMAN GROUT: It would be a decision that we're making on this, which would then be followed up with a new addendum that is going to include – and we are going to need a motion to initiate a new addendum that would include Section 3.2.4 and 3.2.5.

MS. KERNS: If it is helpful, Pete, sometimes when we adopt status quo we actually do not – oftentimes if we have an addendum where we adopt status quo, that addendum doesn't get published because the FMP already reflects those measures. When we publish this addendum for the options that we picked status quo for, those sections would be dropped. It wouldn't show those status quo measures in this addendum and Addendum XXII would have the options in there. The press release would be clear, and the introduction of Addendum XXII would be clear what the intent was and why we are moving in the direction that we are. We can have preferred options listed in the addendum as well.

CHAIRMAN GROUT: All right, I'm going to go to the audience right now on the motion that is on the board. Does anybody in the audience want to speak?

MR. DAVID SPENCER: My initial concern I think has been taken care of; but I think if we don't take those out of what goes out to industry, you are sending the message that is a preferred option. As long as that is very, very clear, I'm okay. But if the language stays like that, then I think the board is telling industry this is our preferred option.

MS. BONNIE SPINAZZOLA: Only because that does create confusion; if status quo is already status quo, why adopt it? As long as it is not being shown to the public, why not just leave it along or specifically state that you are going to drop 3.2.4 and 3.2.5 from this document and go out in a new addendum, just to ease the confusion.

CHAIRMAN GROUT: That is essentially what the staff was saying we're going to be doing is in the press release we're not even going to mention these sections, just the sections we've approved. Then we're saying we're initiating Addendum XXII that will address 3.2.4 and 3.2.5. I am going to give one last chance for comments on this motion.

MR. McKIERNAN: Is it clear in the motion that under 3.2.3, the active trap cap; that because we're not going to separate Area 3 by a sub-area designation, that the Area 3 Southern New England trap limits get dropped from this table. I just want that to be clear.

CHAIRMAN GROUT: I feel it's clear.

MR. McKIERNAN: All right, thank you.

CHAIRMAN GROUT: Seeing no further comments, I will give you 10 seconds to caucus and vote.

(Whereupon, a caucus was held.)

CHAIRMAN GROUT: All right, all states in favor, raise your hand; all those opposed; abstentions; null votes. **Motion carries, 9 to 0 to 1 to 0.** We now need a motion for an implementation date for Addendum XXI.

MR. AUGUSTINE: **Can we just add it in there move that the implementation date be effective; we said January 1 of 2014?**

CHAIRMAN GROUT: Is there a second to that motion? Are you raising your hand for a second, Mark?

MR. GIBSON: No, I have a question on the timing and the trap tag gear.

CHAIRMAN GROUT: I'll be glad to get the timing. Okay, Bill Cole has seconded it. Now I'll take discussion on it.

MR. GIBSON: Yes, I'm just thinking about the disconnect between the state and the trap tag gear. Given that we've posed thinking about initiating another addendum that wouldn't be approved until the annual meeting, this board and the staff might need to be thinking about a process by which the trap tag year would need to be extended in the event that the database hits some unforeseen snags. Alignment of federal and state allocations doesn't happen as quickly as we thought; we might be in a position we need to extend the trap tag year.

MR. BORDEN: Just to follow up on that same point; is the trap tag issuance date incorporated into an ASMFC addendum that says it has to take place? If it is not in an addendum, then I think that the board would have the flexibility what Mark just said, which was if it turns out that you need two more months to pull all of the rest of this together, then you would simply send out a notice and say we're going to extend the existing tags for two more months and then do it on the following day.

CHAIRMAN GROUT: Staff is suggesting potentially an earlier date so that the notices could go out to the license holders November 1st.

MR. AUGUSTINE: If that is their suggestion, then I move to change it. **Let's change the date to November 1st of 2013.** I'm not clear on the reason why again, so the lobstermen will receive their notice prior to the effective date and it will give them an opportunity to react accordingly; is that why we're moving it back to November 1st?

MS. KERNS: Pat, so that when the states send their letters to their fishermen of how many traps they can purchase or trap tags they can purchase, they could be aligned. Some states send those letters out earlier than others. I know Rhode Island is one of the first states to send those letters out. I don't know if November 1st would work for Rhode Island or not, though, if that would make it consistent; just so that we don't have to extend the trap tag date.

MR. AUGUSTINE: Do they need at least a 60-day notice or just a 30-day notice? That is through 60 days. What is the reaction of the other states?

MS. KERNS: The rationale for how we send the letters out is in order to separate out each state's purchasing of trap tags in a wide enough span so that the trap tag company has ample lead time to make enough trap tags for the entire coastline, which has been a problem in the past if we don't spread that out.

CHAIRMAN GROUT: Are you making a motion to amend your motion?

MR. AUGUSTINE: Well, based on what she just said, I didn't hear any resistance from the states that might be affected; that might have a problem with it. If it seems to be the appropriate thing to do, let's change it accordingly.

CHAIRMAN GROUT: I'll take that as a friendly amendment of your own amendment, and I'll see if the seconder, Bill Cole; you're okay? Now, Peter you had a discussion on this motion?

MR. BURNS: Yes just a comment. Now that the rubber is hitting the road here, I don't have a preference over November 1 over January 1. I just want to point out I was talking about delays earlier and inconsistencies with state and federal measures here that can cause delays to the implementation of the full realization of the trap transfer program. This just brings up I think we're going to have talk offline with the states and just see how this is going to work; because if now somebody from Rhode Island with a federal permit can now get 1,600 trap tags, we're altering the date now to address that administrative specific issue. I just don't know how this is going to work, and I think it is going to be really confusing.

CHAIRMAN GROUT: I'd appreciate hearing from particularly the states in Area 2 about this disconnect that could potentially come forward and develop as a result of the people that are federally permitted.

MR. McKIERNAN: Yes, I agree with Peter, there won't be any trap allocations that will be amended until Peter's gang finishes allocating and their system is up and running for the transfers. Peter is right that regardless of what this says, this doesn't actually kick off transferability. What kicks off transferability is the establishment of the database and Peter's work in his office.

The functional implementation date is going to be when all those events occur and everybody is comfortable with it. This implementation date is fine if the states want to notify their fleets of what the ASMFC approved, but the logistics of doing it is going to create its own delays.

CHAIRMAN GROUT: Any further discussion on this motion? All right, I will give you ten seconds to caucus on this. I know Joe usually likes these amended motions read into the record, so I'll just read it once: **move that the implementation date be effective November 1st, 2013. Motion by Mr. Augustine and seconded by Mr. Cole.**

Okay, all those in favor; all those opposed; abstentions; null votes**. The motion carries 10 to 0 to 1 to 0.** We now need a motion for implementation of Addendum XXI. This will be a roll call vote, but I'll ask for objections. Yes.

MR. AUGUSTINE: **Move to approve Addendum XXI as discussed today.**

CHAIRMAN GROUT: Is there a second? Terry Stockwell seconds it. Do you need time to discuss this? This is supposed to be a roll call vote. Is there anybody that objects to approving the addendum**? Seeing none; it is a unanimous vote.** Oh, you're in abstention.

MR. BURNS: National Marine Fisheries Service abstains from the vote. Thank you.

CHAIRMAN GROUT: Okay, is that proper, Bob? The vote is 10 to 0 to 1 to 0. All right, now we need a motion to initiate Addendum XXII with Sections 3.2.4 and 3.2.5 with the changes that have been discussed today.

MR. ADLER: **I'll make that motion, Mr. Chairman, to initiate Addendum XXII as corrected, Section 3.2.4 and 3.2.5.** Is that what you need?

CHAIRMAN GROUT: Yes, it is. Seconded by Dave Borden. Is that what you meant, Bill?
MR. ADLER: Yes.

CHAIRMAN GROUT: Okay, discussion on this motion. Dave Borden.

MR. BORDEN: I hope we follow the advice we got from the Executive Director on this basically and craft the addendum and put it out for a 30-day comment period. The state agencies have done this numerous times in the past. Unless you get a group representing 25 or more people, you don't have a hearing on it.

You simply take the public record and then vote it up or down via an electronic vote. I think we need to try to minimize the additional work that goes into this. This is nothing more than a technical change, and that would allow the full public discussion of it, but people would have to submit written comments.

CHAIRMAN GROUT: I think we would ask each state if they would want a public hearing on it. If you don't want a public hearing, then we don't have it and we just put it up on the website for public comment.

EXECUTIVE DIRECTOR BEAL: Just real quickly on the timeline; what the process will be is the PDT will go back craft this document, Addendum XXII, and then we'll have to circulate that to the board for approval for public comment. Then once that happens, that can happen through an e-mail or a fax vote, I assume.

Then we'll have the 30-day public comment period with any hearings from any states if they do want them, but it doesn't seem to be a lot of folks raising their hands. Then we'll bring that document back to the board at the annual meeting for final approval. Is that the timeline everyone anticipates?

CHAIRMAN GROUT: Seeing no comment on that; I think we're good to go in that direction. Is there any further discussion on this motion? Is there any objection to this motion? Do you need to abstain? Is there any objection to this motion**? Seeing none, this passes unanimously**. Okay, we'll go to Item Number 5 here, and I think we're going to hold off Number 6 until the next meeting, Kate.

REVIEW OF NOAA FISHERIES AMERICAN LOBSTER PROPOSED RULE

MS. TAYLOR: In June National Marine Fisheries Service published a proposed rule to limit access into Areas 2 and the Outer Cape Cod and to implement a trap transferability program in Areas 2, 3 and OCC. A memo was sent to the board detailing the items that were consistent with the commission's plans and also those items that were not consistent with the commission's plans.

The board did submit comments on some of the options under consideration prior to the public comment closure dates, which was on July 29th. I will be reviewing the options that went into the public comment letter and also those options that there was not a consensus on; and the board will need to determine if they want to submit comments to NMFS on those options.

The proposed rule is consistent with the commission's plan in that they intend to qualify individuals and limit access in manners that are consistent with the commission's plan for Area 2 and the Outer Cape Cod area. Additionally, they are consistent with the trap transfer programs in Areas 2, 3 and the Outer Cape Cod; specifically that NMFS is proposing the 10 percent partial trap transfer tax, the 800 trap tap for OCC in Area 2, and the implementation and use of the trap transfer database.

The proposed rule also will restrict allowable landings to those from ports or states that are in or adjacent to Area 2 and also is consistent with the Area 2 hardship appeal. Additionally, the proposed rule is consistent with the commission's plan with the two-month winter trap haul out. The commission recommended that the implementation for the two-month winter trap haul-out period would be consistent with those once they are promulgated by the Commonwealth of Massachusetts. NMFS has

said they will adjust the final rule to correspond with these closure dates.

Additionally, the proposed rule is consistent in that Area 1 qualifiers who hold a federal permit and purchase traps from Area 2, 3 or the Outer Cape Cod area would, upon selling any of their transferable allocation, forfeit their eligibility to fish in Area 1. For the management measures that are not consistent with the current or proposed commission plans and comments were not submitted to NMFS on include the Area 2 ownership cap, NMFS has said that they will consider an ownership cap once the commission implements these measures.

Additionally, there is the Area 3 trap cap of 1,945 traps. This is different from the Area 3 trap cap that was under consideration in Addendum XXI, which were 2,000 traps. NMFS has said that they will consider modifying this trap cap when the commission recommends amendments to the Service.

NMFS has stated that they will not impose a 10 percent conservation tax on full business transfers. Under the commission's plan, we require a 10 percent tax on all transfers regardless of if they are full or partial. Under the proposed rule, there would be an option for fishermen to opt into the trap transferability program.

The commission's plan contains no requirement to opt into the program. Additionally, the proposed rule has an allowance for dual permit holders to transfer traps with any other dual permit holder regardless of their state affiliation. However, the state/federal allocations must be synchronized at the end of the transaction.

This would allow for increased trap transfer opportunities for dual permit holders. Under the commission's current plan, a dual permit holder is restricted to transferring traps only to another dual permit holder form the same state. Under the proposed rule, if a dual permit holder purchases traps from a dual permit holder from a different state, then the buyer would not be able to fish the purchased traps in state waters until an equal allocation is purchased from a holder in that state.

There are also options in the proposed rule for a clerical and director's appeal process for trap allocation. The clerical appeal would allow for the Service to correct any errors that occur when an application is processed while the director's appeal would allow the state to petition the Service for comparable trap allocation on behalf of any Area 2 or OCC applicant that was denied by NMFS in order to respond to the fact that the states can implement different appeals' qualifications when allocating traps and help to ensure consistency between state and federal trap allocations.

Additionally, with the measures passed today, there will now be – with the allowance of the history of all areas to be retained for partial trap transfers; this is not consistent with what is going forward in the proposed rule. Option Number 6 here should also include the allowance of the history of all areas to be retained for partial transfers along with these first five options that the board will need to discuss if they would like to submit comments to NMFS.

CHAIRMAN GROUT: All right, comments from the board? We need to provide staff with input on these six items that are up on the screen, the sixth one being the retention of the multi- area fishing designations on each permit during a partial transfer.

MR. McKIERNAN: I think the board made it clear its intent that we'd liked those multi-LCMA aspects of the trap allocations to be retained, so I'm not sure I need to go into that. I do have a concern about NMFS not opting for a reduction in the allocation when a full business is transferred.

In Massachusetts we've been transferring Outer Cape permits for the last nine years; and each time we do it, we take 10 percent of the trap allocation away. We thought that was a good idea for conservation and also to reduce risk to whales, assuming that trap numbers were correlated with buoy line numbers.

I guess we would stop that if we're in a new era where full business transfers are no longer going to be taxed. I hope NMFS will reconsider that position, because there are a lot of good reasons to continue to remove traps from the systems.

MR. AUGUSTINE: I was just wondering if – I'm not sure Peter would have an answer to that; but why the federal government decided not to do that in line with Dan's comments about trying to reduce pressure on the fishery or reduce the amount of traps that were out there. Maybe it is not a fair question, but they are doing it and we're not. Peter, I don't want to put you on the spot, but if you could help us, we'd appreciate it.

MR. BURNS: Thanks, Pat, for the question, and this is an important issue. First and foremost this is still a proposed rule, so we appreciate the comments here and are glad to have the opportunity to have the whole board here to be able to comment on some of these, because there are a lot of complicated issues here.

I think one of the big things that come to mind is that while we don't have trap transferability in Area 1, and we've got a lot of full business transfers that happen all the time with lobster permits, so this is a long-standing business practice that we've had in our permit operations. To start taxing people every time that they transfer their permit, which happens very frequently in lobster, especially in the Gulf of Maine area, would be a substantial change from how we do business now. I'll just leave it at that.

I think the whole point of transferability is to really allow people to transfer traps and not their whole business. To us, that is a different thing than just trying to adjust your business and have some flexibility in your trap allocation through transferability, which would be subject to trap reductions.

MR. BORDEN: Mr. Chairman, two suggestions. One would be I think this is a very critical issue to the success of this entire addendum. I think the commission should send a letter to NMFS and basically ask them to reconsider that position and impose a 10 percent conservation tax on full business transfers.

I would also point out that all of the associations, the Offshore Association, the Massachusetts Lobstermen's Association, The Rhode Island Lobster Association all support that provision. It seems to me that if you look at the status of the resource; whale issues, turtle issues and conservation issues for lobster, it is kind of critical to do this. I would make a motion that the Commission Executive Director send a letter to the National Marine Fisheries Service asking them to reconsider that position and authorize the staff to fold in that logic.

CHAIRMAN GROUT: Do we need a motion for that? The commission was going to provide comments on the rules, and we were just trying to get input as to what aspects we should be commenting on – I think we've heard that loud and clear – and also concerning the multi-area being allowed to be retained with partial transfers. I think those are the two I've heard so far. Is there anything else?

EXECUTIVE DIRECTOR BEAL: Just a quick comment; if the group agrees with that sentiment to send a letter, we can do it. I think technically we should ask the Policy Board if that is okay since that has been the pattern or the practice; that letters going to the Service or anyone else under the Executive Director's signature approved by the Policy Board. We can do that as probably a formality more than anything else.

CHAIRMAN GROUT: Okay, I think that is appropriate. We'll just bring that up to the Policy Board.

MR. BURNS: Just for the sake of discussion on the topic, not to stymie the thoughtful comments of the board, I don't think I made my point clearly enough when I was trying to give the rationale for our stance on this full business transfer and the no conservation tax. I think this comes back to Area 1. We want to try to be consistent here.

We've already got an issue with the proposed rule that has to do with transferability, because we don't have transferability in Area 1. We don't have individual trap allocations by permit. It is a flat trap cap; everybody has 800 traps. That was one of the issues that we have that is in our proposed rule is that somebody who has an allocation in an Area 3 or Area 2 or the Outer Cape, and also is Area 1, if they sell those under the commission's plan, as recommended to us – if they sell those Area 3 or Outer Cape or Area 2 traps, they lose their Area 1 eligibility, and they can't fish the traps there anymore.

One of the main reasons is because there is no mechanism in place to be able to deduct 300 traps from somebody's Area 1 allocation. This is the same thing. We understand that some folks on the board might think that this is an important issue from a conservation standpoint to be able to continually reduce traps with a conservation tax on a full business transfer; but the issue is how are we going to do it? Again, lobster businesses get transferred a lot. Lobster permits get transferred very frequently. As it is we don't have any way to deduct their allocation.

REPRESENTATIVE WALTER KUMIEGA: I think the difference with the issue in Area 2 and 3 is you are trying to match effort to the resource. In Area 1 we feel comfortable that our effort and resource are compatible. We're not trying to reduce effort necessarily in Area 1. If we were, then maybe we would be thinking about it. Different goals here; Area 1, we're trying to maintain effort at the level it is so we don't feel like we need a conservation tax. Area 2 and 3 is a different situation.

MR. ADLER: If I may, Mr. Chairman, I would like to ask Peter Burns on this Area 1 issue; iIf someone has an Area 1 permit and actually ends up having an Area 3 allocation that he qualified for, and he says that if he sells his Area 3 and retreats into Area, 1 he can't fish there, the 800 thing is gone; what could a fisherman do if he's got that? Does he just hold his Area 3 and just not try to transfer them or sell them? What does he do? What does he do so he doesn't lose his right to fish in Area 1?

CHAIRMAN GROUT: Peter, do you want to respond to that?

MR. BURNS: Yes, Mr. Chairman. Our proposed rule hasn't gone final yet. We're proposing to do what the commission had recommended, which is if someone had a 300 trap Area 3 allocation, for instance, and wanted to sell those traps, they would lose their Area 1 allocation, because right now we don't have any mechanism to deduct 300 traps from their allocation.

By allowing them to sell those 300 traps, they would have an advantage over somebody in another area with an individual vessel allocation for each area where if we just let them keep fishing 800 traps and allowed them to be compensated for 300 in Area 3, we would have an issue there because we have no way to deduct it. That's it.

What they could do – I guess that is the other part of your question – is if we went forward with this the way it is, they could hold on to those 300 traps. They could buy 500 more in Area 3, and then they would have an Area 1 and an Area 3 allocation that balanced. Then they could work through it that way. Nothing would be taken away from them. If they sold the Area 3 traps, then they would lose their Area 1 eligibility under the current proposed rule.

MR. McKIERNAN: Let me just add some detail to this. When the industry adopted these plans, they referred to these as passive trap cuts. The active trap cut is different. That is when government comes down and says next year you're going to lose 25 percent of your traps, like is scheduled in Area 2 when we get to that.

But the passive trap cuts are upon transfer, so the recipient, when they go to obtain that permit, they are put on notice you are only going to get 90 percent of the allocated traps. Area 1 does not have an allocation; it is just a trap limit. In Bill's scenario, an Area 1 fisherman who has an Area 3 allocation probably isn't fishing it, because most people can't make a living on 300 traps in Area 3.

It is just sitting in his portfolio. In my view, when that person goes and sells his permit, that is a functional transfer of that allocation from the holder to the recipient. They are going to lose 30 of those traps, if there is a 10 percent passive trap cut upon transfer. That is how we've been working it in the state in Outer Cape and Area 2 for the past half decade or more. I think it probably adds a little bit more work, because every person who is going to go in the database with an allocation for one of these areas that has an ITT, when they change ownership, you reduce it by 10 percent. I hope that NMFS can consider that model going forward.

CHAIRMAN GROUT: Does the board have any other comments that they would like to have the – yes, I realize that, I just want to check – would like the commission to recommend to the policy board that they send a letter on these comments. Seeing none; but I see one person in the audience that has a burning desire to have us stay another five minutes.

MS. SPINAZZOLA: It is my last meeting; I couldn't just let it go without doing this to you.

CHAIRMAN GROUT: That was the wrong person.

MS. BONNIE SPINAZZOLA: Oh, sorry. Well, that's okay, you have to let me go this time. Just getting to that NMFS issue that you're talking about now; I just want to say that as Pete said the Area 2, 3 and Outer Cape people have been impacted by the fact that if they sell anything, they can't go into Area 1 anymore. They've taken a hit or they've taken whatever it is.

They've eaten their medicine because of the Area 1 rules, and that's okay. But that being the case, as was said earlier; all of the industry understand and agree to the fact that these passive reductions are good for the resource and they want to see it happen. As an added benefit to maybe put into your letter, if you are going to write one to the commission, perhaps you could recommend that the only transfers that you recommend be taxed at 10 percent are those full business transfers that are participants in the transferability program. That would leave Maine out.

CHAIRMAN GROUT: Does the board feel that would be an appropriate comment to make? No; okay.

MS. KERNS: I just want to point out that the board has not commented on Issue 4, and that is a difference from what is in our plan. If NOAA were to move forward with allowing dual state and federal permit holders from any state to transfer with each other; that would not be what was in the state rules. Right now in our plan it says you have to be from the same state in order to transfer with each other. We would need direction from the board on how we should comment on this issue.

MR. McKIERNAN: I'm in favor of it. I think it is a nice solution to what was a complicated aspect of the plans up until now. The problem with the plan as we wrote it at the ASMFC was that it meant that only the population – the pool of permit holders was basically within your state. Dual permit holder, meaning a state and a federal, had to find someone else in their state in order to get those like traps.

This gives somebody who is dual, if they can't find somebody in their state, a chance to go out of state for their federal traps and in state for their state traps. It actually doubles the number of traps that are going to be transferred, and you are going to get the conservation tax. I think NMFS came up with a nice solution to a problem that was going to be worse under our plan.

MR. TERRY STOCKWELL: I don't want to prolong this discussion much further, but I do need a clarification on Bonnie's comments referring to Maine in Area 1. If we have a Maine Area 1 fisherman with 800 traps and he or she sells 300 of them, those wouldn't be deducted from Area 1 limit or they would? I'm just confused.

MR. BURNS: Under the proposed rule that we have in place right now, we are proposing that

someone with an Area 3 allocation, for instance, and had an Area 1 permit, if they sell those Area 3 traps, they will lose their Area 1 eligibility. They can't fish with traps in Area 1. That is how the commission recommended that we implement that, because of the difficulties or the inability to – there is no transferability in Area 1, so there is no way to deduct somebody's allocation accordingly like in the other areas.

CHAIRMAN GROUT: Back to the second public commenter, Dick Allen.

MR. RICHARD ALLEN: I want to comment on the idea of the full permit transfer and there not being a conservation tax. I think it is important to keep in mind that NMFS permits boats. There can be a lot of transfers of permits, and somebody might classify it as a full business transfer. Say, an individual owns a boat and he incorporates. NMFS I think would automatically consider that a business transfer, a permit transfer.

If an individual got married and added his wife to the permit, I think NMFS would consider that a transfer. I just went through transferring a permit from one boat that I owned to another and found that because my wife wasn't on one of the papers, they couldn't transfer it until I demonstrated to them that I actually had a title that my wife was on and sent that in.

It might be important to try to really get together with NMFS to figure out what they would consider a transfer, and what they wouldn't. It would be quite different I think the way NMFS does it and the way the states do it, because of the state licensing the individual. I also wanted to comment on this Area 1 fisherman who wants to sell 300 traps and keep his 800 in Area 1.

I think it is important to remember that he never had 1,100 traps, because there is no way to account for the fact that he wants to keep 800 and sell 300. I think you just have to consider that he hangs onto those traps if he wants to maintain his Area 1 qualification.

CHAIRMAN GROUT: You've made your comments; so we are not going to make any comments on Area 2 and 3 trap caps or the dual permit holder or the appeals process.

MR. McKIERNAN: I just endorsed Number 4.

ADJOURNMENT

CHAIRMAN: Okay, seeing no further comments; I'm going to seek a motion to adjourn here. Okay, motion to adjourn, second approved. Thank you.

(Whereupon, the meeting was adjourned at 1:15 o'clock p.m., August 6, 2013.)

Atlantic States Marine Fisheries Commission

DRAFT ADDENDUM XXII TO AMENDMENT 3 TO THE AMERICAN LOBSTER FISHERY MANAGEMENT PLAN FOR PUBLIC COMMENT

SOUTHERN NEW ENGLAND REDUCTIONS IN FISHING CAPACITY FOR LOBSTER CONSERVATION MANAGEMENT AREA 3

ASMFC Vision Statement:
Healthy, self-sustaining populations for all Atlantic coast fish species or successful restoration well in progress by the year 2015.

September 2013

Public Comment Process and Proposed Timeline

In December 2011, the American Lobster Management Board approved a motion to initiate the development of an addendum to Amendment 3 to the Interstate Fishery Management Plan (FMP) for American Lobster to respond to the poor stock condition in the Southern New England (SNE) lobster stock area. The Board directed the Plan Development Team (PDT) to scale the size of the SNE fishery to the size of the SNE resource. The PDT drafted an addendum that addressed this issue with trap reductions and changes to the transferability programs. The Board split the addendum, with the trap reductions addressed through Addendum XVIII (approved 2012) and some changes in the transferability program for Areas 2 and 3 were addressed in Addendum XXI (approved August 2013). This Draft Addendum presents two additional options for management of the SNE lobster stock (LCMA 3) for public consideration and comment. **Note:** These options were previously considered under Draft Addendum XXI. Draft Addendum XXII makes two corrections (see Tables 2 and 3) to the options that were considered under Draft Addendum XXI in order to accurately reflect the trap reduction schedule. This draft addendum also adds one additional option for consideration under Section 3.2 (Aggregate Ownership Cap) that would allow a single company or individual who holds more than five times the single ownership cap prior to the selected control date, to increase each permit's allocation up to the approved trap cap.

The public is encouraged to submit comments regarding this document at any time during the addendum process. Public comments will be accepted until **5:00 PM (EST) on October 17th, 2013.** Regardless of when they were sent, comments received after that time will not be included in the official record. Comments may be submitted by mail, email, or fax. If you have any questions or would like to submit comment, please use the contact information below.

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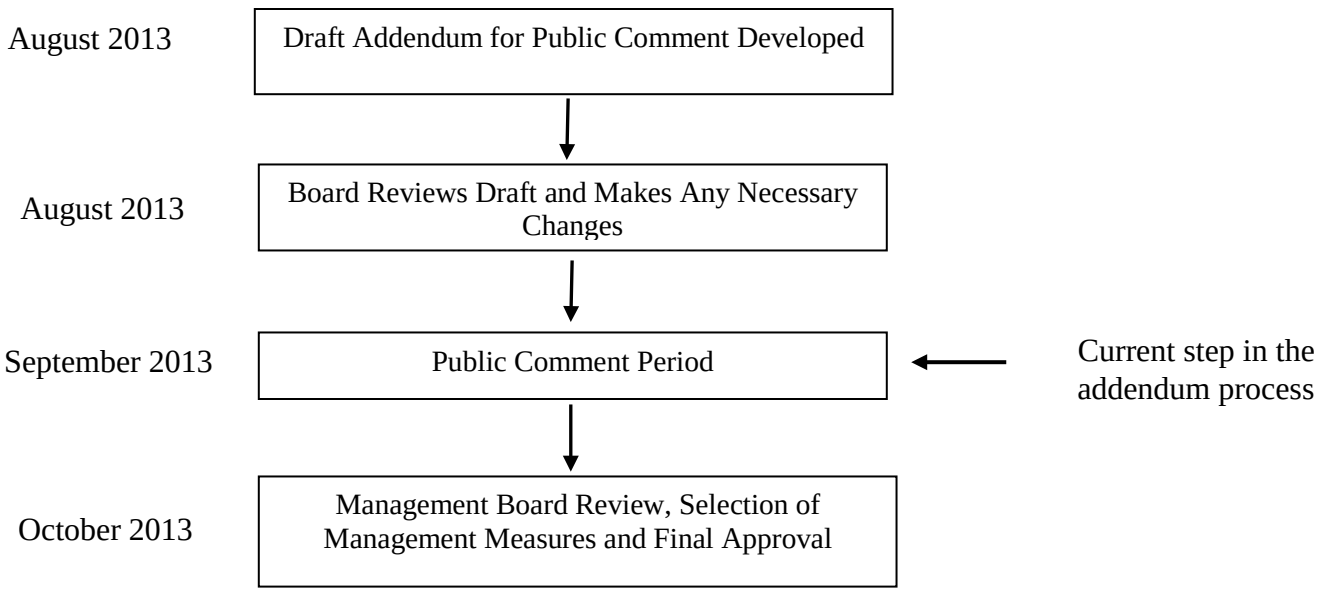

1.0 Introduction

The Atlantic States Marine Fisheries Commission (ASMFC) has coordinated interstate management of American lobster (*Homarus americanus)* from 0-3 miles offshore since 1997. American lobster is currently managed under Amendment 3 and Addenda I-XVII to the Fishery Management Plan (FMP). Management authority in the exclusive economic zone (EEZ) from 3-200 miles from shore lies with NOAA Fisheries. The management unit includes all coastal migratory stocks between Maine and North Carolina. Within the management unit there are three lobster stocks and seven management areas. The Southern New England (SNE) stock (subject of this Draft Addendum) includes all or part of six of the seven lobster conservation management areas (LCMAs) (Appendix 1). There are nine states (Massachusetts to North Carolina) that regulate American lobster in state waters of the SNE stock, as well as regulate the landings of lobster in state ports.

The Board initiated this Draft Addendum to scale the SNE fishery to the size of the resource with an initial goal of reducing qualified trap allocation by at least 25 % over a five to ten year period of time. The Board motions read: *Move to … As a second phase initiate Draft Addendum XIX to scale the SNE fishery to the size of the SNE resource. Options in the document will include recommendations from the LCMTs, TC and PDT. These options would include, but are not limited to, a minimum reduction in traps fished by 25% and move to proceed with Draft Addendum XVIII on LCMA 2 and 3 effort control programs to meet the terms of the second phase in the previously approved motion.*

The Board directed the Plan Development Team (PDT) to scale the size of the SNE fishery to the size of the resource in the SNE stock. The PDT drafted an addendum that addressed this issue with trap reductions and changes to the transferability programs. The Board split the addendum, with the trap reductions addressed through Addendum XVIII (approved 2012) and addressed some of the changes in the transferability program for Areas 2 and 3 in Addendum XXI (approved August 2013). Previously, the most recent transferability rules were established in addenda XII, XIV and XXI.

This Draft Addendum proposed to modify some of those rules on single and aggregate ownership limits in Area 3. Proposed changes to current regulations are noted in Section 3 of this document. Note: These options were previously considered under Draft Addendum XXI for Public Comment. However the Board decided to separate these items out in order to make two corrections (see Tables 3 and 4) to the management options previously considered under Addendum XXI in order to accurately reflect the trap reduction schedule. This draft addendum also adds one additional option for consideration under Section 3.2 (Aggregate Ownership Cap) that would allow a single company or individual who holds more than five times the single ownership cap prior to the selected control date, to increase each permit's allocation up to the approved trap cap.

2.0 Background

2.1 Statement of the Problem

Resource Issues

The SNE lobster stock is at a low level of abundance and is experiencing persistent recruitment failure caused by a combination of environmental drivers and continued fishing mortality

(ASMFC, 2009). It is this recruitment failure that is preventing the SNE stock from rebuilding. This finding is supported by the 2009 Stock Assessment Peer Review Panel and the 2010 Center for Independent Experts review of Technical Committee (TC) findings and conclusions articulated in the April 2010 report to the Board: "Recruitment Failure in Southern New England Lobster Stock.

Current abundance indices are at or near time series (1984 to 2009) lows (ASMFC 2009) and this condition has persisted since the early 2000s. In May 2009, the Board set interim threshold and target values well below those recommended by the TC in recognition that stock productivity has declined in the past decade. The stock is overfished but overfishing is not occurring. Members of the Board and TC believe that environmental and ecosystem changes have reduced the resource's ability to rebuild to historical levels.

Management Issues

The Board initiated this draft addendum to scale the SNE fishery to the diminished size of the SNE resource. This addendum proposes changes to single and aggregate ownership limits in Area 3. These changes are designed to allow for flexibility in the movement of traps as the consolidation program for LCMA 3 to address latent effort (unfished allocation) is implemented.

The limited entry programs for each LCMA had unique qualifying criteria and eligibility periods resulting in widely disparate levels of latent effort among the areas. Consequently, measures to remove latent effort from the fishery will need to be developed for each LCMA based on the current amount of latency and the unique qualifying criteria and eligibility periods used by each management jurisdiction. For trap limits to be effective in reducing harvest and rebuilding the stock, latent effort must first be addressed to prevent this effort from coming back into the fishery as the stock grows and catch rates increase. Without action being taken to remove latent effort from the fishery any effort to consolidate LCMA 3 will be undermined. It is anticipated that long-term reductions in traps fished will occur as a result of this addendum. The two options under consideration - trap banking and permit/trap caps - are intended to provide additional management tools that will allow lobstermen more flexibility to scale their businesses and will allow the trap transferability program to work more effectively.

2.0 Background

Refer to Addendum XXI for a more detailed summary.

The Board has approved past addenda governing the LMCA 3 trap fishery that allocated traps to each permit holder based on past performance. Once NOAA Fisheries allocates traps, the LCMAs will have a finite number of traps that can be fished based on the total allocation of individuals qualified to fish in the areas. While difficult to calculate and confirm for all areas and jurisdictions, it is estimated that the effort control plans allocated more traps than were being fished at the time the allocation schemes were adopted. Because the fishery was already seeing substantial attrition, the initial trap allocations created a pool of latent trap allocation that could be fished in the future. The number of fishermen and traps fished was substantially higher in the late 1990's and continues to decline through the present day. Nevertheless, the proportion of trap allocation that is unfished is significant and continues to grow (Table 1).

Table 1. Traps allocated and max traps fished for 2008-2010 for LCMA 2 and 3.

LCMA	2008 Traps Allocated	2008 Max Traps Fished	2009 Traps Allocated	2009 Max Traps Fished	2010 Traps Allocated	2010 Max Traps Fished
LCMA 2	178,376	107,003	175,117	107,886	177,120	104,603
LCMA 3	109,477	87,188	111,109	80,561	111,386	75,808

Addendum XVIII effort control plans in LCMA 2 and 3 is designed to remove latent effort from both areas. Prior to Addendum XVIII control plans in the areas resulted in some amount of effort reduction at the permit holder level and at the aggregate fleet level. Many LCMA 3 permit holders have seen their trap allocation reduced by a series of addenda (Addenda I, IV, XVIII), that imposed differential trap cuts on Area 3 fishermen based on the size of the original allocation. Fishermen with lower allocations were cut 10 %, while others with very high allocations were being cut up to 40%. As a general rule, most Area 3 fishermen had their historic allocations cut by approximately 30%. In the most recent Addendum (XVIII), LCMA 3 will reduce it traps by 25% over a five year period.

Despite the scaling down achieved through the effort control plans, many in the industry fear the soon-to-be-approved transferability program could result in a flurry of transfers that will spike fishing effort. Therefore, an effort reduction proposal was put forth to the Board by LCMT 2 and 3 to mitigate some of the anticipated unintended consequences of trap allocation transferability programs that are expected to come "on-line" in the months ahead. The proposal establishes long-term effort reductions (allocated traps) in the LCMAs that feature excessive permits and trap allocations, especially in SNE where the stock is declining. The proposal creates a framework that allows for LCMA-specific long-term reductions in trap allocations with constraints on how quickly a permit holder can build up their trap allocation after a transfer occurs. If enacted, these cuts in trap allocation are designed to eliminate latent trap allocations and reduce the number of traps actually fished. Industry members who envision improvements in the economics of the fishery are willing to undertake these trap reductions as long as the relief valve of trap allocation transfer is available to maintain a profitable fishery for the remaining participants.

SNE fishermen recognize that the decline in lobster abundance and the potential for future offshore industrial development could constrain the fishable areas and reduce future landings to unforeseen low levels. In the absence of government funds to remove permits or trap allocation from the available pool, industry developed a proposal that is essentially a self-funded buy-out. Consolidation is likely to occur as permit holders respond to the annual trap allocation cuts by obtaining trap allocation from those permit holders who downsize their operations or leave the fishery.

3.0 Proposed Changes in Management Options

These options were previously considered under Draft Addendum XXI. Draft Addendum XXII makes two corrections (see Tables 2 and 3) to accurately reflect the trap reduction schedule. One additional option for consideration has been added under Section 3.2 (Aggregate Ownership Cap). If changes to the Commission management program are made through this addendum it is

likely NOAA Fisheries will conduct addition rule-making to consider any measures adopted by the Commission.

3.1 Single Ownership Cap or Individual Permit Cap

In order to inhibit the excessive consolidation within the LCMA 3 industry, a cap on ownership is proposed. The ability to accumulate traps allows a permit holder to purchase, at one time, the amount of traps necessary to remain competitive, at the same time relieve the administrative burden of multiple purchases. It addresses and minimizes both the economic burden of controlled growth and having to wait to purchase the traps necessary to reach the Individual Permit Cap. This is necessary since it is anticipated that, once traps become scarce, their cost will increase. This will be especially advantageous to the smaller operator, as it provides the ability for a smaller operator to purchase traps immediately rather than waiting until the end of the process, thus enabling them to purchase a greater number of traps early on while their cost is still relatively low.

The Single Ownership Cap allows for the purchase and accumulation of traps over and above the *Active Trap Cap* limit. This will allow a permit holder to obtain trap allocation from other permit holder in excess of the individual trap cap limit (the number of traps that can be actively fished) on an area specific basis. This additional allocation may not be fished until activated by the permit holder's governing agency. This provision will enhance the ability of a lobster business owner to plan for their future. For example, non-active or banked traps could be activated, up to the maximum individual trap allocation, if a permit holder's trap allocation was reduced in the future, instead of trying to buy additional allocation the year the reductions occurred. Entities will also be able to obtain trap allocation in a single transaction vs. making numerous small transactions each year, which will reduce the administrative burden for the management agencies and industry. Newly purchased traps, along with traps already owned by a permit holder, may combine to equal the number of traps necessary to go through active reductions, in order to end up at the final trap level of 1,800 traps. The Single Ownership Cap allows for the accumulation of an additional 252 traps, which would remain unfished, over the active trap cap of 1,548 to help insulate the industry from any possible future trap reductions.

If an option other than status quo were adopted this would replace section 4.2.1.4 of Addendum VII

Option 1. Status Quo: No action, no ownership cap

Option 2. Single Ownership Cap or Individual Permit Cap
The single ownership cap allows the purchase and accumulation of traps over and above the Active Trap Cap Limit as specified in Section 3.2.3 of Addendum XXI. The single ownership cap would be implemented as detailed in the table below. This schedule assumes that NOAA Fisheries will implement a 2,000 trap cap with the next set of federal rules and phase in a 25% trap cut during the next five years. If NOAA Fisheries adopts a lower trap cap or cut for LCMA 3, the schedule will be adjusted accordingly.

Table 2. Area 3 Individual Permit Cap Table

Year	Number of Traps
Year 0	2,333
Year 1	2,216
Year 2	2,105
Year 3	2,000
Year 4	1,900
Year 5	1,800

3.2. Aggregate Ownership Cap or Ownership Accumulation Limits

The ASMFC adopted Addendum IV in December 2003 which limited the number of federal permits any single entity/company can own up to 5 with an exception for a group of permit holders who held more than five prior to December 2003. Two options are being considered in this addendum to further limit consolidation within the LCMA 3 industry to allow for as much cultural and geographic distribution within the fishery as possible (currently GOM to Cape May, out to the Hague Line). The goal is to reduce the possibility of one entity exerting significant control over the markets and keep as many individuals in the fishery as possible. Ownership is defined as having any interest in a lobster permit/business. All stock holders must be disclosed when renewing landing permits or trap tag allocations.

If an option other than status quo is adopted it will replace Section 4.2.3 of Addendum IV.

Option 1: Status Quo: Anti-monopoly Clause

No single company or individual may own, or share ownership of, more than five qualified LCMA 3 federal permits. However, those individuals who have more than five permits in December 2003 may retain the number they had at that time but may not own or share ownership of any additional permits.

Option 2: Aggregate Ownership Cap or Ownership Accumulation Limits (Partial Exemption)

No single company or individual may own traps greater than five times the Single Ownership Cap if they have not already accumulated them prior to NMFS publishing a present-day control date. However, should an individual owner be in excess of the Aggregate Ownership Cap before the control date is published, that owner will retain its existing trap ownership and that owner may not increase trap ownership once the NMFS control date has been published. Any ownership with an accumulation of fewer traps than the Aggregate Cap at the time the control date is published may not exceed the Aggregate Ownership Cap, as detailed in the table below.

If this option were adopted, the Board would recommend that NOAA Fisheries establish a control date for the number of taps a single company or individual may own, or share ownership of for LMCA 3.

> Example 1: An individual owns four LCMA 3 permits with a combined trap allocation of 6,400 traps (1,600 traps per vessel). This individual would be allowed to purchase

additional traps, based on the number of permits, but may not exceed the Aggregate Ownership Cap.

Example 2: An individual owns seven LCMA 3 permits, which were acquired prior to December 2003, with a combined trap allocation of 11,200 (1,600 traps per vessel) which is lower than the Aggregate Ownership Cap when the trap reductions go on line. This individual would be allowed to purchase additional traps, but may not exceed the Aggregate Ownership Cap.

Example 3: An individual owns seven LCMA 3 permits, which were acquired prior to December 2003, with a combined trap allocation of 11,900 (1,700 traps per vessel) which is higher than the Aggregate Ownership Cap when the trap reductions go on line. This individual will retain their current allocation of traps but may not purchase further traps.

Option 3: Aggregate Ownership Cap or Ownership Accumulation Limits (Full Exemption)
This is a new option for consideration

No single company or individual may own traps greater than five times the Single Ownership Cap if they have not already accumulated them prior to the NMFS publishing a present-day control date. However, should an individual owner qualify to be in excess of the Aggregate Ownership Cap before the control date is published, that owner will retain their existing trap ownership and that owner may only increase trap ownership up to the Single Ownership / Individual Permit Cap for the permits presently owned, in accordance with the NMFS present-day control date (i.e. if an entity falls under the grandfather provision, that entity would be allowed to acquire additional trap allocations up to the Single Ownership / Individual Permit Cap for each of its grandfathered permits.) Otherwise, any ownership with an accumulation of fewer traps than the Aggregate Cap at the time the control date is published may not exceed the Aggregate Ownership Cap, as detailed in the table below.

If this option were adopted, the Board would recommend that NOAA Fisheries establish a control date for the number of taps a single company or individual may own, or share ownership of for LMCA 3.

Example 1: An individual owns four LCMA 3 permits with a combined trap allocation of 6,400 traps (1,600 traps per vessel). This individual would be allowed to purchase additional traps, as feasible based on the number of permits, but may not exceed the Aggregate Ownership Cap.

Example 2: An individual owns seven LCMA 3 permits, which were acquired prior to December 2003, with a combined trap allocation of 11,200 (1,600 traps per vessel) which is lower than the Aggregate Ownership Cap when the trap reductions go on line. This individual will retain their current allocation of traps and also has the right to purchase up to the Single Ownership Cap for each permit. This individual at Year 5 of the trap reductions (based on Section 3.1, if implemented as described above) would be allowed to own up to 12,600 traps (above the Aggregate Ownership Cap).

Table 3. Area 3 Aggregate Ownership Cap or Ownership Accumulation Limits Table

Year	Number of Traps
Year 0	11,665
Year 1	11,080
Year 2	10,525
Year 3	10,000
Year 4	9,500
Year 5	9,000

Table 4. Comparison of Active Tap Cap (as specified under Addendum XXII) and the proposed Individual and Aggregate Permit Caps.

Year	Active Trap Cap	Individual Permit Cap	Aggregate Permit Cap (5x Individual Permit Cap)
Year 0	2,000	2,333	11,665
Year 1	1,900	2,216	11,080
Year 2	1,805	2,105	10,525
Year 3	1,715	2,000	10,000
Year 4	1,629	1,900	9,500
Year 5	1,548	1,800	9,000

4.0 Annual Review and Adjustment Process

As part of the annual plan review process the Board will review the performance of this program to ensure that it is meeting the goals of the program. The review will consider the number of traps transferred, the rate of transfer, degree of consolidation taking place, etc in each area.

States will be required to submit to ASMFC the required items for review as specified under Addendum XXI.

4.1 Compliance

If the existing lobster management program 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 addendum. The compliance schedule will take the following format:

XXXXX: States must submit programs to implement Addendum XXI for approval by the American Lobster Management Board

XXXXX: The American Lobster Board Approves State Proposals

XXXXX: All states must implement Addendum XXI through their approved management programs. States may begin implementing management programs prior to this deadline if approved by the Management Board.

5.0 Recommendation for Federal Waters

The SNE lobster resource has been reduced to very low levels. The Atlantic States Marine Fisheries Commission believes that additional fishery restrictions are necessary to prevent further depletion of the resource.

The Atlantic States Marine Fisheries Commission believes that the measures contained in Amendment 3 and Addenda I-XXI are necessary to limit the expansion of effort into the lobster fishery and to rebuild lobster stocks to recommended levels. ASMFC recommends that the federal government promulgate all necessary regulations to implement the measures contained in Sections 3 and 4 of this document.

6.0 References

ASMFC, 2009. Stock Assessment Report No. 09-01.

ASMFC 2010, SNE Exploitation Reduction No. 10-120.

Atlantic States Marine Fisheries Commission

DRAFT ADDENDUM XXIII TO THE AMERICAN LOBSTER MANAGEMENT PLAN

Habitat Considerations

This draft document was developed for Management Board review and discussion. This document is not intended to solicit public comment as part of the Commission/State formal public input process. Comments on this draft document may be given at the appropriate time on the agenda during the scheduled meeting. If approved, a public comment period will be established to solicit input on the issues contained in the document.

ASMFC Vision Statement:
Healthy, self-sustaining populations for all Atlantic coast fish species or successful restoration well in progress by the year 2015.

October 2013

Draft Addendum for Board Review

Public Comment Process and Proposed Timeline

This addendum is intended to provide supporting information on American lobster habitat needs and concerns and does not impact current regulatory measures.

The public is encouraged to submit comments regarding this document at any time during the addendum process. The final date comments will be accepted until **5:00 PM (EST) on XXXXX 2013.** Comments may be submitted by mail, email, or fax. If you have any questions or would like to submit comment, please use the contact information below.

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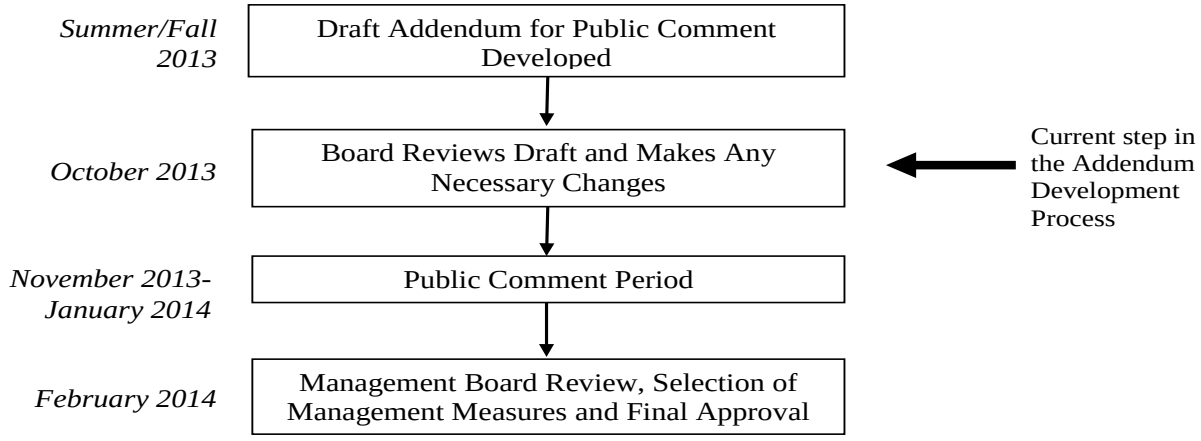

1. HABITAT CONSIDERATIONS

1.1. Components of Habitat

Habitat components are those elements that play a vital role in the reproduction, growth and sustainability of commercial and recreational fisheries by providing shelter, feeding, spawning, and nursery grounds for lobsters to survive (www.habitat.noaa.gov/index.html). Habitat components include temperature, salinity, dissolved oxygen, pH, light and photoperiod, substrate, oceanographic conditions, and diet (also reviewed in Mercaldo-Allen and Kuropat 1994, ASMFC 1997, 2009). For each component, a description and summary of habitat requirements, tolerances, and potential effects on lobsters is described for their early-life stages (eggs and larvae), as well as for juveniles and adults. A summary of key biological threshold values is given in Table 2 at the end of this section.

1.1.1. Temperature

Temperature is the primary driving force influencing lobster metabolism, activity levels, spawning, development, growth, and possibly life span (Hawkins 1996, ASMFC 1997, 2009). Lobsters of all life-stages are reported to live in areas that range broadly in water temperature from -1ºC to over 25ºC (Aiken and Waddy 1986, ASMFC 1997, 2009). Changes in temperature also have striking effects resulting in at least a two-fold increase in activity (e.g., heart and respiration rates) with each 10°C rise in temperature (i.e., Q_{10} temperature coefficient). Temperature has direct effects on physiological processes such as gas exchange, acid-base regulation, cardiac performance, and protein synthesis among others that can negatively affect these animals under stressful thermal conditions (Whiteley et al. 1997, Table 1).

Degrees Celsius	**-1**	**4**	**10**	**12**	**15**	**20**	**25**
Degrees Fahrenheit	30	39	50	54	59	68	77

Table 1. Temperature range and key values (converted to degrees Fahrenheit) that are relevant to lobster physiology and are provided here as a reference.

<u>Eggs & Larvae</u>
Temperature is the key factor that determines the length of time the eggs are carried and when eggs will hatch (Templeman 1940, Perkins 1972, Aiken and Waddy 1980, Tlusty et al. 2008, Goldstein 2012). Egg hatching typically occurs when surface water temperatures are generally > 12°C (MacKenzie 1988), between June-September but the timing of this event is highly dependent on the region. Closely coupled metabolic rates increase with temperature thereby modulating yolk absorption, growth, and ultimately, the survival of eggs (Pandian 1970, Helluy and Beltz 1991). Although optimal temperatures for lobster egg growth are not fully known, seasonally fluctuating temperatures result in disparate growth patterns and subsequently, differing hatch times (Sibert et al. 2004, Goldstein 2012).

Crustacean egg exposure to either prolonged warm or cold temperatures can have a deleterious effect on the use of their yolk reserves (Garcia-Guerrero et al. 2003, Manush et al. 2006), and it has been suggested that prolonged (more so than average) cold temperatures (< 4°C) negatively affect egg development in *H. americanus* (Waddy and Aiken 1995). However, seasonally changing temperatures, including a refractory period of 'normally' cold

(wintertime) seawater temperatures (< 5°C) are important to conserving egg resources for more rapid increases in temperature (> 10°C) that typically occur later in the season and precede hatch (Waddy and Aiken 1995). These kinds of seasonally- fluctuating thermal conditions were simulated in laboratory studies and resulted in egg development that extended well into the spring and early summer (see Table 2 in Perkins 1972, Gendron and Ouellett 2009, Goldstein 2012).

For both lobster eggs and early-stage larvae, lipids are considered a major energy reserve and are also used as structural components of cell membranes that are being formed as they grow (Sasaki et al. 1986). Lipid depletion rates in lobster eggs are directly related to incubation temperatures. Yolk lipids tend to become catabolized first followed by yolk proteins. These ratios change and can be used to estimate the cost of egg development at differing temperatures (Sasaki et al. 1986). Over prolonged cold temperatures or those conditions in which temperatures are too high for even short periods of time, some crustacean embryos may instead utilize proteins as an energy source if lipids are low due to thermally-induced demands (Conceicao et al. 1998). However, Sasaki et al. (1986) showed that up until Stage IV (post-larval), lobsters depended upon stored capacities of lipids and that these residual lipids may be favorable to settlement processes. Temperature also has a direct influence on the success of egg clutch attachment and even egg retention and loss. Talbot et al. (1984) discovered that elevated winter temperatures prior to spawning have an adverse effect on egg retention. Other laboratory studies implicate elevated temperatures in a significant loss of extruded eggs as well as their attachment to the abdomen, ultimately influencing hatching success (Talbot and Harper 1984). Observations from field data (undocumented to-date) have also seen such a pattern in some areas.

After hatching, young lobsters pass through one pre-larval and four free-swimming larval (zoeal) stages (distinguished by morphological, behavioral, and physiological attributes) before settling to the bottom and molting into juveniles (Hadley 1908, Lawton and Lavalli 1995). All larval stages are normally completed in 25-35 days (Herrick 1895, see Table 1 in Templeman 1940), but their pelagic duration is highly temperature dependent, and it has recently been suggested that it is markedly shorter than previously thought (Annis et al. 2007). MacKenzie (1988) demonstrated via a series of laboratory rearing studies that if larvae hatch at 10°C they can develop successfully through Stages I and II; however, beyond that, warmer water is needed to complete their development to Stage IV and the early benthic juvenile phase, Stage V (4% larval survivorship at 10°C vs. 56% at 12°C larval survivorship, MacKenzie 1988). Similarly, Sastry and Vargo (1977) reported significantly lower survivorship to stage V at 10°C. Harding et al. (1983) also showed that larval hatching usually occurred when water temperatures rose above 12.5°C. This waiting period may optimize development, growth, and survival of larvae. Changes in the thermal environment (e.g., seasonal fluctuations, rates of change) can have significant physiological influence over total time to egg development as well as timing for the postlarval stage to recruit to the fishery (Templeman 1940, Hofmann and Powell 1998, Goldstein 2012).

Juveniles & Adults

Differences in temperature also can influence juvenile growth patterns (e.g., onset of molting in juveniles or the start or spawning in adults) between regions (Little and Watson 2005). Variations among thermal regimes have been documented to influence lobster size at maturity and overall somatic growth (Estrella and McKiernan 1989, Little and Watson 2005, Wahle and Fogarty 2006, Bergeron 2011). There is a strong influence of water temperature on most aspects of lobster reproduction including maturation, spawning, molt cycle,

oogenesis and hatching (see Waddy and Aiken 1995 for review). While elevated temperatures accelerate the onset of reproductive maturity, low temperatures tend to delay ovarian maturation (Templeman 1936, Waddy and Aiken 1995).

Adult lobsters respond to small changes in temperature as demonstrated in previous work (e.g., Crossin et al. 1998, Jury and Watson 2000, Childress and Jury 2006), and they respond both behaviorally (e.g., movement) and physiologically (e.g., changes in cardiac cycle) (McLeese and Wilder 1958, Worden et al. 2006). Crossin et al. (1998) showed that lobsters tend to avoid water temperatures below 5°C and above 18°C and exhibit a thermal preference of 15.9°C; this is similar to the value of 16.5°C found by Reynolds and Casterlin (1979). Recent laboratory work on lobsters in Long Island Sound (LIS) has shown that as water temperature increased beyond a threshold of ~ 20.5°C, the respiration rate of lobsters increased significantly leading to stress (Powers et al. 2004, Dove et al. 2005). Lobsters tend not to be directly stressed by water temperatures below 20ºC as long as oxygen levels are maintained at > 2 mg O_2L^{-1}. Lobsters held at 21ºC and 23ºC had significantly higher respiration rates than those held at 18ºC and 19.5ºC (Powers et al. 2004). McLeese (1956) gave us insight into the survivorship of lobsters subjected to combinations of varying temperatures, dissolved oxygen, and salinity (see Figure 11 in Fogarty et al. 2008), since biological oxygen demand increases as temperatures increase; likewise, oxygen solubility in seawater diminishes. A key point is that lobsters exposed to seawater temperatures below 20ºC are not generally stressed as long as oxygen concentrations remain > 2 mg O_2L^{-1} and, recent work with lobsters in LIS, confirmed that water temperatures > ~ 20.5ºC induced respiratory stress (Powers et al. 2004, Dove et al. 2005). Thus, 20.5ºC appears to be a key physiological threshold value for lobsters in LIS and possibly other areas.

Worden et al. (2006) demonstrated that cardiac performance (heart rate) is strongly modulated by temperature and cardiac output is maximal at 10ºC and decreases significantly > 20ºC. In-tandem with this finding, Camacho et al. (2006) determined that the upper thermal limit for heart function is more than 20°C warmer than body temperature for lobsters acclimated to cold (4°C) temperatures whereas warm (20°C) acclimated lobsters are living within 10°C of their thermal trigger for heart failure at 30°C, suggesting that the threshold for heart failure is affected by acclimation temperature.

Finally, some studies suggest that although a great deal of lobster activity and locomotion is attributed to temperature, not all temperature ranges demonstrate this relationship (Jury et al. 2005, Langley and Watson 2011). McLeese and Wilder (1958) found a positive relationship at temperatures < 10°C, while others found a negative correlation at excessively warmer temperatures, > 20°C (Courchene and Stokesbury 2011).

1.1.2. Salinity

Salinity tolerance varies with developmental stage. Charmantier et al. (2001) provides an excellent review of the ecophysiological adaptation by lobsters to salinity throughout the life cycle. In general, the capacity to osmoregulate varies with development when exposed to low salinity. Furthermore, because lobsters can be found inhabiting shallow coastal areas, bays, estuaries and subtidal areas, they are frequently subjected to dramatic fluctuations in salinity (e.g., abnormal spring run-off and large storm events, Jury et al. 1995) where they may be subjected to short-term exposure to wide ranges in salinity.

Eggs & Larvae

The complex morphology of lobster eggs makes them particularly impenetrable to outside fluids (Talbot and Goudeau 1988, Johnson et al. 2011). However, the permeability of lobster eggs increases close to hatch, resulting in an osmotic uptake of water and the rupture of the membrane (Pandian 1970). For the most part, egg membranes act to osmotically buffer the variations of external salinities. Late-stage eggs carried by ovigerous females died within two hours of exposure to 17 ppt but could tolerate 24 ppt for at least 12 hours (Charmantier and Aiken 1987). Larvae seem to be less tolerant of changes in salinity but were found to progress through all Stages of development between 15-17ºC at 17 ppt (Templeman 1936), while Sastry and Vargo (1977) noticed that larval development to Stage V (early juvenile phase) slowed in salinities above 20 ppt at 15°C and 15 ppt at 20°C. Also, at 20°C, 48 h mortality (LD_{50}) ranged from14-18 ppt in larvae, was maximal at metamorphosis and decreased to approximately 12 ppt in postlarvae; 48 h LD_{50} was ~10 ppt in 1-year-old juveniles (see Table 1 in Charmantier et al. 2001). Therefore 1-year old lobsters appear to tolerate lower salinities better than young-of-year (YOY) animals.

Juveniles & Adults

The energetic demands on juvenile and adult lobsters engaged in osmoregulation influence their distributions and movements, particularly in estuarine habitats (Watson et al. 1999) and their ability to osmoregulate is heavily influenced by temperature (Charmantier et al. 2001). As a result, adult lobsters adopt behavioral strategies to avoid low salinity (Jury et al. 1994a,b, Childress and Jury 2006). For example, adults vacate their shelters at salinities < 12 ppt. Adults prefer higher salinities (20-25 ppt) over lower ones (10-15 ppt) (Jury 1994a). Females appear much more sensitive to reduced salinity and thus males appear to populate certain estuarine waters and bays on a seasonal basis (Jury et al. 1994a,b, Jury and Watson 2012). A detailed examination of the seasonal movements of lobsters into a New Hampshire estuary (Great Bay), showed that movements occurred in the spring when salinities were > 15 ppt (Watson et al. 1999).

1.1.3. Dissolved Oxygen

Eggs & Larvae

Studies in brachyuran crabs (*Cancer spp.*) provide direct evidence between active brood care and oxygen provision. For example, it has been shown that oxygen may be a critical factor in some brooding behaviors (egg-fanning, movement) (Baeza and Fernandez 2002, Romero et al. 2010). Because *H. americanus* also exhibits prolonged maternal care of its brood (e.g., ventilation and fanning of eggs), it is probable, but not documented, that ovigerous females require different conditions to successfully maintain egg clutches through to hatch and may select habitats that contain sediments providing a high rate of oxygen exchange (e.g., Dungeness crabs, Stone and O'Clair 2002). For larvae, dissolved oxygen (DO) concentrations < 1.0 mg O_2L^{-1} and pH levels < 5.0 and > 9.0 are lethal (Ennis 1995). Miller et al. (1992) found that larval-stage lobsters appear twice as sensitive as juveniles and adults to reduced DO. However, since larvae are planktonic, spending a good deal of time in the upper portion of the water column, they are apt to encounter continuously sufficient levels of DO.

Juveniles & Adults

Lobsters require more oxygen as water temperature increases and hypoxic waters become more stressful as they warm. The lower lethal oxygen level for juveniles and adults ranged

from 0.2 mg O_2L^{-1} at 5°C to 1.2 mg O_2L^{-1} at 25°C in 30 ppt (Harding 1992). A study conducted in Western Long Island Sound (WLIS) showed that in general, the threshold of adult lobsters to critical DO levels is high compared to other marine species (finfish and squid), and these lobsters demonstrated a behavioral avoidance of DO levels < ~2.0 mgL^{-1} (Howell and Simpson 1994). Prior to molting, juveniles and adults become more susceptible and sensitive to low DO as oxygen consumption peaks at molting (Penkoff and Thurberg1982) and molting lobsters have been found to be less resistant to high temperature and low DO and salinity than lobsters during intermolt periods (Waddy et al. 1995).

Other reports document congregations of lobsters in large numbers near the edges of hypoxic zones where DO was > 2 mgL^{-1}. These lobsters moved away from other areas where DO dropped below 2 mgL^{-1}, thereby concentrating some populations of lobsters in WLIS during a severe hypoxic event in 1999 (see review in Pearce and Balcom 2005). In a series of laboratory-based experiments, Robohm et al. (2005) demonstrated that lobsters exposed to a combination of organics (ammonia, sulfides), normal summer-time temperatures, and low DO became increasingly susceptible to disease (e.g., *Aerococcus viridans*). Similarly, at high water temperatures (24°C) lethal effects on disease-free eastern LIS lobsters were minimal as long as DO was kept high; low DO at 24°C killed 90% of the lobsters in eight days (Draxler et al. 2005).

1.1.4. pH

Larvae

Low pH or ocean acidification (OA) resulting from the global increase in atmospheric CO_2 concentration may become an emerging threat to lobsters as has already been documented in the congener *H. gammarus* where Arnold et al. (2009) showed that larvae cultured in acidic seawater exhibited compromised exoskeletons (disruption of the calcification process) and decreased carapace masses. For *H. americanus* Hall and Bowden (2012) investigated the difference in development of newly hatched larvae until 90 days post-hatch when exposed to levels of low pH using morphological analysis, carapace calcification, and molecular expression of immune parameters. Preliminary results indicate that chronic exposure to low pH can have a detrimental impact on larval development. Based on ocean pH levels predicted for 2100, Keppel et al. (2012) studied the effects of reduced seawater pH on the growth (carapace length) and development (time to molt) of *H. americanus* larvae through Stages I-IV and determined that larvae in acidified seawater (pH = 7.7) exhibited a significantly shorter carapace length than those in control (pH = 8.1) seawater at each stage and also took significantly more time to reach each molt than control larvae. Thus, for the few studies we do have data for the effects of OA appear to slow overall development and stunt growth.

Juveniles & Adults

Few studies of OA and its effects on juvenile or adult lobsters have been reported. In European lobster (*Homarus gammarus*) Agnalt et al. (2013) noted deformities in both larvae and juveniles exposed to lower pH at two different temperatures. In *Homarus americanus* juveniles showed increased their calcification by 600% under high CO_2 levels (CO_2 = 2800 µatm) for 60 days but with high mortality rates (Ries et al. 2009). The combination of warmer temperatures and predicted levels of OA, would likely contribute to additional metabolic stress on juvenile lobsters, as seen in the crab *Hyas araneus* (Walther et al. 2010). In longer-term studies the effects of exposure to forecasted levels of OA were examined by

Long et al. (2013) on the growth, condition, calcification, and survival of juvenile red king crabs, *Paralithodes camtschaticus*, and Tanner crabs, *Chionoecetes bairdi*. One dramatic result was that 100% mortality of red king crabs was reported after 95 days at a seawater pH of 7.5. Similarly to larval lobsters, there was a noticeable a decrease in survival for both species and may have serious negative impacts in lobsters as well.

1.1.5. Light & Photoperiod

Eggs & Larvae

There is evidence to suggest early larval stages are positively phototactic and later stages are capable of vertical migration in the water column (Fogarty 1983). Templeman and Tibbo (1945) noted that Stage III and IV larvae are less sensitive to light levels than early stages. A minimum light intensity is required to attract larvae to the sea surface but early-stage larvae seek lower depths in bright sunlight (Templeman 1933). Larval survival was found to be higher in low-light environments and larvae cultured in continuous darkness developed faster and were almost twice the weight of larvae grown in a photoperiod of 12:12 light:dark (LD) (Eagles et al. 1986).

Juveniles & Adults

Previous studies have demonstrated that daily rhythms in lobsters are influenced by endogenous circadian clocks, synchronized to natural LD cycles (Lawton and Lavalli 1995). A recent laboratory study by Langley and Watson (2011) found that lobsters are more nocturnal than diurnal and that activity peaks before dawn and after dusk. In addition, the reported presence of a light-sensitive molecule, cryptochrome, in the ventral nerve cord of lobsters suggests that this compound may play a role in lobster orientation and movement (White et al. 2012). For pre-ovigerous adult females, at low temperatures reproduction seems to be regulated by temperature, but at elevated temperatures photoperiod becomes the more overriding factor, especially if winter water temperatures remain elevated (Hedgecock 1983, Aiken and Waddy 1980, 1990). In a field study of LIS lobsters, Weiss (1970) found that light intensity strongly affected burrow occupancy and foraging behavior. Juvenile lobsters usually stayed in their burrows whenever ambient light intensity exceeded 0.04 μWcm^{-2}. Lobsters first emerged from their burrows ~25 min. after sunset at an underwater light intensity of 0.02 μWcm^{-2} from June-November. From December-January, lobsters did not appear until 40 min. after sunset when light intensity was less than that level (Weiss 1970, Lavalli and Lawton 1995).

1.1.6. Substrate

Postlarvae

Pre- and postlarval (Stage IV) selection of substrate types are complex processes (Boudreau et al. 1990, Cobb and Wahle 1994, Wahle and Incze 1997). Postlarvae utilize a variety of habitat types (e.g., nearshore rocky areas, offshore canyons, enclosed embayments, estuaries) that differ in their abiotic and biotic features over spatial and temporal scales (Wahle 1993, Wilson 1999, Wahle et al. 2013). Although subtidal cobble beds are largely considered preferred settlement areas (Wahle and Steneck 1991), the plasticity in substrate settlement choice remains broad (Caddy 1986). Howard and Bennett (1979) and Pottle and Elner (1982) found that lobsters tend to choose gravel rather than silt/clay substrates. Cobb et al. (1983) and Able et al. (1988) both found that postlarvae settle rapidly into rock/gravel, macroalgal-

covered rock, salt-marsh peat, eelgrass, and seaweed substrates. Barshaw et al. (1985) and Barshaw and Bryant-Rich (1988) observed that postlarval lobster settled quickly into eelgrass, followed by rocks with algae in sand, then mud. In addition, the presence of biologically relevant odor plumes (adult conspecifics and macroalgae) and the existence of a thermocline have been reported to impact postlarval substrate selection especially in shallow habitats (Boudreau et al. 1991, 1993). Wahle et al. (2013) recently documented settled lobsters as deep as 80 m, although most were abundant above the thermocline (typically < 20 m, Boudreau et al. 1992) in summer-stratified regions (e.g., W. Gulf of ME and S. New England); likewise, depth-related differences were diminished in thermally mixed waters. A settlement (time series) index for American lobster has been formally established for lobster nursery habitats in both the northeast US and Atlantic Canada and remains active (see Wahle 2009, Wahle et al. 2013).

Juveniles & Adults

As in larvae, juveniles are distinguished by their ecological ontogeny until functional maturity and adulthood (see Lawton and Lavalli 1995). Lobsters may not leave their burrows until they reach a carapace length (CL) between 20-40 mm (Barshaw and Bryant-Rich 1988). Lobsters in this early benthic phase (5-40 mm CL) were found by Wahle (1988) and Wahle and Steneck (1991) in midcoast Maine to be most abundant in cobble and macroalgal-covered bedrock and rare in featureless mud, sand, or bedrock. Short et al. (2001) found evidence of adolescent lobsters and their preference for eelgrass beds in the lower portion of Great Bay Estuary, NH and reported that in associated mesocosm experiments, lobsters (53-73 mm CL) showed a clear preference for eelgrass over bare mud.

It is difficult to conclude that shelter-providing substrate, cobble in particular, represents a natural demographic bottleneck when juvenile lobsters occur in other substrates (e.g., eelgrass, bedrock, and muds; Addison and Fogarty 1992). However, in the absence of shelter juvenile lobsters require substrate that they can manipulate to form a shelter, especially YOY lobsters (Lawton and Lavalli 1995). The range of habitat types available to juvenile lobsters increases as pressure from predation declines (Lawton and Lavalli 1995) and the need for specific shelter size may be resolved by the lobster's ability to manipulate its environment which can result in the construction of suitable shelter from otherwise uninhabitable substrate. The excavation of shelters under man-made objects is common among juvenile and adult lobsters and may be important on featureless bottom (Cooper and Uzmann 1977).

Finally, Geraldi et al. (2009) determined that lobster movements were influenced by the quality and type of substrates (e.g., rock vs. sand) through which they were moving. Based on tag returns, lobsters that were initially caught and released on sediment moved farther and faster than those initially caught in traps on rocky substrate. Even in some estuarine environments, complex hard-bottom areas between soft-sediment patches (e.g., eelgrass beds) can serve as corridors and passageways for decapod crustaceans engaged in short- or long-term movements (see Micheli and Peterson 1999).

1.1.7. Oceanography

Abiotic factors such as tidal fronts, internal wave slicks, turbulence, surface currents, wind and Ekman transport (among many others; reviewed in Shanks 1995) at the time (and site) of hatch set the initial conditions for larval dispersal, and vary depending on the timing of this event (Tlusty et al. 2008, Goldstein 2012). The residence time for lobster larvae in the water column is controlled predominantly by surface water temperatures and, to a lesser extent, by food availability (Phillips and Sastry 1980, Mackenzie 1988, Annis 2005, Annis et al. 2007). These two factors, temperature and food ultimately help to influence their final destination along with intrinsic larval behaviors (e.g., vertical migration and swimming, Harding et al. 1987, Ennis 1995).

In the Gulf of Maine (GoM) there is considerable variation in circulation patterns from year to year. Variations in temperature and volume of water flowing into the GoM (including freshwater input from rivers) along with atmospheric fluctuations (temperature and wind patterns) are all factors that significantly affect the scale and duration of GoM circulation features like water masses (different densities), gyres, and alongshore currents (Mountain and Manning 1994). Various sources and sinks have been suggested for lobster larvae (e.g., wind direction, nutrients, drift; Katz et al. 1994, Incze et al. 2006, Chassé and Miller 2010). Incze and Naime (2000) reported on cross-shelf transport and the ability of larvae to utilize onshore sea breeze transport towards shore. Recently, Xue et al. (2008) and Incze et al. (2010) identified sources and sinks for 15 coastal areas and modeled larval release and dispersal over a period of four months. The Southern New England (SNE) stock area is characterized by weaker tidal currents than the GoM and Georges Bank, and, as a consequence drift was found to be highly wind dependent, with tidal currents only influencing short term movements. Fogarty (1983) observed peak larval densities following periods of inshore winds in the days preceding sampling in Block Island Sound and identified offshore areas and LIS as larval sources. Lund and Stewart (1970) suggest that relatively high concentrations of larvae in western LIS are a result of surface currents creating a larval retention area.

1.1.8. Diet

<u>Larvae</u>
The natural diet of larval and postlarval lobsters includes the wide variety of phytoplankton and zooplankton available to them (Ennis 1995), but, for the most part is relatively unstudied as more diet studies have been conducted in relation to culturing larvae in hatchery-type settings (e.g., Conklin 1995). Unlike the earlier larval stages, Stage IV postlarvae show increased dependence on protein and sequester lipid stores (Ennis 1995).

<u>Juveniles & Adults</u>
Zooplankton has been shown to provide an adequate diet for the growth and survival of shelter restricted juveniles and supplements the diet of emergent phase juveniles (Barshaw 1989, Lavalli 1991). Despite these habitat differences, diet is fairly consistent for emergent and vagile phase juveniles and is dominated by mussels, lobsters, rock crabs (*Cancer spp.*) and gastropods (Weiss 1970). Plants may be actively selected, forming a functional nutritional component of the diet (Weiss 1970, Conklin 1995). Lobsters forage among a wide spectrum of plants and animals that include crustaceans, mollusks, echinoderms, polycheates, and macroalgae. Lobsters are also known to temporally shift their diet depending on season or habitat (Elner and Campbell 1987, Conklin 1995) and are considered keystone predators,

capable of driving the trophic dynamics in many benthic communities (Mann and Breen 1972). There is typically peak feeding activity between June and July; feeding activity then remains high in September even as temperatures begin to fall; and females maintain a higher level of feeding activity than males, at least until mid-February (Lawton and Lavalli 1995).

Given the widespread use of baited traps in some areas, it is very likely that these components play a significant role in habitat in some areas. Since many lobsters enter and vacate traps repeatedly (Jury et al. 2001), it is likely that most lobsters feed from traps before they are finally captured. In areas of intense fishing pressure, trap bait may provide a significant energy subsidy, supplementing the natural food resources available on lobster grounds (Lawton and Lavalli 1995, Grabowski et al. 2010).

Category	Life-Stage	Threshold Value	Reference
Temperature	Eggs Larvae Juveniles/Adults	<5^{o}C winter, 10-12^{o}C hatching 10-12^{o}C 5-18^{o}C, preference ~ 16^{o}C, 20.5^{o}C stressed	1, 2 2 3, 4, 5, 6
Salinity	Eggs/Larvae Juveniles/Adults	< 17 ppt < 12 ppt	7 8
Dissolved Oxygen	Larvae Juveniles/Adults	< 1 mgO_2L^{-1} < 2 ppm	9 10
pH	Larvae Juveniles/Adults	< 7.7 (Stages I – IV) n/a	11

Table 2. A summary of key biological threshold values for *H. americanus.* References: (1) Waddy and Aiken 1995; (2) MacKenzie 1988; (3) Reynolds and Casterlin 1979; (4) Crossin et al. 1998; (5) Dove et al. 2005; (6) Powers et al. 2004; (7) Charmantier et al. 2001; (8) Jury et al. 1994; (9) Ennis 1995; (10) Howell and Simpson 1994; (11) Keppel et al. 2012.

1.2. Anthropogenic & Ecological Impacts on Lobster Habitat Components

Coastal areas in general attract construction and land and water-based development activities, which in-turn contributes to cumulative impacts on coastal resources, including fisheries. These activities can introduce pollutants (through point and non-point sources), cause changes in water quality (temperature, salinity, dissolved oxygen, suspended solids), modify the physical characteristics of a habitat, or remove/replace the habitat altogether, all of which can result in adverse impacts (particularly near-shore) on American lobsters and their associated resources.

1.2.1. Dumping & Dredging

Human activities can have a significant impact on the lobster resource and its environment. Siltation and turbidity from deforestation, poor agricultural practices, urban development, quarrying, dredging, construction, or oil drilling can destroy lobster habitat and adversely affect larval growth, development, and survival (Aiken and Waddy 1986, Harding et al. 1982, Harding 1992).

Ocean dumping has been identified as another major problem for lobster especially when it results in burying gravel beds. "Ocean dumping of silt-clay over gravel may increase spatial competition among juvenile lobsters for shelter in remaining gravel habitat" (Pottle and Elner 1982). Ocean dumping can affect bathymetry, sediment grain size, and trace element concentration disturbing benthic biota and population structure (Aiken and Waddy 1986). The disposal of soft sediments from harbor dredging can directly impact lobster habitat and disrupt food resources; however, the dumping of coarse, uncontaminated material may enhance lobster habitat once it is colonized with prey organisms (Harding 1992). For over 60 years (1924-1986) a marine dump-site off New York in the New York Bight apex (12-mile site) received an annual average of 8 million metric tons of sewage sludge from sewer districts in the New York/New Jersey area (ASMFC 1997). This location, at the head of Hudson Canyon, has been noted for its heavy metal contamination, high fecal coliform counts, “black oozy substrate, and anoxic layer of bottom water”. The area has been largely devoid of fishing practices. An elevated incidence of shell disease in some animals (‘burn spot’, shell disease, or epizootic shell disease, undetermined) and black gill disease was observed in crustaceans collected at this site (Harding 1992).

Since dumping at the 12-mile site ended in 1987, followed by a shift to a deepwater, 106-mile site, studies have shown some improvement in contaminant levels, bacterial counts, and in the low dissolved oxygen readings, which previously characterized the area. However, shortly after dumping began in the 106-mile offshore site, reports by offshore fishermen indicated a high rate of shell disease (or related, see above) in both lobsters and rock crabs in that area and a concurrent decline in landings. As a result, a joint NOAA/EPA Working Group met between 1988 and 1989 to assess if a relationship existed between shell disease prevalence and crustacean population fluctuations, and to determine if shell disease is pollution-related and if it results in mortality (Sindermann 1996).

The working group concluded that, although mortalities from shell disease have been observed in laboratory or impounded situations, and shell disease may pre-dispose crustaceans to predation or disease-related mortality, there is no conclusive evidence that shell disease causes fluctuations in crustacean populations in the New York Bight apex (ASMFC 1997). Subsequent studies conducted in the 12-mile site have been unable to conclude if improvements in shell disease prevalence have occurred since the sludge dumping was suspended, due to highly variable data.

Dredging and drilling muds also can be toxic at lethal and sublethal concentrations. Pottle and Elner (1982) reported that dredging or smothering of 'nursery areas' occupied by juvenile lobsters could have serious consequences for future recruitment into commercial fishing areas. Potentially lethal components of drilling muds include petroleum hydrocarbons, asphalts, aromatic lignosulphates, heavy metals and calcium-like cations such as barium and strontium. Observed reactions of lobsters to these include, depending on the concentrations, impaired coordination, cessation of feeding, loss of mobility, and death. Inhibition of burrowing behavior of Stage IV and V lobsters has been demonstrated (Mercaldo-Allen and Kuropat 1994). Drilling muds also affect habitat by their tendency to settle in depressions or flow downhill, a particular problem for lobsters whose natural habitat is offshore canyon areas

1.2.2. Energy & Transportation Projects

The Federal Energy Policy Act of 2005 allows leases, easements, and rights-of-way for coastal and offshore project activities for "energy-related purposes or for other authorized marine-related purposes," and support for offshore operations and facilities (NMFS 2010). Therefore, there are likely many cases where these present and future activities could impact habitat for lobsters.

Federal offshore areas are also increasingly being used as sites for energy projects, such as wind farms and LNG (liquid-natural gas) terminals (e.g., Neptune and Excelerate offshore LNG facilities, see NMFS 2010) and related infrastructure, such as pipelines. These sites potentially compete with the commercial lobster industry for space and may impact the integrity of certain habitat types for lobster. The implementation of pipeline projects or their related facilities raises concerns about the impact that their placement could have on lobster mobility and lobster habitat. The HubLine natural gas pipeline (29.4 mi long and 24-30" diameter pipe) from Salem/Beverly to Weymouth was constructed by Algonquin Gas Transmission Company in Massachusetts Bay between 2002-2003, and prior to this, Massachusetts Division of Marine Fisheries (MADMF) undertook extensive assessments (commercial lobster sea-sampling, ventless lobster trap monitoring, and early benthic phase lobster suction sampling) to evaluate the impact of these pipeline activities (see Estrella 2009 for details). Results indicated that there was no definitive evidence found that surface-laid pipe or its trench construction blocked the seasonal inshore migration of lobsters.

Wind farm proposals are also becoming more popular and these proposed projects include the establishment of underwater platforms that could potentially influence lobster movement patterns and local current structure thereby influencing larval dispersal patterns, impacting predator-prey interactions, and altering dominant fishing practices. However, additional structures (e.g., submersed platforms) may potentially benefit lobsters with additional structured habitats. Cape Wind Associates (CWA) proposes to construct a wind farm on Horseshoe Shoal, located between Cape Cod and Nantucket Island in Nantucket Sound, Massachusetts (NMFS 2010). The CWA project would have 130 wind turbines located as close as 4.1 miles off Cape Cod in an area of ~24 mi^2 with the turbines being placed at a minimum of 1/3 of a mile apart. If constructed, theses turbines would preempt other bottom uses in an area similar to oil and natural gas leases. The potential impacts associated with the CWA offshore wind energy project include the construction, operation and removal of turbine platforms and transmission cables; thermal and vibration impacts; and changes to species assemblages within the area from the introduction of vertical structures (NMFS 2010).

1.2.3. Pollution & Water Quality

Lobsters are sensitive to chemicals and have been known to vacate areas that have been subjected to pollution. Connor (1972) estimated that larvae are more susceptible than adults. The effects of petroleum products, industrial chemicals, and heavy metals are well published and include reduced survival, molt inhibition, regeneration, malformation, and changes in metabolism, energetics, and behavior (Aiken and Waddy 1986). Other important human activities that may lead to pollution and lobster habitat destruction include landfills, dredging, dumping, industrial wastes, spills and sewage outfalls. Point sources of pollution come from industrial plants, such as pulp and paper mills, fish processing plants, textile mills, metal

fabrication and finishing plants, municipal sewage treatment plants, and chemical and electronic factories.

Non-point sources are not as easily located. Rainwater runoff often contains pesticides from agricultural and forested areas along with hydrocarbons, heavy metals and organics from urban areas. It is not unusual for older cities to combine their storm drainage system with the sewer system that results in raw sewage discharges during times of overflow (Lincoln 1998). All of these pollution sources can have a tremendous impact on water quality and habitat preservation. These problems can be multiplied when the contaminants get into the sediments and then are disturbed by dredging. When contaminants are suspended in the water column they become available for uptake by many species (including lobsters) and can accumulate throughout the food chain.

Considerable research has been done on the effects of hydrocarbons and drilling fluids on lobsters (Atema et al. 1982). These studies show that "both the chemical toxicity in the water column and the physical effect of covering the substrate with drilling mud interfere with normal lobster behavior." For postlarval lobsters, sublethal effects included feeding and molting delays, severe delays in shelter construction, increased walking and swimming difficulties, and lethargy. Atema and others (1982) concluded "perhaps as little as 1 mm (~0.04 inches) covering of drilling mud may cause increased exposure to predators and currents, resulting in the substrate becoming unsuitable for lobster settling and survival."

Pesticides & Heavy Metals

Lobsters are highly sensitive to certain pollutants, particularly pesticides. Organochlorines (e.g., DDT, PCDD, endosulfan, endrin, dieldrin, chlordane), pyrethoid pesticides (e.g., permethrin, cypermethrin, and fenvalerate) and organophosphate pesticides have very low lethal thresholds for lobsters (Mercaldo-Allen and Kuropat 1994). The use of organophosphate pesticides (e.g., emamectin benzoate, azamethiphos) to treat sea lice infestations in aquaculture operations (typically salmonids) have negative impacts on lobsters as well. Abgrall et al. (2000) investigated the use of azamethiphos in relation to shelter use by juvenile lobsters in the laboratory. Results indicated that lobsters avoided high levels of azamethiphos by vacating their shelters and concluded that although concentrations used in the aquaculture industry (100 μgL^{-1}) are low and would not affect lobster shelter use, mortality would increase due to prolonged exposure time to this pesticide or, indirectly through the susceptibility of leaving a shelter. Waddy et al. (2007) reported that a similar pesticide (emamectin benzoate), added as a prescribed medicated treatment for ectoparasites in salmon feed was capable of disrupting molting in ovigerous lobsters (these animals molted prematurely and lost their eggs), but is not typically consumed at high enough doses (0.6-0.8 $\mu g\ EMBg^{-1}$ was considered high), to elicit such a response. However, the impacts of waste fish feeds and their attractiveness to lobsters in aquaculture operations is something that warrants further research.

Importantly, chemicals used in mosquito control may have volatile effects in some lobster populations. The pesticides malathion, resmethrin, sumithrin, and methoprene elicit negative sub-lethal effects on lobster immune systems and act as endocrine disruptors (from all life-stages). Many of these chemicals were routinely used throughout the New York Metropolitan area to control West Nile Virus and coincided with a mass lobster mortality event in WLIS in 1999 (CTDEP 2000). Subsequent laboratory studies (DeGuise et al. 2005, Zulkosky et al. 2005) have shown that both lobster larvae and adults are sensitive to these compounds however, the concentrations and degree to which these lobsters were exposed is not fully

known though modeling research by Landeck-Miller et al. (2005) suggest that concentrations of pesticides in the near bottom waters of LIS during 1999 probably were not high enough to represent stress to lobsters.

Heavy metals such as arsenic, copper, mercury, cadmium, iron, zinc, and lead are toxic at various concentrations and the details of their toxicity throughout all lobster life-stages is given in Mercaldo-Allen and Kuropat Tables 2-29 (1994). Stage I lobster larvae are quite sensitive to heavy metals. Although mortality resulted from test exposures to all three metals, toxicity to mercury was the greatest for first stage larvae followed by copper, then cadmium. Exposure to higher concentrations of copper (56 vs. 30 mgL^{-1}) was necessary for a lethal effect on juveniles and adults. Only sublethal effects were observed in juveniles from significant cadmium contamination while adults were not affected (Mercaldo-Allen and Kuropat 1994). The exposure of lobsters to heavy metals in the laboratory produced sublethal effects including impaired chemoreception and biochemical changes.

Pollutants such as polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), halogenated hydrocarbons, and detergents may not have detrimental effects upon lobsters themselves, but may render them unfit for human consumption. Large quantities of PCBs were discharged by electrical component manufacturers into New Bedford Harbor and the adjacent Acushnet River in Massachusetts over several decades (Weaver 1984). The harbor sediments and biota still contain relatively large concentrations of PCBs that resulted in a significant segment of this estuarine system being closed to commercial lobstering. PCBs and PAHs accumulate quickly in lobster tissues, especially in the hepatopancreas, and can be slow to depurate. Organic chemical exposure interfered with normal behavioral, chemosensory, and physiological processes. Industrial wastes resulted in significant lobster mortality by causing asphyxiation and/or cardiac function (Mercaldo-Allen and Kuropat 1994).

Oil Pollution

Many studies have been conducted on the effects of crude oil on lobsters. Toxicity varies with the level of refinement of oil and the concentration to which the animals are exposed (Mercaldo-Allen and Kuropat 1994). For example, the more highly refined no. 2 fuel oil is more toxic than no. 6 oil. Responses to exposure range from mortality to sublethal effects of chemosensory interference or loss of coordination and equilibrium (Harding 1992). Larval forms are particularly sensitive since oil co-occurs in surface waters with them.

Oil pollution also severely and negatively affects the small food organisms critical to larval lobsters. Larvae which were fed oil contaminated *Artemia* spp. exhibited disruption in energetics (including reduced lipid levels), molting delays, reduced respiration rates, slowed growth rate, and changes in the oxygen/nitrogen ratio (Capuzzo and Lancaster 1981, 1982, Capuzzo et al. 1984, Mercaldo-Allen and Kuropat 1994). Oil pollution also affects lobsters in their adult stages. For example, laboratory studies have indicated that small quantities of crude oil can interfere with specific, perhaps chemosensory, behavior of lobsters. Feeding behavior has been shown in these studies to be affected, with the period between detection and attempted acquisition. Because of changes in feeding and other behaviors, it is possible that crude oil may interfere with the ability of male lobsters to detect sex pheromones released by female lobsters, which could severely interfere with reproductive activity.

Chlorine Toxicity

The effects and impacts of chlorine toxicity are related to the construction (some recent) and operation of chlorinated sewage outfall effluent. A MADMF report (2010) sought to assess if chlorinated sewage treatment plant effluent is having adverse effects on lobster abundance and the hard-bottom habitats utilized by lobster and other marine organisms in Massachusetts Bay and Buzzards Bay. Since 2000, sewage from the Greater Metropolitan Boston area is discharged into Massachusetts Bay through a 9.5-mile outfall pipe terminating in ~100-ft. deep waters. This effluent is discharged through more than 50 diffuser heads spanning the final ~1 mile of the outfall. Prior to 2000, sewage effluent for the Boston Harbor region was released through outfalls within the harbor. In one report (prior to the outfall's completion), Mitchell et al. (1998) concluded, "No impact is expected from residual chlorine in the effluent because after the initial dilution, the concentration of chlorine will be below water quality standards and will likely not be present at detectable levels once discharged". A second report by Lavalli and Kropp (1998) examined and compared the densities of YOY and shelter-restricted juvenile lobsters at the proposed Mass Bay outfall site prior to the outfall activation. In early September 1998, suction sampling for YOY was conducted at both the vicinity of the outfall and two nearby inshore stations. The data collected showed significantly lower densities of YOY and yearling lobsters as well as larger early-benthic-phase lobsters at the outfall compared to the inshore sites. Lavalli and Kropp's report concluded that, "while the cobble habitat at the vicinity of the outfall is suitable for settlement, it does *not* represent a major settlement site and thus there is no indication that the outfall will have any appreciable impact on these life stages of the American lobster".

Outfall benthic monitoring reports (dating back to 1992 and consisting of 23 fixed stations) concluded that associated hard-bottom communities have "not changed substantially with activation of the outfall" (Maciolek et al. 2009). MADMF (2010) indicated no short-term lethal effects on lobsters in the immediate environment surrounding the outfall. In addition, the report stated (at the time the assessment was conducted) that although isolated instances of chlorine exposure may adversely affect lobsters, this would likely be a discrete event in both time and space.

In terms of acute toxicity, Capuzzo et al. (1976) studied the effects of chlorine on larval (Stage I) lobsters in the laboratory and documented respiratory stress at levels of 5000 μgL^{-1} of free chlorine and an LD_{50} of 16.3 mgL^{-1} (16,300 μgL^{-1}) of free chlorine (sodium hypochlorite) at 25˚C. Additional LD_{50} tests at 20 and 30˚C found no significant mortality at 20˚C and exposure at 30˚C resulted in an LD_{50} of 2.5 mgL^{-1}. Chloramines (post treatment residuals) and free chlorine was found to be harmful to Stage I larvae depending on the concentration, temperature, exposure duration and form of chlorine.

1.2.4. Commercial Fishing Practices

"Habitat alteration by the fishing activities themselves is perhaps the least understood of the important environmental effects of fishing" (NRC 1995). In order to help minimize adverse effects of fishing practices, the Swept Area Seabed Impact (SASI) model (and its parameters) was recently adopted to provide a coherent framework for "enabling managers to better understand the nature of fishing gear impacts (including lobster) on benthic habitats, and the spatial distribution of benthic habitat vulnerability to particular fishing gears" (see Figure 1 in NEFMC 2011). This comparative and integrative approach allows for a thorough assessment

of gear types and their impacts and contributes to the objectives of essential fish habitat (EFH) in both New England and throughout the mid-Atlantic (NEFMC 2011).

Claw Loss & Shell Damage

Cull lobsters (those with missing or regenerating claws) are attributed to anthropogenic as well as natural causes. Among potential fishery-induced injuries, claw loss significantly impacts market value. Krouse (1976) calculated that cull lobsters weighed 14-20% less than fully clawed lobsters. Since 1999, an annual average of 10-20% of the total catch sampled from commercial lobster traps in Massachusetts coastal waters were culls (Glenn et al. 2007). However, an overlooked impact of culling is its effect in reducing the growth rate due to the energy partitioning between molt and regeneration (Aiken 1980). This can delay recruitment to minimum commercial size, and, if maturity is more a function of age than size, as it is in the spiny lobster (Davis 1981), then the size at maturity will be lowered. Claw loss can also affect lobster behavior. It is possible that since dominant lobsters "claim" the optimal shelters, animals which are behaviorally subordinate due to claw loss are forced to congregate on less optimal habitat (i.e., open sand or mud areas) which lack structure. Additionally, a number of lobstermen claim that there are areas that they refer to as "hospital grounds" where large numbers of culls can be found, particularly in estuaries (e.g., Moriyasu et al. 1999).

Inter- and intra-specific aggression in lobster traps, as well as handling by fishermen, contribute to claw loss which may also occur in the wild as a result of not only territoriality but through aggressive encounters as well (O'Neill and Cobb 1979). The relative contribution of each potential cause is unknown. Mobile gear fisheries contribute to lobster shell damage and can result in mortality. Observations of fresh shell damage and claw loss were made when investigating the impact of bottom trawling off Duxbury Beach, Massachusetts (Estrella 1989). The occurrence of fresh shell damage in new-shelled lobster was consistent with the results reported by Ganz (1980) in Rhode Island waters and Smith and Howell (1987) in LIS. Although Spurr (1978) did not record molt stage of the lobsters he studied off New Hampshire, he reported that the highest damage incidence occurred in July; when new-shelled lobsters are expected to be more abundant.

Trawling

Some level of delayed mortality occurs to new-shelled lobsters that are damaged by trawling (e.g., otter) and dredging (e.g., scallop). Smith and Howell (1987) observed delayed mortality in 33.3% of the 18 new-shelled lobsters they tested. Similar results were found by Witherell and Howe (1989) who calculated a cumulative mortality of 29.5%. The mortality to undamaged hardshell lobsters was 0.6% (Smith and Howell 1987). The impact of trawling on sandy habitat is negligible and of short-term duration (Estrella 1989, Spurr 1978). Graham (1955) and Gibbs et al. (1980) found no detectable changes in benthic fauna as a result of trawling in their sandy study areas. Smith and Stewart (1985) concluded that no long-lasting impressions or habitat loss resulted from trawl door furrowing in soft mud bottom and only minor sediment disturbance (<1" depth) occurred in the sweep path.

More recently, Simpson and Watling (2006) conducted a study on the impacts of shrimp trawling in the GoM and its effects on mud-bottom fishing grounds. Their results suggest that seasonal shrimp trawling produced short-term changes (<3 months) to the macrofaunal community but did not seem to result in any long-term changes. Furthermore, the impacts to these trawling activities were mitigated, in part, by benthic megafauna (lobsters and fishes) through burrowing and pit digging by these animals; these activities acted to rework sediments thereby minimizing these impacts. It seems logical that lobster vulnerability

should not be as great on rough rocky substrate where boulders would prevent the sweep from riding close to the bottom. Nocturnal vs. diurnal behavior may be important factors in lobster catchability from trawling. Smith and Stewart (1985) discussed the potential for greater lobster activity during daytime in dark deep-water environments compared to lighter shoal areas.

Traps

While there have been few studies on the effect of lobster traps on benthic habitats, available information suggests trap gear tends to have limited long-term adverse impacts on benthic habitat, particularly when compared with mobile fishing gears such as trawls and dredges. Because most inshore lobster traps are hauled, re-baited, and then reset on a regular basis, frequent hauling in areas of dense vegetation (e.g., kelp beds and eelgrass) is more likely to result in damage (ASMFC 2003, NMFS 2010). By comparison, the evaluation of lobster traps on attached epibenthic megafauna (sponges, soft corals, tube worms) in a European study showed no negative effect on the abundance of attached megafauna (Eno et al. 2001), however wind-driven effects on trap movements were shown to impact sessile benthic habitat fauna in the spiny lobster fishery (see Lewis et al. 2009). Therefore, variables such as depth, turbulence, and wind events may be factors that contribute to and influence trap-gear impacts. A workshop concerning the effects of fishing gear on marine habitats in the northeastern U.S. concluded that the degree of impact caused by lobster pots and traps to biological and physical structures and to benthic species in mud, sand and gravel habitats was low; impacts were expected to be greater in rocky habitats where emergent epifauna or biogenic structures are present (NEFMC 2002). More detailed work in this area could be useful in assessing *H. americanus* trap impacts to benthic habitat structure.

Ghost Traps & Derelict Gear

'Ghost fishing' can been defined as "the mortality of fish and other species that takes place after all control of fishing gear is lost by a fisherman" (www.fao.org/fishery) and can be detrimental to the lobster resource and its fishery. Ghost traps have been estimated to continue to fish at a rate of 10% the effectiveness of a baited trap with 25% of the ghost trap lobsters dying (Pecci et al. 1978) and represents an ~3-6% loss in annual landings in the U.S. (Harding 1992). Regulations addressing ghost fishing through a requirement of biodegradable escape panels or hinges are now in place in most states however it is important to note that few studies have been carried out to assess the degradation time for these devices (although they are usually replaced annually, C. Wilson, pers. comm.). Lobsters and other marine animals captured in derelict traps may experience starvation, cannibalism, infection, disease or prolonged exposure to poor water quality (low dissolved oxygen, Guillory 1993). In the Chesapeake Bay blue crab fishery, Havens et al. (2008), used side scan sonar to locate derelict traps and assess their extent and accumulation rate in the York River, Virginia. Trap loss rates were estimated at 30%, resulting in the potential addition of over 100,000 traps annually to the Chesapeake Bay derelict trap population in Virginia.

Gear loss can be expensive (~$100 per trap) and with the advent of inexpensive and readily available technology such as GPS systems, the retrieval of lost gear is possible. In other instances, programs have been carried out to recover, document and dispose of derelict (ghost) lobster traps (Gulf of Maine Lobster Foundation, GOMLF, 2011, see http://www.gomlf.org/index.asp). For example, during the 2010 gear recovery effort, more than 1,000 traps were recovered by 27 fishing vessels from three lobster conservation management zones. In WLIS, the Cornell Cooperative Extension (CCE) conducted a total of 28 research trips during the Fall of 2010 and retrieved 2,298 derelict lobster traps and

recycled 25.95 tons (51,900 lbs.) of derelict lobster traps into clean renewable energy (CCE, NFWF 2012). The CCE study also catalogued each trap that was retrieved (e.g., physical condition, escape vent present) and concluded that these abandoned, lost, or discarded lobster traps are a problem in WLIS. Often, many of the LIS lobster traps that were recovered had sunk into the mud above the vent, making them inoperable. Similar efforts have also been underway (in LIS) through the National Fish and Wildlife Foundation's WLIS Marine Debris Assessment and Prevention Program (NFWF 2012).

Between 2010 and 2011, a series of 'abandoned' lobster pot trawls were deployed and monitored (SCUBA assessments) in Cape Cod Bay and Buzzards Bay. A key finding from this study showed that ghost traps continue to fish for longer than previously thought (> 2 years or more; NFWF 2012). Additionally, traps that are set in deeper waters or in proximity to sheltered environments "may continue to catch lobster and bycatch species for an extended period of time due to a lack of oxidation of the metal (hog rings) while in the water and attachment of biofouling organisms over the escape panels"(NFWF 2012).

Whale Entanglements

Although a variety of species are potentially capable of entanglement from lobster trap gear, whales (in-particular North Atlantic right whales, but others as well) are vulnerable due to their propensity to feed below the surface, or feeding while swimming with their mouths open (NMFS 2010). Johnson et al. (2005) noted that any part of the trap gear complex (the buoy line, ground line, float line, and surface system line) creates a risk of entanglement. It is probably the case that the total numbers of entanglement are greater than those actually recorded. For example, a total of three right whale entanglements due to lobster gear were documented in Maine coastal waters between 1997-2005 (NMFS data compiled by the Massachusetts Lobstermens Assoc.), and 48 cases of entanglement from 1997-2005 in Northeastern waters (NMFS compilation for ALWTRT). Additional studies concluded that 60% and 70% of right whales exhibited entanglement scarring, suggesting this is an ongoing issue (Fujiwara and Caswell 2001, Myers et al. 2007). The problem seems to be more significant in offshore waters where vessels tend to fish larger strings of traps. Although Federal regulations seeking to mitigate entanglements by mandating sinking ground line on all lobster trap gear (effective April-2009), vertical lines that link the bottom-tending trap to the surface line(s) and buoy(s) continue to pose an entanglement risk to protected species (NMFS 2010).

By-catch

The term 'by-catch' refers to the unintentional landing and discarding of animals not specifically targeted by fishing vessels (NMFS 2010). In general, traps used in commercial lobster fisheries are among the more selective types of fishing gear but they are known to capture non-targeted species. Therefore, by-catch is a relevant and indirect component to habitat since there is the potential to alter community structure (e.g., removal of predators). By and large, overall levels of by-catch in lobster traps are low relative to other marine fisheries. Fish and invertebrates landed in lobster traps are likely to be discarded with lower mortality rates than those landed with other gear types such as trawls and dredges (Davis 2002).

Fishes that are caught in lobster traps include tautog, scup, black sea bass, cod, cusk, eels and flounder. C. Wilson (data from Maine DMR) indicated that at least 10 finfish species are routinely documented as discarded by-catch (see Table 1 in Bannister et al. 2013). The most abundant fish by-catch is longhorn sculpin, comprising 0.5% of the lobster catch over a 3-

year period. In addition to fish, a variety of invertebrates are found in and attached to lobster traps, including Jonah and rock crabs, red crabs, starfish, urchins, whelks and conchs (ASMFC 1997, Bannister et al. 2013). The discard mortality rates (% of discarded animals that die) associated with animals caught in traps is considered low, particularly when compared against the mortality rates linked with mobile fishing gears such as trawls and dredges (NMFS 2010).

Lobster Trap Bait

Bait used in lobster traps is an important component of the lobster fishery. It has been estimated that 50-60,000 tons of bait (primarily Atlantic herring) are used in the U.S. lobster fishery annually (NMFS 2010). In Maine, herring comprises nearly 90% of the bait used while in SNE, skate (~ 15,000 tons/year since 2001) are frequently substituted as bait. Many lobstermen consider the amount of bait being used in the fishery as providing a positive effect on the lobster population as it is often remarked that 'lobsters are being farmed'. The rationale behind this notion is that sub-legal sized lobsters, in addition to other by-catch (fishes and crabs), move in and out of traps to feed on bait. Thus, this 'bait subsidy' (bait use has increased 4-fold since the 1970s in Maine) is responsible for an increase of lobster abundance in some areas and may be a contributing factor in lobster biomass in some coastal areas (Grabowski et al. 2009, 2010). In one recent study, Grabowski et al. (2009) determined that sublegal lobsters in midcoast Maine grew 15% more per molt in fished areas (with trap bait) compared with closed areas, suggesting an effect of the bait subsidy; however at another site in eastern Maine, lobsters at unfished sites grew faster than those at fished sites. The differences in natural diets between sites confound these results indicating the challenges in controlling these effects in the wild.

In terms of bait utilization, it has been suggested that that about 2/3 of bait in traps is used by lobsters and the remaining 1/3 by crabs and other species (Grabowski, pers. obs.). It is proposed that bait may comprise a large proportion of a lobster's diet (upwards of 34-55 %), which could substantially impact their overall health as well (Myers and Tlusty 2009). A recent survey of bait use by Nova Scotian lobstermen indicated an average of 860 g (1.9 lbs.) of bait (herring or mackerel) was used each time a trap was set, translating to over 5,216 kg (11,500 lbs.) of bait/year/lobsterman (Harnish and Willison 2009). With such large volumes of bait being used in some areas, the ecological and economic implications of bait subsidies may be a concern to both scientists and industry.

1.3. Climate Change Impacts to Lobster Habitat Components

Climate change has always been an integral part of natural ecosystems and the fisheries that are supported therein. Although many fisheries worldwide can be resilient to environmental changes (Brander 2009), some factors may in fact limit this capacity: 1) the rate of climate change is predicted to accelerate in the near-future; 2) resiliency in species and systems is being compromised by increasing fishing pressures, pollution, habitat degradation, disease, and invasive species; and 3) the effects of lowering of the oceans pH due to rising CO_2 levels remains mostly unknown (Brander 2007, 2010). Additionally, distributional shifts to higher latitudes and deeper waters of commercially important marine species (including lobsters), in response to warming temperatures is leading to changes in community structure, trophic interactions, and the dynamics of fisheries, with increasing vulnerability of many coastal fisheries to climate change (Pinsky and Fogarty 2012, Cheung et al 2013).

Given the highly influential role that temperature has on all life history phases of *H. americanus* (Fogarty 1995), and the sensitivity of lobster growth and reproductive dynamics to variations in temperature regimes (Waddy and Aiken 1995), it is not too hard to prognosticate how climatological changes could affect lobster broodstock fecundity, size at maturity, egg development, and hatch, species range and distribution, population densities, among others. For example, rising seawater temperatures would accelerate egg development and hatching, thereby shortening larval development. In some areas, offshore movements by lobsters seeking to avoid warm water could cause eggs to hatch too far offshore (Goldstein 2012, Pugh and Glenn 2012), setting up sub-optimal dispersal trajectories and possible larval wastage. Other climate-related scenarios are certainly possible as well.

Changes in ocean temperatures will undoubtedly cause alterations to thermal profiles that would have cascading effects on the movement dynamics of ovigerous lobsters, which in turn, would influence egg development rates, timing of hatch, predation and ultimately, larval survivorship and dispersal. Continued and more detailed investigations of the physiological tolerances, thermal thresholds, and behaviors of ovigerous lobsters, their eggs and larvae and would certainly contribute to further enhancing our knowledge-base of the effects of changing ocean temperatures.

1.4. Present Condition of Habitats and Habitat Areas of Particular Concern (HAPCs)

American lobsters utilize and reside in nearly all habitat types throughout their range. This includes estuaries, intertidal zones, coastal nearshore waters, and offshore banks and deep-water canyons (Factor 1995, Lincoln 1998). NMFS (2010) report Table 3.13 describes in-detail these habitats and their characteristics. Habitat Areas of Particular Concern (HAPC) are described as subsets of Essential Fisheries Habitat (EFH) which are rare, particularly susceptible to human-induced degradation, especially ecologically important, or located in an environmentally stressed area. Although there are currently no documented HAPCs for American lobster, some areas that are particularly vulnerable to protracted and well-documented hypoxia events (LIS, Pearce and Balcom 2005), sub-optimal water temperatures (Buzzards Bay and other areas of SNE and LIS, Pearce and Balcom 2005, Pugh and Glenn 2012) and the presence of deleterious compounds in sediments, certainly warrant consideration for the survival of some lobster populations.

There are anecdotal reports from fishermen of habitats that, at certain times of the year, are spawning and broodstock habitats for ovigerous females. Lobstermen, usually try to avoid these areas, however large numbers of broodstock lobsters that do get caught may be subjected to rough handling practices. While the identification of these 'brooding areas' is known for some crab species (Dungeness crabs, Stone and O'Clair 2002), it is not documented for ovigerous American lobsters. It is essential that identified broodstock and nursery areas are prioritized habitats for lobsters. Finally, because we know that lobsters do in fact populate estuarine systems with regularity (and are purported to reproduce and possibly settle there (e.g., Wahle 1993, Goldstein and Watson unpub. data), these habitats are of particular concern given their pronounced vulnerability to habitat degradation and climate change (Kennish 2002).

1.5. American Lobster Habitat Bottlenecks

The ASMFC Habitat Guidance Document (2013, pending approval) defines a habitat bottleneck as "a constraint on a species' ability to survive, reproduce, or recruit to the next life stage that results from reductions in available habitat extent and/or habitat capacity and reduces the effectiveness of traditional fisheries management options to control mortality and spawning stock biomass." Although there is some evidence of preferred habitat types (both physical and biological, see Section 1.4.1 for review), there is no concrete supporting evidence that habitat is currently limiting to populations of American lobster. However, there are scenarios affecting components of lobster habitat (i.e., thermal) that would suggest otherwise. First, the "confluence and succession" of environmental factors that provoked a catastrophic loss in the LIS lobster population in 1999 (see Pearce and Balcom 2005 for summary), creating limited areas where lobsters could find safe refuge (although 90% were unable to do so). These lobsters, already compromised by disease (parasitic amobae), and above average water temperatures, became "physiologically weakened", resulting in significant population losses (CTDEP 2000). Therefore, selected habitat combinations that become stressful to lobsters (temperature, dissolved oxygen) can leave some populations vulnerable to further disease and possibly limit areas where conditions are more favorable to survival.

A second scenario involves the contraction of optimal or useable thermal habitat by lobsters (for basic physiological processes, egg and larval development, and growth) and is exemplified by seasonal changes and conditions in bays and estuaries where temperatures become sub-optimal for lobsters at certain times of the year. Repeated studies in Great Bay Estuary (NH) and Narragansett Bay (RI) have convincingly shown that lobsters will selectively avoid areas of sub-optimal temperature (e.g., excessively warm, in summer; Howell et al. 1999, Jury and Watson 2012, MADMF data). As a result of these differences, estuarine systems can become bottleneck habitats if conditions in these areas continue to deteriorate over time. Historically rich lobster populations such as in Buzzards Bay have now experienced dramatic declines and experience summertime temperatures in excess of 20°C (MADMF data, Pugh and Glenn 2012). As a result, lobsters have been concentrated at the mouth of the Bay. Recent MADMF data suggests that lobsters (including ovigerous females) are moving to deeper, cooler waters, thereby concentrating their populations in a much smaller area. These kinds of 'thermal refuges' may become increasingly common and create potentially significant bottlenecks with respect to brooding areas, places for lobsters to shelter and even possibly altered larval dispersal due to differences in their movements.

1.6. Habitat Enhancement

Due to past and present adverse impacts from human activities, restorative projects appear likely to have slightly positive effects at the local level. There have been few documented examples of lobster habitat enhancements in the GoM, but there may be significant potential for more, including the planting of artificial kelp beds (NMFS 2010). Artificial shelters made of PVC pipe and concrete blocks were have also been used with good results (Ojeda and Dearborn 1991). So far, evidence seems to indicate that these methods merely serve as gathering points for lobsters in the surrounding area (i.e., the 'attraction hypothesis'), leading some to believe that overall lobster density is not necessarily increased. However, in at least one study (Barber et al. 2009) it has been shown that early-benthic lobster settlement does in fact occur on some artificial reefs.

A number of studies have suggested that, in some areas, shelter is a limiting factor in the distribution and abundance of nearshore lobsters (Butler and Herrnkind 1997 for spiny lobsters, Whale and Incze 1997 in clawed lobsters). The addition of artificial reefs in areas previously devoid of cover or substrate suitable for burrowing has been shown to increase the abundance of resident lobsters (reviewed in Sheehy 1982). Observations have also indicated that extensive growth of encrusting organisms on artificial substrates serves as a source of food for lobsters. Following the M/V World Prodigy oil spill, NOAA and the University of Rhode Island (URI) designed and established an artificial reef system to increase lobster (www.darrp.noaa.gov.html). A total of six cobblestone reefs (in ~15 ft. of water) in Dutch Island Harbor near Jamestown, Rhode Island, were constructed to provide shelter for lobsters of all sizes. In 1997 more than 2000 tagged hatchery-reared YOY lobsters (Stages V-VI) were released over two successive years. Although the settlement of YOY lobsters was significantly increased, the density of YOY lobsters on enhanced reefs was not different from that on the control reefs; further results indicated possible behavioral differences between hatchery-reared lobsters making them more susceptible to predation (Castro et al. 2002, Castro and Cobb 2005). Therefore, future restocking efforts should focus on the behavioral conditioning of hatchery-raised lobsters in order to provide the best chances for survival.

An alternative approach to artificial reef development was recently developed and utilized to focus on criteria that would presumably make for a successful artificial reef for the settlement and growth of lobsters. Barber et al. (2009) developed a series of seven selection factors ('exclusion mapping, depth and slope verification, substrate assessment, data weighting and the subsequent ranking analysis, visual transect surveys, benthic air-lift sampling, and larval settlement collector deployment') that were used to model the efficacy, design, and implementation of an artificial reef system for lobster as related to the best possible biological and physical attributes, including a natural supply of larvae. Within only a short time post installation did this artificial reef yield densities of invertebrates and YOY lobsters that were similar to nearby natural reefs, suggesting that these structures may have future applications.

1.7. Recommendations for Further Habitat Research

Throughout this section there are already many mentioned areas that warrant further detailed research. Below is a thematic list of research topics pertaining to lobster habitat components where data gaps exists or areas where only limited evidence is currently available.

Environmental variables: How is this habitat component related to depth and temperature? They are often related, but it remains difficult to ascertain if lobsters are moving or choosing an area because of the depth or the habitat. Also, do lobsters aggregate in areas with their 'preferred' temperatures? Although there is already evidence for this (e.g., Crossin et al. 1988), we do not know how widespread this occurs. How would anticipated climate change scenarios (temperature, acidification – pH, sea level rise, and salinity) influence lobster life-history processes? For example, given changes to the Gulf of Maine current regime, how might egg development, larval duration, and larval transport become altered?

Ocean Acidification (OA): This is clearly a specific environmental variable we have very limited information regarding American lobsters. We can draw on only a few examples of other marine decapods (crabs, summarized in previous section) but studies that include all life-stages of lobsters should be considered. Focal questions could address how OA might

affect larval development and growth, shell integrity in juveniles and adults, and even possibly behavioral changes.

Traps: There is much to learn with respect to trap dynamics – how effective are traps to the sheltering and/or aggregation effect? Also, the dynamics of bait consumption and by-catch as well on lobsters is also relevant. Related to this are the impacts of bait consumption on lobster physiology and health. Although some recent study efforts have been carried out, we need to get a much better handle on ghost trap dynamics and how to quantify their impact.

Lobster Movements: There are many questions here that can be asked in the context of a changing ocean climate. For example, what environmental trigger(s) motivate lobsters to move offshore? Is it only based on temperature? What advantages are there for lobsters to move offshore and how have these patterns changed in specific regions of the fishery? Does shelter quality (or lack thereof) instigate movements to other areas? Based on previous findings from WLIS and Buzzards Bay, what are the 'threshold factors' that elicit lobsters to move away? What combinations of environmental factors and minimal levels are detrimental? Some recent work has suggested that some lobster movement may involve orientation along specific benthic habitat types suggesting habitat corridors of movement in some cases. This is one area of research that should be expanded upon as well.

Finally, do lobsters move and shift their habitats in anticipation of critical events like molting (finding a safe place to molt)? Furthermore, what about the importance of certain habitat types when lobsters densities become too high? – Will lobsters 'spill over' into poor habitat? One important, but sometimes controversial topic is the efficacy of marine protected areas for lobsters. Identifying habitat areas that are integral for brooding aggregations may be a useful starting point.

Mapping & Settlement: The mapping, characterization, and quantification of lobster habitat types needs to be continued throughout U.S. waters. The identification of habitat important to postlarval settlement and early benthic phase lobster is necessary in order to calculate a density index and evaluate a stock-recruitment relationship. Changes in species composition by area, from a hard-bottom complex to a soft-bottom complex and prey diversity on each bottom type should be determined. This information is an important precursor to recruitment assessments and to mobile gear impact studies.

Because, it was recently shown that postlarval lobsters can in fact settle in deeper waters, how common is this and do lobsters routinely settle offshore?

1.8.Recommendations for Monitoring and Managing Lobster Habitat

Most of the current management measures today (minimum sizes, v-notching, closed season, maximum size, slot limits, trap limits, protection of ovigerous lobster) were either discussed or implemented over 100 years ago. Many if these do not include habitat considerations and as such have had very mixed success. In order to be effective, both in supporting sustainable lobster stocks and viable harvest fisheries over an extended geographic range, new analyses of trends in lobster distribution must include known linkages of lobster survival and growth with threshold environmental conditions. Assessment models should incorporate climatic variables such as sea temperature, dissolved oxygen, and salinity by including these drivers as model covariates. To support these necessary modeling exercises, it is important to

develop and maintain consistent techniques that monitor distribution and abundance of lobster independent of the fishery so that lobster populations and their habitat needs can be effectively managed throughout their range.

Of particular importance is the need to continue and expand monitoring of the young-of-year and larval production so that highly productive areas are identified and protected. The last stock assessment peer reviewers emphasized the importance of monitoring recruitment in a fishery that relies heavily on newly-mature animals. The early benthic shelter-seeking phase may be the most habitat-dependent and therefore may form the most critical bottleneck determining ultimate population survival rates.

Some suggestions for monitoring the Southern New England lobster stock are outlined in the October 2011 peer review of the ASMFC Lobster Technical Committee Report entitled *Recruitment Failure in the Southern New England Lobster Stock.* One suggestion is for lobster surveys to be continued, and if possible increased, in the future to "enhance their power to detect changes in larval or young-of-year abundance." New surveys should be developed to give a more spatially comprehensive view of spawning patterns possibly with the deployment of passive postlarval collectors. Such surveys should be used to improve the understanding of the recruitment processes, provide early feedback on the success of management measures aimed at protecting spawning habitat and potential, and to allow forecasts of recruitment for both inshore and offshore areas.

Regionally, in the at the southern end of the current lobster distribution the combination of hypoxia and rising water temperature is narrowing the habitat area which can support a healthy lobster stock; identifying areas meeting minimum requirements (>2 ppm DO and <20° C) on an annual basis may provide guidance for stock rebuilding efforts.

The Southern New England Management Area (SNE) for American lobster is experiencing a general decrease in population abundance, particularly in the northern reaches of the range; Lobster Conservation Management Area (LCMA) 2, 4 and 6, as well as adjacent offshore areas of LCMA 3. Much of what is known about these areas has come through efforts made by the bordering states through ventless trap surveys, larval settlement surveys and continuous environmental data collected through fixed buoy systems for both surface and bottom temperatures. Before 2008, little work was completed in LCMA 4 and 5 when the New Jersey at-sea observer program started. New Jersey has been able to collect valuable fishery characterization data but lacks any serious effort at answering questions regarding juvenile habitat and recruitment areas. In order to complete the coverage of the SNE range, fishery-independent surveys in this area are critical.

The Gulf of Maine is a semi-enclosed marginal sea with several deep basins, strong tidal currents and a generally cyclonic circulation. Scotian Shelf water enters along the south coast of Nova Scotia and exits primarily along the northern edge of Georges Bank and secondarily through the Great South Channel (Brooks 1985). Currents are necessary for larval lobster transport that links inshore (coastal) and offshore (basin) lobster populations. Fogarty (1998) calculated that a modest amount of offshore larval supply could add significantly to resiliency of populations in inshore areas where the fishery is concentrated. Favorable conditions for larvae can greatly increase development rate and when coupled with typical physical forcing factors observed within the Gulf of Maine, as described above, create a delivery mechanism of competent larvae to nearshore nursery grounds (Incze and Naimie

2000). These favorable habitat conditions should be assessed and monitored as climatic variables may alter the success of this mechanism in future years.

Clear communication and cooperation among partners, agencies, councils, etc. that manage other fisheries can be an effective tool in maintaining productive American lobster habitat. An example would be conducting surveys to determine the distribution of critical life stages of lobster prior to the opening of areas closed to particular fisheries which may affect lobster habitat. Data from such surveys would inform managers of critical times and habitats vital to lobster growth and reproduction in the area. Periodic or rolling closures have proved to be very effective management strategies when the requirements of all marine resources are well known and well met.

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New England Fishery Management Council
50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
C.M. "Rip" Cunningham, Jr., *Chairman* | Paul J. Howard, *Executive Director*

February 13, 2013

Mr. John Bullard
Regional Administrator
National Marine Fisheries Service
55 Great Republic Drive
Gloucester, MA 01930

Dear John:

At its January 29-31, 2013 meeting, the New England Fishery Management Council discussed the inconsistency of lobster gear marking regulations for lobster pots and traps-in-a-trawl (TIAT) as well as related safety concerns. The Council believes that some of the current gear marking requirements may be unobservable on the water's surface and, in some cases, not strictly adhered to.

Previously, the Council had sent letters to NMFS and ASMFC on November 29, 2010 expressing concern that some fishermen were unaware of gear marking regulations. In response, the Regional Administrator sent a letter to permit holders to clarify and remind them to comply with gear marking regulations in the EEZ.

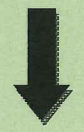
The Council now requests that NMFS work with the Coast Guard and ASMFC to determine if the inconsistency of lobster gear marking requirements in state waters and the EEZ may lead to unsafe conditions for fishing vessels. Inshore lobstermen are required to follow state laws which may differ from state to state and from EEZ requirements. Rules that should be reviewed include single buoys for three or less traps, a three-foot stick on only one end of a TIAT in Massachusetts waters (see attached chart), the use of sinking groundlines that may pull surface markings underwater given local tides, and no middle surface markings for TIATs less than 6,000 feet long. Also, some inshore lobstermen, who previously followed their state water rules, but who now also fish in the EEZ, may not realize they now are subject to different rules in the EEZ. The Council recommends a minimum standard for fixed gear similar to the current EEZ regulations for TIATs with more than three traps. The regulations require a western-most radar reflector with pennant and an eastern-most radar reflector. Finally, any changes to gear-marking regulations should be given the widest dissemination.

Please contact me if you have any questions.

Sincerely,

Paul J. Howard
Executive Director

attachment

	Gear in question	Federal Regs			Mass Regs		
		Gear marking	**Surface gear**	**Additional Area-specific requirements**	**Gear marking**	**Surface gear**	**Additional Marking requirements**
NMS/Monk (648.84)	**Bottom tending Fixed Gear including/but not limted (i/bnl) gillnet and longline**	Owner/vessel name or Official Number visible on the surface permanently affixed	Western-most radar reflector with pennant Eastern-most radar reflector	GOM-GB 30 degree deviations must be marked with additional marker	Buoys permanently marked or branded with owner's permit number	For gillnets the radar reflectors requirements are the same as federal with the exception that Mass does not specify the height of the flag	Buoy Line: green mark midway Exception: regarding line color; when in conflict with code color, use a white mark
Scup (628.123)	**Pot and Trap**	Must be marked with Code ID: - may be assigned by Reg. Dir - or by State regs			No Mass regulations specific to these fisheries to the left??? Or, is it implied by the regs below since they may be captured by the **"fish pots"** wording on the left???	**The Mass regulations listed below apply to lobster, fish, and conch pot trawls** (single pots tied together in a series and buoyed at both ends) 	
Black Sea Bass (648.144)	**Pot and Trap**	USCG Doc # or State Registration number					
Red Crab (648.264)	**Pot and Trap**	3" RC must be painted on top of each buoy 3" Vessel permit # on side of each buoy 3"Quantification number (#X of X amount of **trawls**)		As specified by the ALWTRP (229.32)			
Lobster (697.21)	**Pot and Trap**	Trap tag ID Code: - may be assigned by Reg. Dir - or by State regs	**3 or less traps in a trawl (TIAT):** Single buoy **More than 3 TIAT's:** Western-most radar reflector with pennant, Eastern-most radar reflector	As specified by the ALWTRP (229.32)	Buoys permanently marked or branded with owner's permit number	**Single pot**: single 7"x7" or 5"x11" stick optional but, if used, no flag attached **Pot Trawl**: -West-end with single buoy (7"x7"or5"x11"), 3' stick, and flag -East-end with double buoy combination (7"x7"or 5"x11")	Buoy Line: red mark midway

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Atlantic States Marine Fisheries Commission

New England Fishery Management Council
50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
C.M. "Rip" Cunningham, Jr., *Chairman* | Thomas A. Nies, *Executive Director*

May 15, 2013

RB
TK
KT

Mr. Robert Beal, Executive Director
Atlantic States Marine Fisheries Commission
1050 N. Highland St., Suite 200A-N
Arlington, VA 22201

Dear Bob:

At its April 23-25, 2013 meeting, the New England Fishery Management Council (Council) discussed the inconsistency and related safety concerns of lobster gear marking regulations. The Council believes that some of the current gear marking requirements may be unobservable on the water's surface and, in some cases, not strictly followed.

The Council now requests that the Atlantic States Marine Fisheries Commission (Commission) work together with the Atlantic Large Whale Take Reduction Plan (ALWTRP) and arrange meetings with the State Directors of ME, MA and NH, fishermen and lobster associations to discuss differences in lobster gear marking requirements in territorial waters and the EEZ that may lead to unsafe conditions for fishing vessels and loss of lobster gear.

Inshore lobstermen are required to follow state laws which may differ from state to state and from EEZ requirements. Rules that should be reviewed include single buoys for three or less traps, a three-foot stick on only one end of traps-in-a-trawl (TIAT) in Massachusetts waters (see attached chart), the use of sinking groundlines that may pull surface markings underwater with local tides, and no middle surface markings for TIATs less than 6,000 feet long. Also, some inshore lobstermen, who previously followed their state water rules, but who now also fish in the EEZ, may not realize they now are subject to different rules in the EEZ. The Council recommends a minimum standard for fixed gear similar to the current EEZ regulations for TIATs with more than three traps. The regulations require a western-most radar reflector with pennant and an eastern-most radar reflector. Finally, any changes to gear-marking regulations should be given the widest dissemination.

Please contact me if you have any questions.

Sincerely,

Thomas A. Nies

Thomas A. Nies
Executive Director

attachment

cc: Mr. David Gouveia, Atlantic Large Whale Take Reduction Plan
Mr. Douglas Grout
Mr. Terry Stockwell
Mr. David Pierce

	Gear in question	Federal Regs			Mass Regs		
		Gear marking	**Surface gear**	**Additional Area-specific requirements**	**Gear marking**	**Surface gear**	**Additional Marking requirements**
NMS/Monk (648.84)	**Bottom tending Fixed Gear including/but not limted (i/bnl) gillnet and longline**	Owner/vessel name or Official Number visible on the surface permanently affixed	Western-most radar reflector with pennant Eastern-most radar reflector	GOM-GB 30 degree deviations must be marked with additional marker	Buoys permanently marked with owner's permit number	For gillnets the radar reflectors requirements are the same as federal with the exception that Mass does not specify the height of the flag	Buoy Line: green mark midway Exception: regarding line color; when in conflict with code color, use a white mark
Scup (628.123)	**Pot and Trap**	Must be marked with Code ID: - may be assigned by Reg. Dir - or by State regs			**Single fish pots same as single lobster pots, for scup, sea bass, and conch. There is no red crab fishery in MA state waters.** **99.9% of fish pots in MA are singles.**	**The Mass regulations listed below apply to lobster, fish, and conch pot trawls** (single pots tied together in a series and buoyed at both ends) ⬇	
Black Sea Bass (648.144)	**Pot and Trap**	USCG Doc # or State Registration number					
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